Comments of the Attorneys General of California, Massachusetts, New York, Arizona, Colorado, Connecticut, Delaware, Hawai‘i, Illinois, Maine, Maryland, Michigan, Minnesota, Nevada, New Jersey, New Mexico, North Carolina, Oregon, Rhode Island, Vermont, Washington, Wisconsin, and the District of Columbia; and the Chief Legal Officers of the City of Chicago, Illinois; the City of New York, New York; the City of Oakland, California; Martin Luther King, Jr. County, Washington; the City and County of Denver, Colorado; the City and County of San Francisco, California; and the County of Santa Clara, California

on

the Proposed Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards, 90 Fed. Reg. 36,288 (Aug. 1, 2025)

VEHICLES COMMENT

EPA-HQ-OAR-2025-0194

September 22, 2025

I. INTRODUCTION

Few U.S. EPA actions stand to injure the American people so gravely, and on such deficient justification, as the proposed *Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards*, 90 Fed. Reg. 36,288 (Aug. 1, 2025) (Proposal). EPA's Proposal threatens to unwrite one of the great environmental and industrial success stories of the 21st century, the federal greenhouse gas (GHG) emission standards program for light-, medium-, and heavy-duty vehicles (the federal GHG program or GHG program). As discussed in the States and Local Governments' separate comment on EPA's proposed endangerment finding withdrawal, the proposed action will jeopardize millions of lives and trillions in economic value by massively increasing U.S. GHG emissions, all based on bad science and specious legal reasoning. *See* Comments of the Attorney Generals of Massachusetts, et al., EPA-HQ-OAR-0194 (Sept. 22, 2025) (Endangerment Finding or EF Comment); *see also* Comments of the Attorney Generals of New York, et al. on "A Critical Review of Impacts of GHG Emissions on the U.S. Climate," Climate Working Group, U.S. Department of Energy, DOE-HQ-2025-02007 (Sept. 2, 2025) (CWG Comment). The present comment addresses EPA's proposed consequence for withdrawing its endangerment finding: the repeal of all GHG standards for all classes of vehicles and all model years. This extraordinary, unprecedented disruption to the regulatory landscape of the last fifteen years will be catastrophic for the States and Local Governments' residents, industries, and public investments.

In Part II.A, we discuss the importance of the federal GHG program to protecting our residents, economies, and natural resources from climate change; the program's co-benefits in reducing criteria emission and air toxics pollution and mitigating health and environmental disparities; and the program's benefits for consumer choice and vehicle affordability through its incentives for technological innovation, which makes the most cutting-edge vehicles available to more drivers. Parts II.B and C discuss EPA's history of prescribing protective, technology-based emission standards, including GHG standards, and Congress's support for those standards—not just as a flagship environmental policy, but as tools for on-shoring domestic manufacturing and securing American technological competitiveness. Parts II.D and E discuss the GHG program's alignment with consumer demand for cleaner vehicles, including steadily increasing demand for electric vehicles (EVs), plug-in hybrids, and "strong" hybrid vehicles, and public and private investments in clean vehicle industries like battery assembly and EV charging infrastructure.

In Part III, we address EPA's primary basis for repealing the GHG program, the proposed withdrawal of the "standalone action" titled *Endangerment and Cause or Contribute Finding for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 Fed. Reg. 66,496 (Dec. 15, 2009) (2009 Endangerment Finding). 90 Fed. Reg. at 36,289, 36,292. This is, in Administrator Zeldin's words, his "Holy Grail" or "dagger to the heart" theory: that the withdrawal of that 2009 finding will dissolve the entire GHG program automatically, like the climactic blow in a sword-and-sorcery movie. Part III.A discusses why that "Holy Grail" theory is contrary to the Clean Air Act. Not only is EPA's proposed withdrawal of the 2009 Endangerment Finding unlawful (as detailed in the Endangerment Finding Comment), it is by itself ineffective, and EPA's authority

to "from time to time revise" standards is more modest than the Administrator believes. 42 U.S.C. § 7521(a)(1) (Section 202). Part III.B argues that, even assuming EPA had such authority, EPA should exercise its discretion to postpone the repeal of the GHG program until after its reconsideration of the 2009 Endangerment Finding is concluded, particularly considering the hundreds of billions of dollars invested in clean vehicle industries—by the States and Local Governments, but also by Congress itself—with the expectation that the federal GHG program would continue to support those investments.

In Part IV, we address EPA's alternative bases for repealing the GHG program. There, EPA proposes GHG standards may do more harm than good because controlling U.S. vehicles' GHG emissions will make no "scientifically measurable impact" on climate change, while GHG standards themselves harm the public welfare through three purported effects on vehicle retail markets: increasing vehicle prices, reducing consumer choice, and slowing the replacement of older vehicles with new ones (i.e., fleet turnover). 90 Fed. Reg. at 36,291. But, as discussed in Part IV.A, those alternative bases rest on novel and indefensible reinterpretations of the Clean Air Act's text, particularly the well-understood terms "requisite technology" in Section 202(a)(2) and "public health and welfare" in Section 202(a)(1). Part IV.B discusses why the Proposal's "public welfare" analysis is unreasoned and inaccurate. By elevating economic values about vehicle retail markets above the air pollution concerns central to Section 202, EPA's approach is untethered from Congress's design. Taking each consideration in turn, the Proposal's treatments of GHG and other air pollution, vehicle affordability, consumer choice, fleet turnover, and other social impacts of standards are just plain wrong. At every turn, the Proposal and EPA's draft regulatory impact analysis (Draft RIA) offer generalities over data, ignore prior findings and modeling, adopt flagrantly unrealistic assumptions, and ignore key aspects altogether. But even the draft RIA projects that the Proposal will *cost* consumers—not save—*$350 billion* on net, while prior, robust analyses by EPA show that existing GHG standards have negligible impacts on consumer choice and fleet turnover.

Part V identifies one reason for the Proposal's rushed, superficial, and unreasoned analysis: it does not represent a product of EPA's good-faith consideration of its mandate under the Clean Air Act, but a preordained result dictated by this administration's policy to promote fossil fuels at all costs. As the Administrator told the public this past March, he is determined to "drive a dagger straight into the heart of the climate-change religion." That is not rulemaking, and it is the American people who will be harmed by this unlawful and predetermined action.

The Proposal is irrecoverably unlawful and cannot be finalized.

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II. BACKGROUND

A. The Importance of the Federal GHG Program

1. The federal GHG program is crucial to protecting Americans from the worst effects of climate change

As discussed in the States and Local Governments' Endangerment Finding Comment, our residents, economies, infrastructure, and ecosystems are currently experiencing the devastating effects of climate change. Increased temperatures, extreme heat events, wildfires, sea level rise, and coastal flooding—to highlight just a few of the catastrophic impacts—are currently causing and projected to continue to cause significant damage. As average global surface temperatures rise and the intensity and frequency of these types of extreme weather events increases, the States and Local Governments face direct and compounding challenges to protect the health and welfare of our residents, our economies, and our natural resources. EF Comment Sections II.A, V.A.2.

The federal GHG program for vehicles is one of the most successful programs to protect Americans against the worst effects of climate change. Last year, EPA projected that the current standards for light-, medium-, and heavy-duty vehicles would prevent over 8.225 billion metric tons of CO_2-equivalent emissions over the next thirty years. 89 Fed. Reg. 27,842, 27,858 (Table 5) (Apr. 18, 2024) (2024 Multipollutant Rule); 89 Fed. Reg. 29,440, 29,454 (Table ES-5) (Apr. 22, 2024) (Phase 3 HD Rule). That impact is roughly equivalent to the CO_2 emissions reductions from stopping all international shipping across the world for eleven years.[1] If those reductions from the federal GHG program, alone, were the emissions of a country, that country would rank No. 33 on a list of the world's top emitters, between Bangladesh and the United Arab Emirates.[2] EPA previously monetized the benefit from those reductions at a total $1.82 trillion dollars in avoided climate harms. 89 Fed. Reg. at 27,860 (Table 8); 89 Fed. Reg. at 29,457 (Table ES-8).

Instead of securing those gains, EPA's Proposal will exacerbate the harms faced by our States and Local Governments by adding vast amounts of carbon pollution to the air, accelerating irreversible and deadly impacts to the United States and increasing the risk of "tipping points" that lead to runaway warming. EF Comment Sections IV.D.3, V.B.2.a.iii. According to modeling by the California Air Resources Board (CARB), the repeal of just the light-duty GHG standards alone could add 7.9 billion metric tons of CO_2-equivalent emissions through 2055. Analysis in Support of Comments of CARB on Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards at 50 (Sept. 22, 2025), EPA-HQ-OAR-2025-0194 (CARB Comment). A July 2025 EPA analysis of the proposed repeal—which EPA does not even disclose in its Proposal—appears to project a comparable 7.7 billion metric tons of additional CO_2-equivalent emissions through 2055 from repeal of light- and medium-duty standards alone.[3] If, however, the steady growth in sales of zero- and low-emitting vehicles stops or reverses, as this administration seems to hope, *see* EF Comment Section VI.D, CARB's modeling shows the Proposal's damage will be even greater, the light-duty standards' repeal

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[1] *See* M. Crippa et al., "GHG Emissions of All World Countries," *Publications Office of the European Union, Luxembourg* JRC138862 (2024), https://edgar.jrc.ec.europa.eu/report_2024 (2023 emissions from all international shipping were 746.943 million metric tons CO_2-equivalent).

[2] Based on 2023 GHG emissions multiplied by 30 years (2026–2055). *See* Crippa et al. (2024), *supra* note 1 (Bangladesh emitted 281 million metric tons CO_2-e/year and United Arab Emirates, 268 million metric tons CO_2-e/year).

[3] T. Sherwood, *Vehicle Rule LD/MD/HD Physical Effects* at 7 (July 7, 2025), EPA-HQ-OAR-2025-0194-0047 (hereinafter EPA Physical Effects). For reference, the 2024 Multipollutant Rule projected cumulative emission reductions of 7.2 billion metric tons of CO_2-equivalent from MY2027–32 light- and medium-duty standards. 89 Fed. Reg. at 27,858 (Table 5). Assuming the impact of repealing the entire heavy-duty GHG program is likewise greater than the emission reductions projected in the 2024 Phase 3 Rule for heavy-duty vehicles, that would place the cumulative GHG impact of the Proposal through 2055 well over 8.725 billion metric tons of CO_2-equivalent emissions. *See* 89 Fed. Reg. at 29,454 (Table ES-5).

alone adding as much as 14.6 billion metric tons of CO_2-equivalent emissions through 2055. CARB Comment at 50–51.

Make no mistake: this Proposal, if finalized, will kill our residents, impoverish our communities, devastate our farms and fisheries, and destroy our vital natural resources. It will make America sicker, poorer, hungrier, more vulnerable, more unequal, more exposed to global shocks, and ever farther away from the American dream.

2. The federal GHG program produces co-benefit reductions in criteria and air toxics pollution over and above those secured by criteria and toxics standards

The federal GHG program also leads to reductions of criteria pollutants like nitrogen oxides (NOx), volatile organic compounds (VOCs), and particulate matter (PM), over and above the emission reductions attributable to EPA's criteria standards. *See, e.g.*, 86 Fed. Reg. 74,434, 74,491–92 (Table 36 & 37) (Dec. 30, 2021) (showing criteria emission reductions from revised light-duty GHG standards for model years 2023–26). The sole modeling of criteria and air toxics pollution that EPA provides in the record—without any explanation or analysis—projects that, by 2055, the repeal of light- and medium-duty standards alone would add 660,130 tons of NOx, 2.15 million tons of non-methane organic gases and VOCs, 145,000 tons of $PM_{2.5}$, and 30 million tons of carbon monoxide, and thousands or tens of thousands of tons of air toxics like benzene, acetaldehyde, and formaldehyde.[4] In other words, it will lead to significantly dirtier new cars driving through American communities.

As discussed in the Endangerment Finding Comment, exposure to $PM_{2.5}$, NOx, and ozone (formed from ambient NOx and VOCs reacting in solar radiation) carries numerous cardiovascular, respiratory, and other negative human health impacts, including premature death. EF Comment Section II.A.3. Air toxics emitted from vehicles likewise include known carcinogens that contribute to grave public health harms. *Id.*

3. The federal GHG program reduces health and environmental disparities

As discussed in the Endangerment Finding Comment, climate change's impacts are experienced unequally, with heat-related risks, climate-driven disasters, and worsened ozone conditions falling especially hard on vulnerable subpopulations like low-income communities and farmworkers. EF Comment Section II.A.2. The federal GHG program mitigates not only these disparate climate risks, but also mitigates vulnerable communities' disproportionate exposure to criteria and air toxics co-pollutants to vehicles' GHG emissions. Thus, as EPA has previously found, GHG standards reduce emissions and precursors for $PM_{2.5}$, ground-level

[4] *See* EPA Physical Effects at 11–13. The tables list only annual emissions through 2055, and the cumulative emissions were derived from summing those annual emissions.

ozone, NOx, SOx, CO, and air toxics including acetaldehyde, benzene, and formaldehyde. 89 Fed. Reg. at 29,455; *see also* Revised 2023 and Later Model Year Light Duty Vehicle GHG Emissions Standards: Regulatory Impact Analysis (Dec. 2021), at 7-1, EPA-HQ-OAR-2021-0208-0849. EPA noted that these pollutants are concentrated near roadways and are linked to severe health outcomes, including "higher rates of asthma onset and aggravation, cardiovascular disease, impaired lung development in children, pre-term and low-birthweight infants, childhood leukemia, and premature death."[5] In the most recent rulemakings setting solely GHG standards, EPA estimated that non-GHG emission reductions of $PM_{2.5}$ would result in public health benefits of $650–960 million per year for light-duty vehicles and $300 million per year for heavy duty vehicles.[6]

Low-income communities and communities of color face disproportionately high exposure to vehicular air pollution, particularly from heavy-duty trucks and major roadways. A nationwide review in 2020 found this pattern throughout the country, noting that "people of color and those with lower household incomes were overrepresented in the near-roadway environment in almost every county in the U.S. and that the level of inequality increased where traffic volumes were higher."[7] A study by the EPA confirmed that "race is significantly associated with living near truck routes, even when controlling for income, state, county type, tract size, sex ratio, and population/household ratio," as are communities with the lowest median income.[8] Warehouses and ports serviced by significant numbers of heavy-duty trucks are also disproportionately located in low-income communities and communities of color.[9] Despite making up a small portion of overall road traffic, heavy-duty trucks emit disproportionate levels

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[5] EPA, *Near-Roadway Air Pollution and Health: Frequently Asked Questions* (Aug. 2014), at 1, https://nepis.epa.gov/Exe/ZyPDF.cgi/P100NFFD.PDF?Dockey=P100NFFD.PDF.

[6] EPA, Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards: Regulatory Update (Dec. 2021), at 10-3, https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1013NR8.pdf; 89 Fed. Reg. at 29,713.

[7] B. Antonczak et al., "2020 Near-Roadway Population Census, Traffic Exposure and Equity in the United States," *Transp. Res. Part D: Transp. & Env't*, 124:103965 (Dec. 2023), https://www.sciencedirect.com/science/article/pii/S1361920923003620.

[8] EPA, Memorandum to Docket EPA-HQ-OAR-2019-0055: Estimation of Population Size and Demographic Characteristics Among People Living Near Truck Routes in the United States (Mar. 21, 2022), at 24, EPA-HQ-OAR-2019-0055-0982.

[9] G.H. Kerr et al., "Air Pollution Impacts from Warehousing in the United States Uncovered with Satellite Data," *Nature Commun.* 15:6006 (July 2024), https://doi.org/10.1038/s41467-024-50000-0; EPA, "Environmental Justice Primer for Ports" (2020), https://19january2021snapshot.epa.gov/community-port-collaboration/environmental-justice-primer-ports-impacts-port-operations-and-goods_.html.

of harmful pollutants. For instance, the NOx emissions from heavy-duty trucks cause most of the racial disparity in NOx pollution in the United States.[10]

Census-tract data illustrate how vehicle emissions disproportionately affect overburdened communities. In California, the census tracts with the highest levels of diesel particulate matter and $PM_{2.5}$ are located near major truck routes, where heavy-duty vehicles (including out-of-state vehicles) constitute significant traffic. The federal GHG program is especially critical for air quality in these overburdened communities, where people of color constitute more than 70% of the population:

Census Tracts in California with Highest Levels of Ozone, $PM_{2.5}$, and Diesel PM Exposure[11]

Census Tract	Location	People of Color	Ozone	$PM_{2.5}$	Diesel PM
6065041408	Riverside	78.1%	91st	92nd	97th
6071002109	Ontario	73.2%	91st	96th	93rd
6071003301	Fontana	91.6%	97th	93rd	94th
6065040303	Jurupa Valley	79.3%	95th	94th	97th
6029003113	Bakersfield	80.4%	94th	100th	96th
6029001801	Bakersfield	57.3%	94th	100th	95th
6029002812	Bakersfield	72.5%	94th	100th	96th
6029002813	Bakersfield	76.6%	94th	100th	95th

The federal GHG program also produces important emission reductions at upstream pollution sources that disproportionately impact low-income communities and communities of color, including petroleum refineries and oil wells.[12] These facilities emit multiple air pollutants

[10] M.A. G. Demetillo et al., "Space-based Observational Constraints on NO2 Air Pollution Inequality from Diesel Traffic in Major US Cities," *Geophysical Research Letters* 48:17 (2021), at 9, https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2021GL094333.

[11] Data from CalEnviroScreen 4.0, California Office of Environmental Health Hazard Assessment, https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40. Metrics for ozone, $PM_{2.5}$, and diesel particulate matter exposure are the census tract's percentile ranking as compared to all census tracts in California, demonstrating that these census tracts are among those with the greatest pollution exposure statewide. The raw data for these percentile rankings are available on the CalEnviroScreen 4.0 website. The eight census tracts shown here are examples of the 29 census tracts in California that rank above the 90th percentile statewide for exposure to ozone, fine particulate matter, and diesel particulate matter, all of which are communities in Bakersfield or the Inland Empire near major transportation thoroughfares.

[12] A. Carpenter & M. Wagner, "Environmental Justice in the Oil Refinery Industry: A Panel Analysis Across United States Counties," *Ecol. Econ.* 159:101 (2019), https://www.sciencedirect.com/science/article/abs/pii/S092180091830586X; NAACP & Clean Air Task Force, *Fumes Across the Fence-Line: The Health Impacts of Air Pollution from Oil & Gas*

including NOx, $PM_{2.5}$, heavy metals, benzene, and formaldehyde, in addition to causing water contamination.[13] Proximity to these facilities is linked to a slew of health problems, such as cancers, chronic disease, and adverse birth outcomes, even after accounting for other demographic factors.[14] As with transportation corridors, census tract-level data from California demonstrate these concerns. For example, the census tracts near the California refinery with the largest output (the Marathon Refinery in Carson)[15] are overwhelmingly communities of color with high cumulative pollution burdens and adverse health outcomes:

Census Tracts near the Marathon Refinery in Carson, California[16]

Census Tract	People of Color	Pollution	Toxic Releases	Asthma	Heart Disease
6037294120	98.0%	93rd	99th	83rd	93rd
6037543306	92.4%	96th	99th	57th	52nd
6037543905	97.2%	84th	99th	72nd	77th
6037294110	90.5%	88th	99th	75th	83rd

Facilities on African American Communities (Nov. 2017), https://cdn.catf.us/wp-content/uploads/2017/11/21092330/catf-rpt-naacp-4.21.pdf; D.J. X. Gonzalez et al., "Historic Redlining and the Siting of Oil and Gas Wells in the United States," *J. Exposure Sci. Env't Epidemiology* 33:76 (Jan. 2023), https://pubmed.ncbi.nlm.nih.gov/35418707/.

[13] R.A. Tavella et al., "A Review of Air Pollution from Petroleum Refining and Petrochemical Industrial Complexes: Sources, Key Pollutants, Health Impacts, and Challenges," *ChemEngineering* 9:13 (2025); D.J. X. Gonzalez et al., "Upstream Oil and Gas Production and Ambient Air Pollution in California," *Sci. Total Env't* 806 (2022), https://www.sciencedirect.com/science/article/pii/S0048969721053754; L. Markow, et al., Envt. Integrity Project, *Oil's Unchecked Outfalls: Water Pollution from Refineries and EPA's Failure to Enforce the Clean Water Act* (2023), https://environmentalintegrity.org/wp-content/uploads/2023/01/Oils-Unchecked-Outfalls-03.06.2023.pdf.

[14] J. Johnston & L. Cushing, "Chemical Exposures, Health, and Environmental Justice in Communities Living on the Fenceline of Industry," *Curr. Envtl. Health Rep.* 7:48 (2020), https://pmc.ncbi.nlm.nih.gov/articles/PMC7035204/pdf/nihms-1551486.pdf; S.B. Williams et al., "Proximity to Oil Refineries and Risk of Cancer: A Population-Based Analysis," *JNCI Cancer Spectrum* 4:6 (2020), https://pmc.ncbi.nlm.nih.gov/articles/PMC7691047/pdf/pkaa088.pdf.

[15] Cal. Energy Comm'n, "California's Oil Refineries" (data as of Oct. 2024), https://www.energy.ca.gov/data-reports/energy-almanac/californias-petroleum-market/californias-oil-refineries.

[16] Data from CalEnviroScreen 4.0, California Office of Environmental Health Hazard Assessment, https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40. Metrics for overall pollution burden, toxic releases, asthma, and heart disease are the census tract's percentile ranking as compared to all census tracts in California, demonstrating that these census tracts are among those with the greatest pollution exposure and detrimental health impacts statewide.

Preserving a protective federal GHG program is a critical piece of reducing these disparate health outcomes and environmental inequality for our residents.

4. The federal GHG program enhances technological innovation, global competitiveness, and consumer choice

A robust regulatory program for vehicles' GHG emissions is crucial to the success of the American automotive industry, including its myriad supply chains, which our States and Local Governments have invested heavily in supporting. In today's global automotive market, the most cutting-edge technological innovations shaping the future of the industry—and American competitiveness within that industry—are also technologies that reduce vehicle GHG emissions. Moreover, many global markets in which U.S. automakers compete have prioritized zero- and low-emitting vehicles. The federal GHG program provides a stable policy signal supporting the U.S. auto industry's investment in emission-reducing technologies that make U.S.-made vehicles cleaner, cheaper, and better to drive.

Decades of economic research confirm that well-designed environmental regulations foster technological innovation.[17,18,19,20,21,22] Several factors explain this effect: the right form of

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[17] R. Rozendaal & H. Vollebergh, "Policy-induced innovation in clean technologies: Evidence from the car market," *J. Ass'n of Envt. & Resource Economists* (2024), https://doi.org/10.1086/731834.

[18] D.M. Hart, "When Does Environmental Regulation Stimulate Technological Innovation?" *Info. Tech. & Innovation Found.* (2018), https://itif.org/publications/2018/07/23/when-does-environmental-regulation-stimulate-technological-innovation/

[19] S. Naimoli et al., International Council on Clean Transportation (ICCT), *International Competitiveness and the Auto Industry: What's the Role of Motor Vehicle Emission Standards?* (2017), https://theicct.org/publication/international-competitiveness-and-the-auto-industry-whats-the-role-of-motor-vehicle-emission-standards/.

[20] C. Ma et al., "Technology innovation and environmental outcomes of road transportation policy instruments," *Nature Commun.* 16, 4467 (May 2025), https://www.nature.com/articles/s41467-025-59111-8.

[21] S. Ambec et al., "The Porter Hypothesis at 20: Can Environmental Regulation Enhance Innovation and Competitiveness?" (Jan. 2011), at 7–10, https://www.journals.uchicago.edu/doi/abs/10.1093/reep/res016?journalCode=reep.

[22] S. Houde & C. Spurlock, Lawrence Berkeley Nat'l Laboratory, *Do Energy Efficiency Standards Improve Air Quality? Evidence from a Revealed Preference Approach* (Jun. 2015), at 4, 34, https://eta-publications.lbl.gov/sites/default/files/lbnl-182701.pdf (showing U.S. energy efficiency standards for appliances from 2001–2011 improved product quality while prices remained stable or decreased, and observing, "standards reduce product differentiation in the regulated dimension"—i.e., energy efficiency—"which increases competition among products and incentivizes firms to further differentiate by expanding quality").

environmental regulation reduces firms' uncertainty that investments in environmentally beneficial technology will be valuable; creates legal or economic pressure that motivates innovation and progress; levels the transitional playing field among competitors within the regulated industry; and corrects organizational or market failures that prevent private firms from making profit-maximizing decisions about investments in research and development.[23] These innovation benefits are most likely to occur where the regulation is designed flexibly enough to leave the technical approach to industry, fosters continuous improvement, and minimizes uncertainty at every stage.[24]

The Section 202 program is just such a regulatory program primed to induce innovation, and its long history confirms its innovation benefits, including in the field of GHG technologies. Over the last sixty years, EPA's and California's vehicle emissions standards supported the development and commercialization of now-universal vehicle technologies like catalytic converters and fuel injection.[25] In particular, the GHG fleet-average standards, supported by credit banking and trading, create the flexible, performance-based targets likeliest to foster innovation. 89 Fed. Reg. at 27,915–16. As EPA previously found, Section 202(a) standards, including the GHG program, leave the choice of compliance strategy to automakers, providing room for superior technologies to emerge and out-compete those that EPA itself had used to set the standards:

> These choices are real and valuable to manufacturers, as attested to by the historical record. The real-world results of our prior rulemakings make clear that industry sometimes chooses to comply with our standards in ways that the Agency did not anticipate, presumably because it is more cost-effective for them to do so. In other words, while EPA sets standards that are feasible based on our modeling of potential compliance pathways, manufacturers may find what they consider to be better pathways to meet the standards and may opt to comply by following those pathways instead.

Id. at 27,896–97; *see also id.* at 28,087–88. And, with the exception of EPA's SAFE II rule, the GHG program's fifteen-year history shows the steady progress and regulatory stability that produces the technological innovation and competitiveness that Congress envisioned for the U.S. auto industry. As the automakers themselves emphasize, a stabler regulatory landscape—one that avoids the ideological seesawing of successive rollbacks and stringency increases, and instead

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[23] Ambec et al. (2011)*, supra* note 21, at 3, 5–6.

[24] *Id.* at 10–12 (reviewing studies of market-based mechanisms, performance standards, and other flexible environmental regulations).

[25] P.K. Amar, NESCAUM, *Environmental Regulation and Technology Innovation: Controlling Mercury Emissions from Coal-Fired Boilers* (Sept. 2000), at II-14 to II-17 (using Section 202 vehicle emissions program as a case study).

provides a steady policy signal to guide effective investments in vehicle technologies—is the critical missing piece for the auto industry.[26]

Technological innovation not only benefits the environment and American industrial competitiveness; it also enhances consumer choice. Specifically, a robust GHG program enhances the affordability, performance, and diversity of zero- and low-emitting vehicles available to consumers. Consumers show no preference for "high emissions" as a vehicle attribute: they want affordable cars that meet their performance needs.[27] Electric vehicles and plug-in hybrids also carry enhanced performance attributes that consumers value, such as fuel and maintenance savings; higher horsepower, responsiveness, and acceleration; and reduced noise.[28] Consumer research shows that, where EVs and plug-in hybrids are available, consumers will buy them, and often at a premium.[29] Those EV characteristics or concerns that have historically inhibited adoption—purchase price differential, range anxiety, charging time, cold-weather performance—do not represent inherent limitations of EV technology, as demonstrated by EV successes in regions that have supported zero-emission technologies: consider China's 1,000-mile range EVs[30] and five-minute chargers.[31] Purchase price parity, greater ranges, faster

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[26] Coral Davenport & Jack Ewing, "Automakers to Trump: Please Require Us to Sell Electric Vehicles," *N.Y. Times* (Nov. 21, 2024), https://www.nytimes.com/2024/11/21/climate/gm-ford-electric-vehicles-trump.html (describing Alliance for Automotive Innovation's November 2024 letter to President Trump urging "stability and predictability in auto-related emissions standards" as critical to a successful, competitive American auto industry).

[27] *See* C. Forsythe et al., *Will pickup truck owners go electric?* (2023), https://www.cmu.edu/cit/veg/publications.html.

[28] EPA, *2024 EPA Automotive Trends Report* (Nov. 2024), at 32–34, https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P101CUU6.pdf; EPA, *Literature Review of U.S. Consumer Acceptance of New Personally Owned Light Duty Plug-in Electric Vehicles* (Jan. 2023), at 20, EPA-HQ-OAR-2022-0985-3985.

[29] C. Forsythe et al., "Technology Advancement is Driving Electric Vehicle Adoption," *Sustainability Science (PNAS)* 120:23 (2023), https://www.pnas.org/doi/epdf/10.1073/pnas.2219396120 (finding, given sufficient technological innovation, "even if all purchase incentives were entirely phased out, BEVs could still have a market share of about 50% relative to combustion vehicles by 2030, based on consumer choice alone"), *cited in* 2024 Multipollutant Rule RIA at 4-8.

[30] Danny Lee, "China's 1,000-Mile EVs Render Range Anxiety Obsolete," *Bloomberg* (June 2, 2025), https://www.bloomberg.com/news/newsletters/2025-06-02/china-s-1-000-mile-evs-render-range-anxiety-obsolete. Notably, Tesla sells a Model 3 with 513 miles of range in China, but not in the U.S. Brad Anderson, "Tesla's Longest Range EV Is Here But Not For You," *Carscoops* (Aug. 13, 2025), https://www.carscoops.com/2025/08/tesla-has-a-new-range-king-but-only-for-china/.

[31] *See, e.g.*, Claire Brown, "Why Can't the U.S. Build 5-Minute E.V. Chargers?" *N.Y. Times* (Aug. 19, 2025), https://www.nytimes.com/2025/08/19/climate/us-electric-vehicle-chargers-china.html (describing China's advantage in introducing fast EV chargers that provide hundreds of miles of range in roughly five minutes).

charging times, and improved cold-weather performance are a matter of technological innovation, production experience, and economies of scale.[32] Thus, a regulatory regime that enhances real consumer choice is one that promotes innovation in this cutting-edge vehicle technology, not one that protects legacy technology at the expense of innovation.

B. EPA's History of Protective, Technology-Based Emission Standards for Dangerous Pollutants

More than half a century ago, Congress established a statutory regime to reduce motor vehicle emissions in light of evidence that "[t]he automobile has had a devastating impact on the American environment" and "[a]utomotive pollution constitutes in excess of 60% of our national air pollution problem." *Int'l Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 622 (D.C. Cir. 1973); Motor Vehicle Pollution Control Act, Pub. L. No. 89-272, § 201, 79 Stat. 992, 992 (1965). Under that regime, Congress has directed EPA to promulgate "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." 42 U.S.C. § 7521(a)(1).[33] Congress has required that these standards apply "whether such vehicles and engines are designed as complete systems or incorporate devices to prevent or control such pollution." *Id.* EPA's standards "shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance." *Id.* § 7521(a)(2).

From 1966 through 1970, pursuant to its statutory mandate, EPA's predecessor promulgated three sets of emissions standards to control crankcase emissions, exhaust emissions of hydrocarbons and carbon monoxide, and evaporative fuel emissions. 31 Fed. Reg. 5170 (Mar.

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[32] Several lines of evidence indicate that China's vehicle emission standards were crucial in spurring the technological innovation that produced these patents and lowered prices—not government subsidies alone. *See, e.g.*, Y. Deng et al., "Examining the Influence of Emission Standards on Green Innovation: A Study Across Automotive Supply Chain Entities: Firms, Suppliers, and Universities" (Jun. 30, 2024), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4716653; M. Totty, *Tough standards led to an increase in auto-related patents* (Apr. 17, 2024), https://anderson-review.ucla.edu/strict-emissions-rules-in-china-spur-automotive-innovations/; Stanford Center on China's Economy & Institutions, *It's Not Just Subsidies: How China's EV Battery Firms Learned Their Way to Dominance* (Aug. 15, 2025), https://sccei.fsi.stanford.edu/china-briefs/its-not-just-subsidies-how-chinas-ev-battery-firms-learned-their-way-dominance.

[33] *Compare with* Pub. L. No. 89-272, § 202(a), 79 Stat. at 992–93 ("The Secretary shall by regulation, giving appropriate consideration to technological feasibility and economic costs, prescribe as soon as practicable standards, applicable to the emission of any kind of substance, from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause or contribute to, or are likely to cause or contribute to, air pollution which endangers the health or welfare of any persons . . . .").

30, 1966); 33 Fed. Reg. 8304 (June 4, 1968); 35 Fed. Reg. 17,288 (Nov. 10, 1970). Since it was formed in 1970, EPA has finalized upwards of fifty rules setting or amending emissions standards for various classes of vehicles and myriad air pollutants that EPA determined may endanger public health or welfare. *See e.g.*, 36 Fed. Reg. 12,652 (Jul. 2, 1971) (EPA's first emission standards for NOx), 45 Fed. Reg. 14,496 (Mar. 5, 1980) (EPA's first emission standards for PM).

In the 2009 Endangerment Finding, EPA concluded that "greenhouse gases in the atmosphere may reasonably be anticipated both to endanger public health and to endanger public welfare." 74 Fed. Reg. at 66,497; *see* EF Comment Section II.B.1 (States' advocacy on federal GHG standards for vehicles). And, in 2010, EPA promulgated its first set of GHG emission standards applicable to light-duty vehicles model years 2012 through 2016. 75 Fed. Reg. 25,324 (May 7, 2010). Since then, EPA has promulgated and amended GHG emission standards for light-, medium-, and heavy-duty vehicles multiple times, most recently for model years 2027 to 2032. 76 Fed. Reg. 57,601 (Sept. 15, 2011) ("Phase 1" medium- and heavy-duty GHG standards); 77 Fed. Reg. 62,624 (Oct. 15, 2012) (MY2017–25 light-duty standards); 81 Fed. Reg. 73,478 (Oct. 25, 2016) ("Phase 2" medium- and heavy-duty standards); 85 Fed. Reg. 24,174 (Apr. 30, 2020) ("SAFE II" revised light-duty standards for MY2021–26); 86 Fed. Reg. 74,434 (Dec. 30, 2021) (revised light-duty standards for MY2023–26); 89 Fed. Reg. 27,842 (Apr. 18, 2024) (multipollutant light- and medium-duty standards for MY2027–32); 89 Fed. Reg. 29,440 (Apr. 22, 2024) ("Phase 3" heavy-duty GHG standards).

Throughout the more than fifty years that it has been translating technological progress into increasingly stringent standards for various pollutants, EPA's standards have anticipated a wider use of existing emission control technologies and application of new or emerging emission control technologies across vehicle classes, providing sufficient lead time for industry to apply such technologies to meet the standards. *See, e.g.*, 44 Fed. Reg. 6650, 6652 (Feb. 1, 1979) (trap-oxidizers), 66 Fed. Reg. 5002, 5049–54 (Jan. 18, 2001) (NOx adsorbers), 75 Fed. Reg. at 25,454–55 (hybrid technologies); *see* 88 Fed. Reg. 29,184, 29,187–88 (May 5, 2023). This long-standing practice is consistent with Congress's "expect[ation that EPA] press for the development and application of improved technology rather than be limited by that which exists today." *NRDC v. EPA*, 655 F.2d 318, 328 (D.C. Cir. 1981); *see* 42 U.S.C. § 7521(a)(2). Accordingly, EPA has routinely analyzed a wide array of technologies—from aerodynamic and air conditioning technologies to hybrid and zero-emission technologies—in its rulemakings to simulate manufacturers' compliance with alternative stringency levels. Despite basing standards on particular control technologies and evaluating application of those technologies in assessing the feasibility of compliance, EPA has never designed its GHG standards as a "mandate" to use any particular technology. In fact, in its 2024 GHG rulemakings, EPA noted several examples of automakers using wholly different and unanticipated technologies to achieve compliance with Section 202(a) standards.

For example, in 1985, EPA set heavy-duty PM standards that were anticipated to require the use of particulate filters, but automakers complied by making changes to the combustion process. Multi-Pollutant Emissions Standards for MY2027 and Later Light-Duty and Medium-

Duty Vehicles: Response to Comments 312 (Mar. 2024), EPA-HQ-OAR-2022-0829-5743 (2024 Multipollutant Rule Resp. to Comments). In 2001, EPA based heavy-duty NOx standards on NOx adsorber technology, but the industry complied by using selective catalyst reduction technology instead. 66 Fed. Reg. at 5035–36; 2024 Multipollutant Rule Resp. to Comments at 312–13. In the inaugural GHG standards themselves, EPA modeled a particular compliance pathway that showed automakers cost-effectively applying various control technologies at specific "penetration" rates, while in reality, automakers ended up complying with dramatically different pathways:

Control Technology	**Projected Rate (MY2016)**	**Actual Rate (MY2016)**
Dual clutch transmissions	62%	3%
6-speed automatic transmissions	28%	55%
Start-stop transmission	45%	10%
Strong hybrid electric vehicles	6.5%	2%

Nevertheless, as EPA pointed out, the industry not only achieved compliance with the MY2012–2016 GHG standards, but generated substantial overcompliance credits. 2024 Multipollutant Rule Resp. to Comments at 312.

C. Congress's Consistent Policy Supporting Innovation in Clean Vehicle Technologies, Including Zero-Emission Technologies

Since the 1965 Motor Vehicle Pollution Control Act, which added Section 202 to the Clean Air Act, Congress has steadfastly supported domestic innovation in vehicle pollution technology as a core environmental protection strategy. This consistent congressional policy appears throughout the Clean Air Act and indeed, across multiple federal programs on vehicle technology such as the Energy Policy and Conservation Act of 1975 (EPCA), the Electric & Hybrid Research, Development, and Demonstration Act of 1976 (EV Demonstration Act), the Energy Independence & Security Act of 2007 (EISA), and the Infrastructure, Investment, and Jobs Act of 2021 (IIJA).

1. The Clean Air Act

In 1965, vehicle pollution was a dynamic scientific field, with California's groundbreaking vehicle emissions program having recently spurred dramatic breakthroughs in catalyst controls, blowby systems, and other cutting-edge technologies.[34] Congress crafted Section 202 so that the federal vehicles program would encourage such innovation. By providing

[34] *Technical Hearings Held on Progress and Programs Relating to the Abatement of Air Pollution: Hearings before a Special Subcomm. On Air and Water Pollution of the Sen. Comm. on Public Works*, 88th Cong. 860–62 (1964).

for lead time "necessary [for] the development and application of the requisite technology," Section 202(a)(2) authorizes standards that "require" technological development and obligate the industry to "apply" those technologies to a greater extent than it previously had. 42 U.S.C. § 7521(a)(2). Indeed, the first Section 202 standards, for model year 1968, required the complete elimination of crankcase emissions, effectively requiring blowby systems on all new light-duty vehicles. 31 Fed. Reg. at 5171. Subsequent standards for 1972-74 required 69-80% reductions in exhaust emissions through greater "application of current control technology." 35 Fed. Reg. at 17,288. EPA has also prescribed standards—upheld by the D.C. Circuit—premised on anticipated technology. *NRDC v. EPA*, 655 F.2d 318, 326–27, 332–33 & n.25 (D.C. Cir. 1981).

In particular, Section 202 contemplates the development and application of a particular suite of clean vehicle technologies: low- and non-polluting powertrains, like the electrified powertrains of battery-electric vehicles, plug-in hybrids, and strong hybrids. *See* 42 U.S.C. § 7521(a)(1) (applying § 202 standards to "vehicles … designed as complete systems" to "prevent or control" pollution). Indeed, Congress removed bill language that would have restricted EPA's authority to gasoline- and diesel-fueled propulsion systems. Senator Muskie's original bill for the 1965 act provided standard-setting authority for "gasoline powered" and "diesel powered vehicles" only.[35] But the House removed those limits and instead defined "motor vehicle" as "*any* self-propelled vehicle designed for transporting persons or property on a street or highway."[36] By broadening the definition of "motor vehicle" beyond gasoline- and diesel-fueled vehicles, Congress left room for the development of non-polluting propulsion systems, including electrified powertrains.

Congress subsequently directed EPA to use the federal vehicle emissions program to push clean vehicles technology further. In the 1970 Clean Air Amendments, Congress, impatient with the progress of catalytic-converter technology, "grasped the nettle" and directed EPA to use its Section 202 authority to require "at least 90 per cent" emissions reductions by model year 1975, driving the state of technology forward. *Int'l Harvester*, 478 F.2d at 623. Following hearings on electric vehicle technology in 1967,[37] Congress directed federal resources toward "inherently low-polluting propulsion technology," Pub. L. No. 91-604, § 10, 84 Stat. 1676, 1702 (1970), because of its potential to meet Section 202 standards. *See* 42 U.S.C. § 7521(e) (prescribing how "new power source[s] or propulsion system[s] for new motor vehicles" should be certified to meet §202 regulations). Congress likewise provided research grant funds to "develop low emission alternatives to the present internal combustion engine." *Id.* § 7404(a)(2).

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[35] S.306, 89th Cong. 1, 4–5 (Jan. 7, 1965).

[36] S.306, 89th Cong. 21, 27 (Aug. 31, 1965) (emphasis added); 111 Cong. Rec. 25073 (Sept. 24, 1965) (amending title to remove restriction to gasoline and diesel vehicles).

[37] *Joint Hearings on S. 451 and S. 453 Before the Comm. On Commerce and Subcomm. On Air and Water Pollution of the Sen. Comm. On Commerce and Public Works for*, 90th Cong. 297 (1967) (statement of presiding Sen. Frank Laushe) (holding hearings on "electric vehicles and other alternatives to the internal combustion engine"); *see also* S. Rep. No. 90-403 at 59 (1967).

In the 1990 Clean Air Act amendments, Congress added Part C to Title II of the Clean Air Act, the Clean Fuels Vehicles program, which expressly fostered zero-emission technologies and other clean vehicle technologies through a production- and sales-mandate pilot program in California and purchase requirements for large fleets. *Id.* §§ 7586, 7589. Like the 1970 amendments, the Clean Fuels Vehicles program leveraged EPA's regulatory power under the Clean Air Act to incentivize the development and widespread adoption of clean vehicle technology, relying on the innovation of the U.S. auto industry to make strides in air pollution.

2. EPCA, the EV Demonstration Act, and the Alternative Motor Fuels Act

Congress's policy support for clean vehicle innovation—including through federal regulatory programs—continued through the 1970s and 1980s with legislation on vehicle fuel economy and alternative fuels. First, in EPCA, Congress designed the corporate average fuel economy (CAFE) program to require automakers to meet "maximum feasible" fuel economy standards, based in key part on what was technologically feasible. 49 U.S.C. § 32902(f). Yet, recognizing an inherent interplay between fuel economy technologies and vehicle pollution technologies, Congress subordinated fuel economy standards to Clean Air Act emission standards, deciding that, in a technological tradeoff between a cleaner vehicle and a more efficient vehicle, the cleaner vehicle would get priority. *Id.*; *see also* 15 U.S.C. § 2002(d), (e) (1976) (original version of EPCA directing NHTSA to grant variances from statutory fuel economy standards to accommodate automaker compliance with Clean Air Act standards); 43 Fed. Reg. 11,995, 12,009–11 (Mar. 23, 1978) (analyzing whether compliance with Clean Air Act vehicle emission standards carried fuel economy penalties that justified lower "maximum feasible" standards).

The Electric & Hybrid Vehicle Research, Development, and Demonstration Act of 1976 (EV Demonstration Act), Pub. L. No. 94-413, 90 Stat. 1260, and the Chrysler Corporation Loan Guarantee Act of 1979 (Chrysler Loan Act), Pub. L. 96-185, 93 Stat. 1324 (1980), reaffirmed Congress's interest in incentivizing clean vehicle technology through federal regulatory programs. In the EV Demonstration Act, bipartisan supermajorities declared it "the policy of Congress" to "encourage and support accelerated research into, and development of, electric and hybrid vehicle technologies" and "facilitate, and remove barriers to, the use of electric and hybrid vehicles in lieu of gasoline- and diesel-powered motor vehicles, where practicable." 15 U.S.C. § 2501(b); *see* G. Dotson, *Congress's Fifty Year Mission to Transition Motor Vehicles: A Brief History of Federal Electric Vehicle Policy in the United States*, 33 N.Y.U. Envtl. L.J. 93, 94–95 (2025) (detailing Congress's override of President Ford's veto of the EV Demonstration Act).[38] North Carolina Representative Charlie Rose drove 50 members of Congress around Capitol Hill in his own electric car to build support for overriding the presidential veto. Dotson, *Congress's Fifty Year Mission*, at 95–96. And while the original EV Demonstration Act's

[38] Available at SSRN: https://ssrn.com/abstract=5256344.

Section 13(c) charged the Department of Energy with studying "incentives to promote broader utilization and consumer acceptance of electric and hybrid vehicle technologies," Pub. L. No. 94-413, § 13(c), 90 Stat. at 1269, the Chrysler Loan Act amended Section 13(c) to focus explicitly on incentivizing EVs through the CAFE program. The new Section 13(c) charged EPA with promulgating regulations to include EVs in automakers' CAFE fleet-average calculation and the Energy Secretary with evaluating such inclusion as an "incentive for the early initiation of industrial engineering development and initial commercialization of electric vehicles in the United States." Pub. L. No. 96-185, § 18, 93 Stat. at 1336, *codified at* 15 U.S.C. § 2512(c); *see* 45 Fed. Reg. 49,256 (July 24, 1980) (EPA implementing regulation); 46 Fed. Reg. 22,747 (Apr. 21, 1981) (Department of Energy regulations for calculating EVs' petroleum equivalency).

Subsequently, Congress amended EPCA in the Alternative Motor Fuels Act of 1988 (AMFA), Pub. L. No. 100-494, 102 Stat. 2441, to incentivize the introduction of clean vehicle technologies beyond electric vehicles through the CAFE program. By assigning higher fuel economy values to alternative-fueled vehicles, Congress leveraged the CAFE program to "encourage … the production of" such vehicles. *Id.* §§ 3, 6, 102 Stat. at 2442, 2448–49. The AMFA also directed NHTSA to study how vehicle regulatory programs might be amended to further promote "electric vehicles." *Id*. § 7(a), 102 Stat. at 2452.

That EV study, completed in 1990, reported "a strong consensus among the various groups engaged in EV development and research, that automobile manufacturers retain the option to include equivalent petroleum-based fuel economy values for EVs in their corporate average fuel economy … provided EVs are not used to determine the manufacturer's capability for purposes of establishing a fuel economy standard."[39] Two years later, in the Energy Policy Act, Congress adopted that recommendation in statute, bringing electric vehicles under the statutory alternative-fueled vehicle incentive established in AMFA. Pub. L. No. 102-486, § 302, 106 Stat. 2776, 2868–71 (1992).

3. Congressional Support from 1992 to the Present

Congress continued to support clean vehicle innovation as a key environmental protection strategy throughout the next thirty years. Dotson, *Congress's Fifty Year Mission*, at 136-56. In the Energy Policy Act of 1992 (EPAct92), Pub. L. No. 102-486, 106 Stat. 2776, and the Energy Policy Act of 2005 (EPAct05), Pub. L. No. 109-58, 119 Stat. 594, Congress enacted dozens of demonstration projects, fleet requirements, tax credits, grant and loan programs, and public education programs to encourage the increased development and use of low-emission vehicles and alternative-fueled vehicles, including electric vehicles. *See, e.g.*, Pub. L. No. 102-486, §§ 303–307, 401, 409–14, 501–514, 601–626, 106 Stat. at 2871–73, 2875, 2882–2905; Pub. L. No. 109-58, §§ 706, 711–12, 721–23, 731, 741–43, 754, 756–57, 781–83, 791–97, 801–16, 911, 915, 1341–42, 1601–02, 1701–04, 119 Stat. at 817–26, 828–33, 835–55, 857–58, 861–62,

[39] NHTSA, *Federal Regulations Needing Amendment to Stimulate the Production and Introduction of Electric/Solar Vehicles: A Report to Congress* (Jan. 1990), at I-2 to I-3.

1038–51, 1109–22. Thus, for example, Congress directed DOE to create commercial demonstration programs "designed to accelerate the development and use of electric motor vehicles," 42 U.S.C. § 13281, fund research and demonstration projects on developing EV charging infrastructure, 42 U.S.C. § 13291, and support technologies to improve "commercialization" and "environmental performance" of plug-in hybrids, 42 U.S.C. §§ 16051(b), 16191(a)(2)(A).

In the Energy Independence & Security Act of 2007 (EISA), Pub. L. No. 110-140, 121 Stat. 1492, Congress expanded its support for clean vehicle innovation, adding programs to promote clean vehicle technologies not only for their emissions benefits, but also to boost domestic auto manufacturing. *Id.* §§ 131–136, 121 Stat. at 1508–16. Thus, in addition to grants to "encourage the use of plug-in electric drive vehicles" and other electrified transportation projects, 42 U.S.C. § 17011(b), (c), EISA created new programs "to encourage domestic production of efficient hybrid, plug-in electric hybrid, plug-in electric drive, and advanced diesel vehicles," especially through the conversion of retiring factories, *id.* §§16062(a)(2), 17013 (DOE grants, subsidies, and loans to domestic manufacturing of EVs, plug-in hybrids, and other "advanced technology vehicles"). *See also id.* §§ 16513(b)(8), 17012(a) (loan guaranty programs for domestic manufacturing of EVs, vehicle batteries, and components). EISA also strengthened federal fleet purchasing requirements from the EPAct92, Pub. L. No. 110-140, §§ 141–42, 121 Stat. at 1517–19, imposing a default rule that new federal light- and medium-duty vehicle acquisitions must be "low greenhouse gas emitting vehicles," defined according to "the most stringent standards for vehicle greenhouse gas emissions applicable to and enforceable against motor vehicle manufacturers for vehicles sold anywhere in the United States." 42 U.S.C. § 13212(f)(2), (3).

In the Energy Improvement and Extension Act of 2008, Pub. L. No. 110-343, § 205, 122 Stat. 3765, 3835–39, signed by President George W. Bush, and the American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, § 1142, 123 Stat. 115, 328–331 signed by President Obama, Congress in the midst of the Great Recession expanded on the EPAct05's alternative vehicle tax credit with a credit for EVs and plug-in hybrids. 26 U.S.C. § 30D. In 2022, Congress further revised the § 30D electric vehicle tax credit to focus it on onshoring EV manufacturing and battery supply chains in order to combat the dominance of Chinese manufacturing in battery supply chains. Inflation Reduction Act of 2022, Pub. L. No. 117-169, § 13401, 136 Stat. 1818, 1954-62. The American Recovery and Reinvestment Act of 2009 also significantly increased funding for the domestic manufacturing incentives and fleet purchasing program from the Energy Policy Acts and EISA. Pub. L. No. 111-5, 123 Stat. at 138, 140, 150.

In the Infrastructure, Investment, and Jobs Act of 2021 (IIJA), Pub. L. 117-58, 135 Stat. 429, Congress directed billions of dollars to support the increased adoption and American manufacture of EVs, plug-in hybrids, and other advanced clean vehicles. The IIJA created an electric vehicle working group to study "barriers and opportunities to scaling up electric vehicle adoption throughout the United States" and develop federal, state, local, and industry strategies to "overcome th[ose] barriers." Pub. L. 117-58, § 25006, 135 Stat. at 845–49. It directed $6 billion to expand domestic battery manufacturing and recycling to support EV supply chains, *id.*

§ 40207, 135 Stat. at 963–71, *codified at* 42 U.S.C. § 18741(b), (c), $1 billion to the EPAct05's clean and zero-emission school buses program, *id.* § 71101, 135 Stat. at 1321–25, *codified at* 42 U.S.C. § 16091, and a further $7.5 billion to the expansion of EV charging infrastructure across the country, 135 Stat. at 1422-25. And it imposed a mandate on public utility regulators to consider "measures to promote greater electrification of the transportation sector." Pub. L. 117-58, § 40431, 135 Stat. at 1047–49, *codified at* 16 U.S.C. § 2621(d)(21).

In the Fixing America's Surface Transportation (FAST) Act of 2015, Pub. L. No. 114-94, 129 Stat. 1312, Congress established the Low or No Emission Bus Program, a competitive grant program administered by the Federal Transit Administration for the purchase or lease of buses that emit low levels of pollutants, including greenhouse gases. *Id.* § 3017, 129 Stat. at 1482–87, *codified at* 49 U.S.C. § 5339; *see also id.* § 3008, 129 Stat. at 1465–69, *codified at* 49 U.S.C. § 5312. The program received annual appropriations of $50–$75 million per year from fiscal years 2016 through 2023. The IIJA reauthorized the program and allocated $5.6 billion over fiscal years 2022–26.

In the Inflation Reduction Act (IRA), Pub. L. No. 117-169, 136 Stat. 1818 (2022), Congress extended the American Recovery and Reinvestment Act's tax credit for "advanced energy projects," injecting an additional $10 billion to support domestic manufacturing facilities for low- or zero-emission technologies, including "light-, medium-, or heavy-duty electric or fuel cell vehicles" and heavy-duty hybrid vehicles, as well as their supply chains. *Id.* § 13501, 136 Stat. at 1969–71, *codified at* 26 U.S.C. § 48C(c)(1)(A)(i)(VII)–(VIII), (e)(2). Congress allocated an estimated $1.7 billion to support charging infrastructure by expanding and extending the Alternative Fuel Vehicle Refueling Property Credit. Pub. L. No. 117-169, § 13404, 136 Stat. at 1966–69, *codified at* 26 U.S.C. § 30C. Congress also created in the IRA the advanced manufacturing production credit, which directly supports the manufacturing of EV batteries with a $35/kWh production tax credit. Pub. L. No. 117-169, § 13502, 136 Stat. at 1971, 1973, *codified at* 26 U.S.C. § 45X(b)(1)(K).

Although Congress frequently structured these incentives to support specific clean vehicle technologies, such as plug-in electric and hybrid vehicles, Congress just as often tied the tax credit, fleet requirement, or other incentive to those vehicles' compliance with Clean Air Act emission standards, often the most advanced levels. *See, e.g.*, 26 U.S.C. § 30B(b)(3)(B), (c)(3)(A)(iv)(I), (d)(3)(A)(ii)(I) (EPAct05's alternative vehicle tax credits keyed to compliance with Bin 5 of EPA's Tier II criteria standards); 42 U.S.C. § 13212(f)(2), (3) (EISA's federal fleet requirements keyed to GHG emissions standards); 42 U.S.C. § 17013(a)(1)(B) (EISA's advanced technology vehicle manufacturing incentives, as amended by IIJA, keyed to compliance with EPA's Phase 2 GHG standards for medium- and heavy-duty vehicles). The recurring link between these research and manufacturing programs, on the one hand, and EPA's emissions standards, on the other, underscores Congress's expectation that its clean vehicles incentive programs would complement the Section 202 program's work in spurring advances in vehicle emissions technologies.

Congress's enactment of laws and appropriation of federal funds supporting clean vehicles innovation similarly underscore these technologies' importance to Congress's strategy

to maintain the U.S. auto industry's global competitiveness. Indeed, during the period when NHTSA kept average fuel-economy standards flat in an attempt to "protect" domestic automakers from compliance costs, Japan's aggressive fuel economy program produced a glut of cheap, fuel-efficient imports that out-competed U.S. models and caught domestic automakers flat-footed.[40] Congress has since made maintaining a technologically sophisticated domestic auto industry—and the conditions that preserve this advantage—an important plank in its efforts to keep American industry globally competitive. *See, e.g.*, Pub. L. No. 117-169, § 13401, 136 Stat. at 1954–62 (revising § 30D clean vehicles credit to onshore battery supply chains); Pub. L. No. 117-58, § 40207, 135 Stat. at 963–71 ($6 billion to support domestic battery supply chains); Pub. L. No. 110-140, § 136, 121 Stat. at 1514–16 (awards to retool U.S. factories to produce advanced technology vehicles). *See also* Pub. L. No. 109-58, § 1611, 119 Stat. at 1115–16, *codified at* 22 U.S.C. § 7905(a)(1) (creating export initiative to "promote the export of greenhouse gas intensity reducing technologies and practices from the United States").

D. The Federal GHG Program's Alignment with Increasing Demand for Clean Vehicles

Demand for clean vehicles, especially those equipped with zero-emission-vehicle technologies like battery-electric and plug-in hybrid vehicles, has dramatically increased in recent years. Notwithstanding Congress's repeal of certain tax credits and other incentives for zero- and low-emitting vehicles in the July 4, 2025 "megabill" (the "One Big, Beautiful Bill Act," Pub. L. No. 119-21 (OBBBA)), the evidence indicates that growth will continue and even accelerate in the coming years.

1. Consumer interest in clean vehicles continue to grow in the United States

Year after year, U.S. market penetration of zero- and low-emitting vehicles has continued to rise: in 2020, EVs made up 2.2% of the U.S. vehicle market, but that figure doubled in 2021 to 4.4%, increased to 7.6% in 2023, and increased again to 10.2% in 2024.[41] EVs also achieved the highest monthly market share on record for the United States in December 2024 at 12.3%.[42]

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[40] T. Kino, "Environmental Policy and Induced Technological Change: Evidence from Automobile Fuel Economy Regulations," *Environmental & Resource Economics* 74:785–810 (2019), https://doi.org/10.1007/s10640-019-00347-6.

[41] Alliance for Automotive Innovation, *Get Connected: Electric Vehicle Quarterly Report, Fourth Quarter, 2024* (Mar. 26, 2025), at 3; *see also* Cox Automotive, "A Record 1.2 Million EVs Were Sold in the U.S. in 2023, According to Estimates from Kelley Blue Book" (Jan. 9, 2024), https://www.coxautoinc.com/market-insights/q4-2023-ev-sales/; 88 Fed. Reg. at 29,189.

[42] Alliance for Automotive Innovation, *Electric Vehicle Quarterly Report, Fourth Quarter, 2024*, *supra* note 41, at 2.

Recent survey data shows that 60% of American consumers would consider purchasing an EV, and that interest is even higher among younger generations.[43] In January 2025, the percentage of American consumers shopping for a new vehicle who reported they are "very likely" to consider an EV reached a new high of 29%, while the percentage who said they are "very unlikely" reached a new low of 18%, continuing a decade-long trend of increasing interest in EVs, plug-in hybrid electric vehicles (PHEVs), and other clean vehicles.[44,45]

This consumer interest is reflected in recent clean vehicle sales figures. Light-duty EV sales reached a 10.9% monthly retail share in July 2025, a 1.6 percentage point increase from July 2024, and hybrids were 13.9% (up 2.9 percentage points).[46] This increase continues the highest observed EV quarterly sales on record in the United States in the last quarter of 2024 (totaling 10.9% of light duty vehicle sales across the country).[47]

U.S. automakers continue to see gains in EV sales and predict that such increases will continue. Ford achieved record EV sales in 2024, increasing by 38%, with a total of 285,291 EVs sold,[48] and Stellantis also saw sizeable gains in EV sales in 2024.[49]

Electrification of the medium- and heavy-duty vehicle market is also expected to substantially increase over the next decade. Global battery-electric truck sales have already been

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[43] Mini USA, "New Consumer Survey Reveals Majority of Americans Are Still Open to Buying Electric Vehicles Despite Changing EV Market," (Jun. 5, 2024), https://miniusanews.com/newsrelease.do?id=1443&mid=.

[44] J.D. Power, "U.S. Automotive Forecast for February 2025" (Feb. 20, 2025), https://www.jdpower.com/business/press-releases/jd-power-globaldata-forecast-february-2025.

[45] EPA, *Literature Review of U.S. Consumer Acceptance*, *supra* note 28, at 39; M. Singer, Nat'l Renewable Energy Laboratory, *The Barriers to Acceptance of Plug-in Electric Vehicles: 2017 Update* (Nov. 2017), https://doi.org/10.2172/1408997; S. Nicholson-Crotty et al., "Evolution of Plug-in Electric Vehicle Demand: Assessing Consumer Perceptions and Intent to Purchase over Time," *Transportation Research Part D: Transport and Environment* 70:94–111 (Mar. 2019), https://doi.org/10.1016/j.trd.2019.04.002.

[46] J.D. Power, "U.S. Automotive Forecast for July 2025" (Jul. 23, 2025), https://www.jdpower.com/business/press-releases/jd-power-globaldata-forecast-july-2025.

[47] Alliance for Automotive Innovation, *Electric Vehicle Quarterly Report, Fourth Quarter, 2024*, *supra* note 41, at 2.

[48] Ford Media Center, "Ford U.S. Retail Sales Grow at Double the Industry Pace in 2024, Led by Trucks, Hybrids, Electric Vehicles and Lincoln" (Jan. 3, 2025), https://media.lincoln.com/content/fordmedia/fna/us/en/news/2025/01/03/fourth-quarter-full-year-sales.html.

[49] Stellantis North America, "FCA US Reports Fourth-quarter and Full-year 2024 Sales Results" (Jan. 3, 2025), https://media.stellantisnorthamerica.com/newsrelease.do?id=26525&mid=1.

increasing in recent years—a 35% increase year-over-year was observed from 2022 to 2023, with a threefold increase coming in the United States, and an 80% increase from 2023 to 2024.[50] School districts in 54 states and U.S. territories have received funds for nearly 14,000 electric school buses, with over 5,000 already delivered in 49 states and the District of Columbia.[51] Further announcements by manufacturers and large fleet owners regarding their plans to electrify their fleets underscore that EV market share will continue to increase in the coming years.[52]

2. The number and types of clean vehicle models continue to grow

Meanwhile, automakers continue to expand the range of clean vehicle options available to American consumers. EV market coverage—i.e., the availability of EV options in different segments of the vehicle market—increased to 59% in 2024, driven by a 58% increase in "mass market EVs."[53] In the fourth quarter of 2024, 144 different EV models were sold. There were 83 different battery-electric models sold comprising 21 car models, 47 utility vehicle models, 6 pickup models, and 9 van models. Fifty-eight PHEV models were sold comprising 25 car models, 32 utility vehicle models, and 1 van model. In the fourth quarter of 2024, light trucks (utility vehicles, minivans, and pickup trucks) constituted 81% of the EV market.[54]

While more technological progress is needed to ensure zero- and low-emitting vehicles meet the needs of all drivers, most EVs produced today offer more than enough range for a great

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[50] Int'l Energy Agency (IEA), *Global EV Outlook 2025* (May 2025), at 68, https://iea.blob.core.windows.net/assets/7ea38b60-3033-42a6-9589-71134f4229f4/GlobalEVOutlook2025.pdf; IEA, *Global EV Outlook 2024* (Apr. 2024), at 62, https://iea.blob.core.windows.net/assets/a9e3544b-0b12-4e15-b407-65f5c8ce1b5f/GlobalEVOutlook2024.pdf.

[51] Electric School Bus Initiative, *Electric School Bus Data Dashboard* (data as of Aug. 2024), https://electricschoolbusinitiative.org/electric-school-bus-data-dashboard.

[52] *See, e.g.*, Daimler Truck North America, "Daimler Truck North America delivers 29 battery-electric Freightliner eCascadias to Reyes Beverage Group for California Operations" (Oct. 14, 2024), https://northamerica.daimlertruck.com/news-stories/2024/daimler-truck-north-america-delivers-29-battery-electric-freightliner-ecascadias-to-reyes-beverage-group-for-california-operations; Renewable Energy Magazine, "New Fleet of 100% Electric FedEx Trucks Comes to Northern California" (May 6, 2025), https://www.renewableenergymagazine.com/electric_hybrid_vehicles/new-fleet-of-100-electric-fedex-trucks-20250506.

[53] J.D. Power, "U.S. Automotive Forecast for January 2025" (Jan. 23, 2025), https://www.jdpower.com/business/press-releases/jd-power-globaldata-forecast-january-2025.

[54] Alliance for Automotive Innovation, *Electric Vehicle Quarterly Report, Fourth Quarter, 2024*, *supra* note 41, at 6.

majority of Americans.[55] Most consumers drive less than 75 miles per day, and while the average range for an EV is nearly 300 miles per full charge, there are currently over 50 battery-electric vehicles on the market with a range over 300 miles.[56,57,58] Recent studies have shown that, if current projections for technology development hold, when vehicles are offered with both gasoline and battery-electric powertrain options, by 2030 more than half of consumers would choose a battery-electric vehicle even without EV purchase incentives.[59] The study found that consumers value battery-electric vehicles with a range of 300 miles equivalent to or more than their gas-fueled counterparts.[60]

Over the next several years, automakers plan to release for sale in the U.S. a host of new EV models covering a wide scope of mass market vehicle types including sedans, hatchbacks, compacts, sport utility vehicles, pickup trucks, and sportscars.[61] The new EV offerings will include an increasing number of affordable options expected to be priced in the $20,000 to $40,000 range.[62] These EVs will include improvements to battery range, acceleration, and other

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[55] *See* Christopher Mims, "I Drove an EV Deep Into the Wilderness. I Never Feared Running Out of Juice." *Wall Street Journal* (Aug. 22, 2025), https://www.wsj.com/business/autos/electric-vehicle-rivian-charging-infrastructure-b90be73a?st=vXSRon&reflink=desktopwebshare_permalink

[56] Mini USA, "New Consumer Survey," *supra* note 43.

[57] U.S. Dept. of Energy, Vehicles Tech. Off., "FOTW #1375, December 30, 2024: Median EV Range in Model Year 2024 Reached a Record High of 283 Miles per Charge" (Dec. 30, 2024), https://www.energy.gov/eere/vehicles/articles/fotw-1375-december-30-2024-median-ev-range-model-year-2024-reached-record.

[58] Jonathan Elfalan, "Edmunds Tested: Electric Car Range and Consumption," *Edmunds* (Jul. 10, 2025), https://www.edmunds.com/car-news/electric-car-range-and-consumption-epa-vs-edmunds.html.

[59] C. Forsythe et al., "Technology advancement is driving electric vehicle adoption," *PNAS* 120:23 (Apr. 2023), at 1, 6, https://www.pnas.org/doi/epdf/10.1073/pnas.2219396120.

[60] *Id.* at 6.

[61] Caleb Miller, "Future Electric Vehicles: The EVs You'll Soon Be Able to Buy," *Car and Driver* (Feb. 14, 2025), https://www.caranddriver.com/news/g29994375/future-electric-cars-trucks/; Ford, "Q4 & Full Year 2024 Earnings Presentation" (2025), https://ford2022rd.q4web.com/files/doc_financials/2024/q4/Ford-Q4-2024-Earnings-Presentation.pdf (Ford E-Transit van accounted for 9% of transit sales in Q4 2024).

[62] Caleb Miller, "Future Electric Vehicles," *supra* note 61; Car and Driver, "Cheapest Electric Vehicles," https://www.caranddriver.com/rankings/best-electric-cars/cheapest; Rob Wile, "Bezos-backed Slate Auto unveils affordable EV truck," *NBC News* (Apr. 25, 2025), https://www.nbcnews.com/business/autos/bezos-backed-slate-auto-unveils-affordable-ev-truck-rcna203014; Michael Wayland, "Stellantis CEO says $25,000 Jeep EV coming to the U.S. 'very soon,'" *CNBC* (May 29, 2024), https://www.cnbc.com/2024/05/29/stellantis-affordable-jeep-ev.html.

performance metrics that consumers value.[63] As discussed above, regulatory incentives like the federal GHG program are important to spur automakers to improve these future offerings' affordability and performance.

3. Zero- and low-emitting vehicles are becoming less expensive than combustion-engine vehicles

One of the primary drivers of increased consumer enthusiasm for clean vehicles is that the total cost of ownership (which takes into account fuel and maintenance costs) of an EV is on average lower than that of a combustion-engine vehicle. EVs generally have fewer moving parts than their gas or diesel counterparts, which typically results in reduced costs for maintenance and repair due to having fewer serviceable parts and potential failures.[64] Accordingly, the average EV owner spends 60% less to power their vehicle over its lifetime.[65] As the differential in up-front purchase costs continues to drop—as of December 2024, a new EV was still, on average, priced about $6,000 higher than a gas-fueled vehicle—purchase price parity is likely to begin occurring by the mid- to late-2020s for many vehicle segments and models. *See* 89 Fed. Reg. at 27,899. Specifically, an ICCT analysis from 2019 projected that the total cost of ownership for certain heavy-duty EVs could reach cost parity with comparable diesel vehicles in the early 2020s, while battery-electric and fuel-cell tractor-trailers are likely to reach cost parity with comparable diesel vehicles by approximately 2030.[66] Findings from Phadke et al. suggest that heavy-duty EV total cost of ownership could be 13% less than that of a comparable diesel vehicle if electricity pricing is optimized.[67] These studies predated, and thus did not consider, the effects of the Inflation Reduction Act tax credits and incentive programs.[68] The growing second-hand market for light-duty EVs will also improve affordability.

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[63] Caleb Miller, "Future Electric Vehicles," *supra* note 61.

[64] CARB, *Advanced Clean Fleets Regulation, Appendix G: Total Cost of Ownership* (Aug. 30, 2022), at § 4, G21–G23, https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/appg.pdf.

[65] Steve Patton, "EV price parity with gas vehicles may be closer than we think," *Fortune* (Oct. 2, 2024), https://fortune.com/2024/09/13/ev-price-parity-gas-vehicles-automotive-trends/.

[66] D. Hall & N. Lutsey, ICCT, *Estimating the infrastructure needs and costs for the launch of zero-emissions trucks* (Aug. 9, 2019), at 19–23, https://theicct.org/publications/zero-emission-truck-infrastructure.

[67] A. Phadke et. al., Lawrence Berkeley Nat'l Laboratory,*Why Regional and Long-Haul Trucks are Primed for Electrification Now* (Mar. 2021), at 3, https://eta-publications.lbl.gov/sites/default/files/updated_5_final_ehdv_report_033121.pdf.

[68] *See also* H. Kaur et al., ICCT, *Total cost of ownership parity between battery-electric trucks and diesel trucks in India* (Aug. 2024), at ii, https://theicct.org/publication/tco-bet-hdde-india-aug24/ (finding total cost of ownership parity will be reached in India by 2030 for classes of trucks used in the country).

The declining overall price of EVs is being driven in large part by decreasing battery prices. This downward trend in battery prices is, in turn, being caused by increased investment in domestic battery manufacturing capacity. These investments are discussed in additional detail below—the upshot, though, is that additional battery manufacturing capacity in the United States is expected to drive down battery prices even further, putting the cost of EV ownership in line with the price of owning a combustion-engine vehicle on an unsubsidized basis by 2026.[69]

EVs and other clean vehicles generally enjoy lower fueling and maintenance costs, reducing the total cost of ownership. Even without any federal or state EV incentives, the owner of an EV generally saves $6,600 to $11,000 relative to its combustion-engine counterpart over a six-year ownership period, across all vehicle types.[70] For light-duty vehicles, EVs are cheaper to fuel than gas-powered vehicles for every state and every passenger vehicle class—even in regions with lower gas prices or higher electricity rates.[71] Heavy-duty vehicle data similarly show greater energy efficiency of battery-electric and fuel cell technology relative to combustion-engine technologies, which leads to lower fuel costs.[72] Maintenance and service costs are also significantly lower for zero- and low-emitting vehicles across classes. *See* 89 Fed. Reg. at 27,859–60 (Table 8) ($10–16 billion in annualized maintenance and repair savings from MY2027–32 light- and medium-duty standards); 89 Fed. Reg. at 29,659, 29,716.

4. Global demand for clean vehicles is skyrocketing

Global demand for EVs continues to increase at a rapid pace, presenting an opportunity for domestic manufacturers to plug into a widening consumer base.[73] Electric vehicles accounted

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[69] Goldman Sachs, "Electric vehicle battery prices are expected to fall almost 50% by 2026" (Oct. 7, 2024), https://www.goldmansachs.com/insights/articles/electric-vehicle-battery-prices-are-expected-to-fall-almost-50-percent-by-2025.

[70] A. Isenstadt & K. Pennington, ICCT, *Tax Credits or No Tax Credits, EV Costs Are Projected to Keep Dropping* (Jul. 30, 2025), https://theicct.org/tax-credits-or-no-tax-credits-ev-costs-are-projected-to-keep-dropping-jul25/.

[71] S. Baldwin & J. Conness, Energy Innovation Policy & Technology, *Comparing the Cost to Travel: Electric Vehicle Fill-Up Savings by State* (Aug. 2023), at 1, https://energyinnovation.org/wp-content/uploads/EV-Fill-Up-Savings-by-State-2.pdf.

[72] North American Council for Freight Efficiency, *Guidance Report: Viable Class 7/8 Electric, Hybrid and Alternative Fuel Tractors* (2019), at 57, https://nacfe.org/wp-content/uploads/2024/05/Viable-Class-7-8-Alternative-Vehicles-Final-12-10-_compressed.pdf; S. Nadel & E. Junga, Amer. Council for an Energy-Efficient Economy, *Electrifying Trucks: From Delivery Vans to Buses to 18-Wheelers* (Jan. 2020), at 3–4, https://www.mobilitafutura.eu/wp-content/uploads/2022/06/electric_trucks_1.pdf.

[73] Chris Marquette & Alex Guillen, "Auto experts doubt Duffy's CAFE standards review will lower prices," *E&E News* (Jan. 30, 2025), https://www.eenews.net/articles/auto-experts-doubt-duffys-cafe-standards-review-will-lower-prices/; Camila Domonoske, "Trump's pulling a U-turn on EVs, but not much has changed — yet," *NPR* (Jan. 30, 2025), https://www.npr.org/2025/01/30/nx-s1-5272749/donald-trump-ev-electric-vehicles-subsidies-auto-industry.

for approximately 20% of all cars sold globally in 2024, continuing the upward trend from 18% in 2023 and 14% in 2022.[74] The Chinese manufacturer BYD sold 4.27 million EVs and plug-in hybrids in 2024, a 41% increase over its 2023 sales.[75] EV sales are on track to account for over a quarter of all cars sold globally in 2025 and to reach over 40% by 2030.[76] In China, EV sales accounted for almost half of all sales in 2024,[77] and electric heavy trucks have experienced a similar boom.[78] EV sales continue to grow across the globe, including in markets outside the major EV markets.[79]

Concurrent with rising consumer demand, major global markets—including China, the European Union, and Canada—have enacted phase-outs of combustion-engine vehicles by 2035 or earlier.[80] That means U.S. automakers will have to become global leaders in zero-emission technologies in the next ten years or lose some of their largest markets.[81] As discussed *supra* Part

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[74] IEA, *Global EV Outlook 2024*, *supra* note 50, at 17; IEA, "More than 1 in 4 cars sold worldwide this year is set to be electric as EV sales continue to grow" (May 14, 2025), https://www.iea.org/news/more-than-1-in-4-cars-sold-worldwide-this-year-is-set-to-be-electric-as-ev-sales-continue-to-grow.

[75] Indrabati Lahiri, "Chinese EV giant BYD beats domestic layers to hit record 2024 sales," *Euro News* (Mar. 1, 2025), https://www.euronews.com/business/2025/01/03/chinese-ev-giant-byd-beats-domestic-players-to-hit-record-2024-sales.

[76] IEA, "More than 1 in 4 cars sold electric," *supra* note 74; *see also* L. Fisher et al., McKinsey & Co., *Exploring consumer sentiment on electric-vehicle charging*, (Jan. 9, 2024), https://www.mckinsey.com/features/mckinsey-center-for-future-mobility/our-insights/exploring-consumer-sentiment-on-electric-vehicle-charging.

[77] IEA, "More than 1 in 4 cars sold electric," *supra* note 74.

[78] *See, e.g.*, Sam Li & Lewis Jackson, "Soaring electric truck sales deal new blow to diesel use in China," *Reuters* (Jul. 10, 2025), https://www.reuters.com/sustainability/climate-energy/soaring-electric-truck-sales-deal-new-blow-diesel-use-china-2025-07-11/.

[79] IEA, *Global EV Outlook 2024*, *supra* note 50, at 26–29.

[80] EU Directorate-General for Climate Action, "Fit for 55: EU reaches new milestone to make all new cars and vans zero-emission from 2035" (Mar. 28, 2023), https://climate.ec.europa.eu/news-your-voice/news/fit-55-eu-reaches-new-milestone-make-all-new-cars-and-vans-zero-emission-2035-2023-03-28_en; Transport Canada, "Building a green economy: Government of Canada to require 100% of car and passenger truck sales be zero-emission by 2035 in Canada" (Jun. 29, 2021), https://www.canada.ca/en/transport-canada/news/2021/06/building-a-green-economy-government-of-canada-to-require-100-of-car-and-passenger-truck-sales-be-zero-emission-by-2035-in-canada.html; Sean Fleming, World Economic Forum, "China joins list of nations banning the sale of old-style fossil-fuelled vehicles" (Nov. 11, 2020), https://www.weforum.org/stories/2020/11/china-bans-fossil-fuel-vehicles-electric/.

[81] For example, China was General Motors' top sales market from 2010 to 2023, but GM's market share collapsed as Chinese firms out-competed on battery-electric vehicles and plug-in hybrids. *See* Keith

II.A.4, production experience, supported by stable and stringent GHG emission standards, is the most effective way to ensure these iconic U.S. industries remain globally viable.

E. The Federal GHG Program's Alignment with Investments in Zero-Emission Transportation

1. States, local governments, and private companies are expanding zero-emission charging and fueling infrastructure

Public and private actors are working in concert to develop a robust network of electric vehicle supply equipment (EVSE), especially EV charging infrastructure, to support anticipated levels of electric vehicle adoption. Private entities, including Ionna (a joint venture consisting of seven of the world's largest automakers), Electrify America, Francis Energy, Wallbox N.V., Blink, and EVgo have recently added a number of light-duty charging locations to their national networks, and announced that additional stations are on the way. Below are just a few examples:

- In 2024, Electrify America opened its 1,000th charging station in North America and grew its network of DC fast chargers to 4,800.[82]
- EVGo more than doubled the number of stalls served by 350 kW "fast-charging" chargers in 2024, and also increased the sites capable of serving at least six vehicles by 80% compared to the prior year.[83]
- Pilot, in collaboration with GM and EVgo, has expanded its charging network to more than 130 locations in more than 25 states, and since the start of 2025, Pilot has installed 12 new fast charging locations across ten states.[84,85]

Bradsher, "G.M. Led in Chian for Years. Here's How It Ended Up 16th in Sales," *N.Y. Times* (Dec. 19, 2024), https://www.nytimes.com/2024/12/19/business/gm-china.html ("G.M. has not competed effectively in battery electric vehicles and plug-in hybrid cars. These models together accounted for 52.3 percent of the Chinese market in November [2024] … [but] less than 20 percent of G.M. sales this year – while its sales of gasoline-powered cars have halved."); Michael Wayland, "U.S. automakers like GM are rapidly losing ground in China, once an engine for growth," *CNBC* (May 6, 2024), https://www.cnbc.com/2024/05/06/us-automakers-like-gm-rapidly-lose-ground-in-china.html.

[82] Electrify America, "Press Kit: Fast Facts" (updated July 2025), https://media.electrifyamerica.com/press-kits/fast-facts; Patrick George, "Electrify America's 2024 Stats Reveal How The EV Market Is Blowing Up," *Inside EVs* (Mar. 5, 2025), https://insideevs.com/news/752565/electrify-america-2024-charging-sessions/.

[83] EVgo, "EVgo Announces Major Network Enhancements Across Nationwide Fast Charging Network" (Aug. 14, 2024), https://www.evgo.com/press-release/evgo-announces-major-network-enhancements-across-nationwide-fast-charging-network/.

- In May 2024, WattEV opened its fourth heavy-duty electric truck charging depot. This Bakerfield, California site features sixteen 360 kW chargers, fifteen 240 kW chargers, and three 1,200 kW rapid chargers that can deliver 300 miles of charge in under 30 minutes, integrated with a solar power and battery storage microgrid.[86]
- In January 2025, Forum Mobility opened the then-largest port-based charging depot in the U.S., capable of simultaneously charging 44 trucks and a total 200 trucks per day.[87]
- TeraWatt Infrastructure's first medium- and heavy-duty electric charging truck stop in California came online in April 2025; located 12 miles north of the ports of Long Beach and Los Angeles, the site will support electric trucking fleet operations in and out of the largest container ports in the United States.[88]
- The Port of Oakland's NorCal ZERO project will provide hydrogen fueling to a pilot fleet of 30 Hyundai Class 8 fuel cell electric trucks, capable of supporting 200 trucks per day.[89]

The above covers only public charging, but a large majority 83% of EV owners in the U.S. have access to home charging.[90] In addition, major business chains have installed thousands of chargers for corporate fleets, employees, and customers.[91]

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[84] Chuck Ulie, "Pilot Continues Momentum With New Flagship, More Store Upgrades, EV Charging Growth," *CSP* (Apr. 3, 2025), https://www.cspdailynews.com/company-news/pilot-continues-momentum-new-flagship-more-store-upgrades-ev-charging-growth.

[85] Scooter Doll, "GM, Pilot, and EVgo share progress updates, installing EV fast chargers across 25+ states," *Electrek* (Mar. 25, 2025), https://electrek.co/2025/03/25/gm-pilot-evgo-progress-updates-installing-ev-fast-chargers-25-states/.

[86] WattEV, "WattEV opens world's largest solar-powered truck charging depot boasting megawatt charging, fourth station to open in one year" (May 6, 2024), https://wattev.com/wattev-opens-worlds-largest-solar-powered-truck-charging-depot-boasting-megawatt-charging-fourth-station-to-open-in-one-year/.

[87] Forum Mobility, "Forum Mobility Hosts Ribbon Cutting Ceremony for FM Harbor Electric Truck Charging Depot at the Port of Long Beach," *PR Newswire* (Jan. 23, 2025), https://www.prnewswire.com/news-releases/forum-mobility-hosts-ribbon-cutting-ceremony-for-fm-harbor-electric-truck-charging-depot-at-the-port-of-long-beach-302358937.html.

[88] Michelle Lewis, "Terawatt opens its first electric charging truck stop in California," *Electrek* (Apr. 17, 2025), https://electrek.co/2025/04/17/terawatt-first-electric-charging-truck-stop-california/.

[89] Port of Oakland, "Port of Oakland celebrates hydrogen-powered trucks project" (May 2, 2024), https://www.portofoakland.com/port-of-oakland-celebrates-hydrogen-powered-trucks-project.

[90] IEA, *Global EV Outlook 2025*, *supra* note 50, at 68.

[91] *See, e.g.*, Tom Moloughney, "Walmart Opens Up About Its EV Charging Network: Charge Better," *Inside EVs* (Apr. 24, 2025), https://insideevs.com/news/757648/walmart-ev-charging-network-

States, local governments (including school districts), and public utilities have also continued to make substantial progress in building out their EV charging infrastructure. By the end of 2024, the California Public Utilities Commission had approved over $738 million in spending on infrastructure to support medium- and heavy-duty electric charging infrastructure, and over $152 million had been spent.[92] As of February 2025, the California Energy Commission reported that the State had over 178,000 total public and shared private EV chargers available for use, including 15,639 public DC fast chargers.[93] According to a U.S. Department of Energy report, Connecticut, New York, Utah, Delaware, and North Carolina expanded the number of available EV charging ports per 100 EVs by 40.2%, 15.4%, 13.2%, 13.1%, and 10.2%, respectively, in the second quarter of 2024.[94] These states represent the highest rate of growth, but public EV charging ports grew across the country by 6.5% in the second quarter of 2024.[95] As of April 2025, the New York Power Authority had surpassed the halfway mark of its goal to install 400 Evolve NY fast chargers by 2026.[96] New York as a whole had more than 21,200 public charging ports and 4,900 public charging stations, including over 5,800 DC fast charging ports.[97]

On top of that, States have continued to build on the early success of the National Electric Vehicle Infrastructure (NEVI) Formula Program. Created in the Infrastructure Investment and Jobs Act, the NEVI Formula Program appropriates $5 billion over fiscal years 2022 to 2026 to fund the construction of a nationwide network of EV charging infrastructure that improves the reliability and accessibility of electric vehicles. Pub. L. No. 117-58, 135 Stat. at 1421. The NEVI

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revealed/ (Walmart plans to roll out 400 kW fast EV chargers at "thousands" of its locations by 2030).

[92] Cal. Pub. Utils. Comm'n, "Charging Infrastructure Deployment and Incentives" (data as of Dec. 2024), https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/infrastructure/transportation-electrification/charging-infrastructure-deployment-and-incentives.

[93] Cal. Energy Comm'n, "Electric Vehicle Chargers in California" (last updated Mar. 7, 2025) https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics-collection/electric.

[94] A. Brown et al., Nat'l Renewable Energy Laboratory, *Electric Vehicle Charging Infrastructure Trends from the Alternative Fueling Station Locator: Second Quarter 2024* (Nov. 2024), at 17–18, https://afdc.energy.gov/files/u/publication/electric_vehicle_charging_infrastructure_trends_second_quarter_2024.pdf.

[95] *Id.*

[96] Gov. Kathy Hochul, New York State, "Governor Hochul Announces an Additional $30 Million is Now Available to Lease or Purchase an Electric Vehicle in New York" (Apr. 18, 2025), https://www.governor.ny.gov/news/governor-hochul-announces-additional-30-million-now-available-lease-or-purchase-electric.

[97] Mohit Mendiratta, Atlas Public Policy, "EValuate NY: Charging" (2025), https://atlaspolicy.com/evaluateny/.

Formula Program requires States that wish to participate in the program to create EV infrastructure deployment plans for each fiscal year of funding. To date, all States submitted EV infrastructure deployment plans and plan updates for fiscal years 2022 to 2025. These plans were reviewed and certified by the Federal Highway Administration, unlocking a total $3.27 billion of the NEVI Formula Program funding.[98] According to the National Association of State Energy Officials, currently, thirty-eight states have issued awards under the NEVI funding program and sixteen states (Colorado, Hawai'i, Kansas, Kentucky, Maine, Michigan, New Mexico, New York, Ohio, Pennsylvania, Rhode Island, Utah, Virginia, Wisconsin, Texas, and Vermont) have at least one operational NEVI-funded charging station.[99] All States increased their designated electric vehicle Alternative Fuel Corridors to total more than 81,000 miles.[100]

2. Governments and utilities are investing in a resilient electric grid

Federal and State governments and electric utilities are also ensuring that the electrical grid remains resilient as EV adoption continues to increase. It is already estimated that the nation's electric grid has sufficient capacity to produce the power necessary to meet EV demand as it increases. A recent Princeton University projection shows that, in the seven years leading up to 2022, the grid added six times the capacity that all EVs will need by 2030, and nearly 3.5 times the capacity they will require by 2035, if just a modest amount of smart-charging capabilities are incorporated. Moving forward, this estimate is likely to be conservative, because the United States is adding generation at a much faster pace than it previously did. The United States is poised to add 17 GW of battery-storage alone (which can be drawn down to meet peak demand) by August 2025. In addition, investment in managed EV charging programs, which take advantage of EVs' inherent charging flexibility, can provide additional savings in avoided power infrastructure investment. *See infra* Part IV.B.6.a.

As far as transmission capacity goes, electric grids across the United States expect to add/gain nearly 28,000 miles of new transmission capacity in the next ten years.[101] The U.S.

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[98] U.S. Dept. of Transp., Federal Highway Administration Fiscal Mgmt. Info. Sys., "NEVI Formula Program Status of Funds" (Feb. 6, 2025). A portion of this $3.27 billion became briefly unavailable due to the administration's freeze of NEVI funds, subsequently enjoined by a federal district court. ECF No. 110, *Washington v. U.S. Dept. of Transp.*, Case No. 2:25-cv-00848-TL (W.D. Wash. Jun. 24, 2025).

[99] National Association of State Energy Officials, *National Electric Vehicle Infrastructure (NEVI) Awards Dashboard,* https://evstates.org/awards-dashboard/.

[100] U.S. Joint Office of Energy & Transp., *National Electric Vehicle Infrastructure Formula Program: Annual Report: Plan Year 2023-2024*, DOE/EE-2972 (Aug. 2024), at 20, https://driveelectric.gov/files/nevi-annual-report-2023-2024.pdf (NEVI Annual Report 2024).

[101] American Society of Civil Engineers Committee on America's Infrastructure, *2025 Report Card for America's Infrastructure* (2025), at 75, https://infrastructurereportcard.org/wp-content/uploads/2025/03/Energy.pdf

Department of Energy has conducted rulemakings to reduce permitting time for transmission, and to carve out exceptions from NEPA for some transmission projects.[102] FERC has also put in place Order No. 1920 (as amended), which requires independent systems operators to engage in long-term planning that helps utilities more efficiently site and construct transmission and generation.[103] The existing stock of transmission capacity and future trends have led researchers to determine that "existing bulk generation and transmission systems should be sufficient to accommodate growing EV charging loads."[104] Only modest upgrades to distribution infrastructure may be needed, and the literature indicates that retail electricity prices could even decline with the widespread adoption of EVs.[105,106]

3. Domestic battery production is rapidly expanding

Recent investments by the Federal and State governments have led to a boom in domestic battery manufacturing capacity. As discussed above, the IIJA provided $7.9 billion for battery manufacturing, battery recycling, and critical minerals production.[107] Recipients of $2.8 billion of IIJA funding matched the federal investment, leveraging this portion of the funding to a total of $9 billion to expand domestic production of critical minerals and manufacturing of batteries for electric vehicles.[108] California has offered $25 million in grant funds for projects that will promote in-state battery manufacturing for zero-emission vehicles.[109] And New York has

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[102] Rachel Levine & Swad Sathe, Niskanen Center, "What's next? Breakthroughs and roadblocks in electric transmission regulation" (Feb 14, 2025), https://www.niskanencenter.org/whats-next-breakthroughs-and-roadblocks-in-electric-transmission-regulation/.

[103] *Id.*

[104] N. Panossian et al., "Challenges and Opportunities of Integrating Electric Vehicles in Electricity Distribution Systems," *Current Sustainable/Renewable Energy Reports* 9:2 (2022), at 27–40, https://www.proquest.com/docview/2673032721.

[105] Y. Li & A. Jenn, "Impact of electric vehicle charging demand on power distribution grid congestion," *PNAS* (Apr. 22, 2024), at 1, https://www.pnas.org/doi/abs/10.1073/pnas.2317599121.

[106] M. Wolinetz et al., "Simulating the value of electric-vehicle–grid integration using a behaviourally realistic model," *Nature Energy* 3:2 (2018), at 132–139, https://doi.org/10.1038/s41560-017-0077-9.

[107] Cong. Rsch. Serv., *Energy and Minerals Provision in the Infrastructure Investment and Jobs Act (P.L. 117-58)*, R47034 (Mar. 31, 2023), https://crsreports.congress.gov/product/pdf/R/R47034.

[108] White House, "FACT SHEET: Biden-Harris Administration Driving U.S. Battery Manufacturing and Good-Paying Jobs" (Oct. 19, 2022), https://bidenwhitehouse.archives.gov/briefing-room/statements-releases/2022/10/19/fact-sheet-biden-harris-administration-driving-u-s-battery-manufacturing-and-good-paying-jobs/.

[109] Cal. Grants Portal, *GFO-21-606 - Zero-Emission Vehicle Battery Manufacturing Block Grant*, https://www.grants.ca.gov/grants/gfo-21-606-zero-emission-vehicle-battery-manufacturing-block-grant/.

invested more than $50 million to support the creation of Battery-NY, a technology development, manufacturing, and commercialization center in upstate New York.[110]

Those investments have led the number of battery production plants in the United States to increase from just two in 2019 to 34 either planned, under construction, or in operation.[111] One study projects at least 45 GWh of announced cell production will be dedicated to heavy-duty EVs by 2030. 89 Fed. Reg. at 29,504. Battery costs are also anticipated to decrease because of Inflation Reduction Act incentives, including manufacturer production tax incentives of $35 per kWh for U.S. production of battery cells, $10 per kWh for U.S. production of modules, and 10% of production cost for U.S.-made critical minerals and electrode active materials. 89 Fed. Reg. at 27,852. (Congress did not sunset this IRA tax credit in the OBBBA.) As noted above, this rapid buildout of domestic battery manufacturing capacity is expected to continue driving down EV prices across the board while also creating jobs for the States and Local Governments' residents. *See infra* Parts III.B.2.a, IV.B.6.c.

4. Investments in critical minerals access is rapidly expanding

The manufacture of EVs requires access to a key set of critical minerals: lithium, cobalt, nickel, manganese, and graphite. As EPA found last year, the availability of these minerals is not expected to pose a barrier to automakers' ability to meet existing vehicle emission standards, 89 Fed. Reg. at 28,053, and it has not proposed to find otherwise in these proceedings. On a global scale, EPA found "an accounting of known mineral reserves in democratic countries across the world indicates that they surpass projected global needs through 2030 for the five minerals assessed by ANL [the Argonne National Laboratory], under a demand scenario that limits global temperature rise to 1.5 °C." *Id.* at 28,045.

With regard to lithium, the Argonne National Laboratory's analysis indicates "that from 2025 to 2035, the currently identified capacity for lithium . . . in the U.S. and FTA and MSP countries [i.e., countries with which the U.S. has a free trade agreement and/or a mineral security partnership] is significantly greater than U.S. demand under both low and high domestic demand scenarios." *Id.*[112] Increased discovery, development, and production of new domestic lithium reserves in the United States has positioned the nation to become a key global producer of

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[110] Gov. Kathy Hochul, New York State, "Governor Hochul Announces Nearly $114 Million in Federal and State Funding to Create First-In-Class Battery-NY Center at Binghamton University" (Sep. 2, 2022), https://www.governor.ny.gov/news/governor-hochul-announces-nearly-114-million-federal-and-state-funding-create-first-class.

[111] Rebecca Bellan, "Tracking the EV battery factory construction boom across North America," *TechCrunch* (Feb. 6, 2025), https://techcrunch.com/2025/02/06/tracking-the-ev-battery-factory-construction-boom-across-north-america/.

[112] The light-duty standards adopted in the 2024 Multipollutant Rule "align closely" with Argonne National Laboratory's "low demand" scenario. 89 Fed. Reg. at 28,044.

lithium, and has led lithium prices to decline from their 2022 highs to stabilize at pre-2020 levels. *Id.*[113] Significant lithium deposits in Nevada, California, and other states, have attracted development interest from suppliers and automakers. 89 Fed. Reg. at 28,051–52, 28,052 (Table 74). The Thacker Pass project—located in the McDermitt Caldera—recently obtained sufficient funding for its first phase of development, thanks in part to a $2.26 billion loan from the Department of Energy and additional funding from General Motors and other sources.[114] Once construction of the initial phase is complete by late 2027, Thacker Pass is expected to single-handedly produce eight times the current total U.S. output of lithium carbonate. The domestic lithium supply is projected to balloon from 50,000 tons in 2025 to nearly 450,000 tons in 2030, 89 Fed. Reg. at 28,052 (Figure 42), and this projection is likely to be conservative.

The Argonne National Laboratory's February 2024 forecast indicates that domestic and FTA supply of cobalt and nickel will be more than sufficient to allow automakers to comply with the standards should they follow a compliance path that requires increased deployment of EVs. *Id*. at 28,044–45, 28,045 (Figure 39). EPA also cited a Bloomberg NEF projection "that, globally, cobalt and nickel reserves 'are now enough to supply both our Economic Transition and Net Zero scenarios,' the latter of which is an aggressive global decarbonization scenario." *Id.* at 28,048. Nor is manganese availability likely to pose a barrier to EV adoption. Manganese supply is concentrated among a few FTA and MSP trade partners, including Australia, Canada, and India, and the supply is estimated to be "quite substantial" and "likely to be sufficient to meet U.S. demand in both near and medium term." *Id.* at 28,053.

Graphite is currently the critical mineral most exposed to potential need for supply from non-FTA, non-MSP countries, but even it is not likely to impair the ability of automakers to comply with existing federal vehicle standards. EPA found that multiple viable "alternatives to imported graphite exist, and are poised to become increasingly important" in the near future, including synthetic graphite and silicone. *Id.* at 28,045. Indeed, two U.S. companies are preparing to bring to scale coal pyrolysis—a non-emitting process for synthesizing graphite from coal, with green hydrogen as a byproduct—in the coming years. The battery materials company NOVONIX will open a pyrolysis facility in Chattanooga, Tennessee and expects to produce 31,500 tonnes per annum (tpa) in addition to their existing Riverside, California facility, which is scaling up to 20,000 tpa.[115] Omnis Energy recently purchased the Pleasants Power Station in

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[113] *See also* Eric Onstad, "Lithium supply surplus set to stay with battery makers' help," *Reuters* (Dec. 9, 2024), https://www.reuters.com/markets/commodities/lithium-supply-surplus-set-stay-with-battery-makers-help-2024-12-10/.

[114] Angela Shah, "Nevada Lithium Mine Secures Funding to Begin Construction," *Engineering News-record* (Apr. 2, 2025), https://www.enr.com/articles/60534-nevada-lithium-mine-secures-funding-to-begin-construction.

[115] NOVONIX, "NOVONIX Finalizes Purchase and Sale Agreement for Enterprise South Land" (Apr. 29, 2025), https://ir.novonixgroup.com/news-releases/news-release-details/novonix-finalizes-purchase-and-sale-agreement-enterprise-south.

Willow Island, West Virginia, and anticipates a production output of 3.4–4 million tpa at 99.9% purity.[116] Both facilities expect their facilities to support around 500 jobs in these energy industry communities.[117,118] Additionally, EPA concluded "supply sources of natural graphite are expected to become more diverse over time with new and planned capacity in FTA countries (Canada and Australia) and in other economic allies (Tanzania and Mozambique), and others supported by the MSP." 89 Fed. Reg. at 28,046.

In addition to these critical minerals, certain rare earth metals, like dysprosium and neodymium, are used in permanent magnet electric motors found in EVs. Based on the stable price for the specific metals used in magnets, shortages or high prices of such metals are unlikely and the supply of these metals will likely not prevent compliance with current vehicle standards. *Id.* at 28,053. In January 2025, MP Materials announced that it began commercial production of neodymium-praseodymium metal and trial production of automotive-grade neodymium-iron-boron magnets at its rare earth magnet manufacturing facility in Fort Worth, Texas.[119] The facility will supply rare earth magnets to General Motors as part of a long-term agreement.[120]

A growing mineral recycling sector is expected to further increase availability of these minerals and metals. A growing number of private companies are entering the battery recycling market, and manufacturers are already reaching agreements to use these recycled materials for domestic battery manufacturing. 89 Fed. Reg. at 28,056. Panasonic, for instance, has entered into an agreement with Redwood Materials to supply domestically processed cathode material, much which will be sourced from recycled batteries. *Id.* Ford and Volvo have similarly formed a partnership with Redwood Materials to collect end-of-life batteries for recycling. *Id.* Redwood Materials has announced additional partnerships, including one with BMW of North America to recycle lithium-ion batteries.[121] It is also partnering with Toyota, which is using recycled

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[116] Omnis Energy, *Re-Inventing Pleasants Power Station: Running on Quantum H2* (Nov. 7, 2024), https://www.appahydrogencarbon.com/wp-content/uploads/2024/11/2024.11.11_Omnis-Energy-Presentation_Nov7_rvsd.pdf.

[117] "Omnis Energy Marks Early Success With Clean Electricity Demonstration That Records Several World Firsts," *The St. Marys Oracle* (Aug. 14, 2024), https://omnisenergy.com/wp-content/uploads/2024/08/2024.08.14_St.-Marys-Oracle_Omnis-Demonstration-Local-Coverage.pdf.

[118] NOVONIX, "NOVONIX Finalizes Purchase and Sale Agreement," *supra* note 115.

[119] MP Materials, "MP Materials Restores U.S. Rare Earth Magnet Production," (Jan. 22, 2025), https://investors.mpmaterials.com/investor-news/news-details/2025/MP-Materials-Restores-U.S.-Rare-Earth-Magnet-Production/default.aspx.

[120] MP Materials, "MP Materials to Build U.S. Magnet Factory, Enters Long-Term Supply Agreement with General Motors" (Dec. 9, 2021), https://mpmaterials.com/news/mp-materials-to-build-us-magnet-factory-enters-long-term-supply-agreement-with-general-motors/.

[121] Redwood Materials, "BMW of North America and Redwood partner to recycle lithium-ion batteries," https://www.redwoodmaterials.com/news/bmw-and-redwood-partner-to-recycle-lithium-ion-batteries/.

materials in its new battery factory in Greensboro, North Carolina, starting production this year.[122] Notably, Redwood Materials recycled enough batteries in 2024 to supply about 250,000 electric vehicles.[123] Other companies such as Cirba Solutions, Blue Whale Materials, and Ascend Elements are building recycling facilities throughout the country and looking to join Redwood Materials and Li-Cycle in the recycling market.[124] General Motors and Noveon Magnetics have entered a multi-year deal for Noveon to supply rare earth magnets from recycled materials for use in GM sports utility vehicles and trucks.[125]

III. EPA'S PRIMARY BASIS FOR REPEALING THE FEDERAL GHG PROGRAM IS UNLAWFUL

The Proposal's primary basis for repealing the GHG program is its contemporaneously proposed withdrawal of the 2009 Endangerment Finding. With that 2009 finding withdrawn, EPA proposes, "[EPA] would no longer have a basis for issuing or retaining GHG emission standards for new motor vehicles and new motor vehicle engines, including for MYs that have completed manufacture but are subject to ongoing obligations." 90 Fed. Reg. at 36,292–93. EPA further proposes that Section 202(a)(1)'s authorization to "prescribe" and "from time to time revise" vehicle emission standards gives it authority to "revise or rescind prior actions" so long as it follows the change-in-position doctrine, *see FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009), by recognizing the departure from past practice, giving a reasonable explanation for its change, and considering legitimate reliance interests. 90 Fed. Reg. at 36,296.

The Proposal's primary basis is contrary to law in multiple respects. Because EPA's withdrawal of the 2009 Endangerment Finding is itself unlawful, EF Comment Sections IV–VIII, it cannot be the basis of the proposed repeal of the GHG program. Because EPA has found vehicles' GHG emissions contribute to dangerous, climate-forcing air pollution in every rulemaking setting GHG standards since 2010, EPA is simply incorrect that withdrawing the 2009 Endangerment Finding by itself removes its "basis for issuing or retaining GHG emission standards." 90 Fed. Reg. at 36,292. Finally, EPA misapprehends its statutory authority:

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[122] *MotorTrend*, "Recycled EV Batteries Are Coming From Redwood Materials" (Aug. 22, 2024), https://www.motortrend.com/news/ev-battery-cathode-recycling-redwood-materials; Brian Gordon, "Toyota shares NC factory targets for shipping first batteries, hiring 3,000 workers," *The News & Observer* (Jan. 9, 2025), https://www.newsobserver.com/news/state/north-carolina/article298113263.html.

[123] Redwood Materials, "Redwood expands into San Francisco with new R&D Center," https://www.redwoodmaterials.com/news/redwood-expands-into-san-francisco-with-new-r-d-center/.

[124] Camila Domonoske, "The race is on to build EV battery-recycling plants in the U.S.," *NPR* (July 10, 2024), https://www.npr.org/2024/06/27/nx-s1-5019454/ev-battery-recycling-us.

[125] *Reuters*, "GM signs rare earth magnet deal with Noveon Magnetics" (Aug. 6, 2025), https://www.reuters.com/business/autos-transportation/gm-signs-rare-earth-magnet-deal-with-noveon-magnetics-2025-08-06/.

authorization to "revise" is not authorization to "revise or rescind," as the difference in those phrases makes plain. Section 202 grants EPA the authority to regularly update and improve standards to keep pace with the latest scientific understandings and technologies, not tear down entire regulatory programs that support hundreds of billions of dollars of investment-backed expectations after a change in administration.

Assuming that EPA does have authority to repeal the GHG program, the Proposal is an arbitrary exercise of EPA's discretion over ordering and sequencing its regulatory actions. By rushing to repeal the GHG program on such an untested, scientifically flimsy theory as its reconsideration of the 2009 Endangerment Finding, EPA condemns an iconic American industry—and investments in that industry, by the States and Local Governments and Congress itself—to years of protracted uncertainty and inefficiency as challenges to the 2009 Endangerment Finding withdrawal (if finalized) make their way through the courts. At the very least, EPA should postpone repeal of the GHG program until after its reconsideration of the 2009 Endangerment Finding is concluded and upheld on review—if it can be upheld.

A. EPA Lacks Authority to Repeal the GHG Program

The proposed repeal of the GHG program exceeds EPA's statutory authority under the Clean Air Act, for three reasons.

First, for the reasons detailed in the States and Local Governments' Endangerment Finding Comment, EPA's proposed withdrawal of the 2009 Endangerment Finding is unlawful, arbitrary, and capricious. EF Comment Sections IV–VIII. As EPA may not lawfully finalize that proposed withdrawal, that withdrawal cannot be a lawful basis for repeal of the GHG program.

Second, because each of EPA's GHG standards adopted between 2010 and 2024 reaffirmed and reinforced the 2009 Endangerment Finding with new evidence, those standards still have a valid basis absent the 2009 Endangerment Finding and cannot be rescinded simply by withdrawing the 2009 Endangerment Finding. All of those rulemakings provide in substance the "integrated finding of both endangerment and cause or contribution," made while "prescribing the emission standards required in response to such a finding," that EPA now (incorrectly) insists was required. 90 Fed. Reg. at 36,302; *see* EF Comment Section IV.D. In the 2024 rulemaking for multipollutant standards for MY2027–32 light- and medium-duty vehicles, for example, EPA summarized the 2009 Endangerment Finding and a consistent 2016 Endangerment Finding for aircraft greenhouse gas emissions, then proceeded to discuss "recent assessments" of elevated atmospheric GHG concentrations. 89 Fed. Reg. at 27,861–64. "These recent assessments show," EPA stated, "that these elevated concentrations endanger our health by affecting our food and water sources, the air we breathe, the weather we experience, and our interactions with the natural and built environments." *Id.* at 27,862. And light-duty vehicles not only contributed to that pollution: they were "the largest contributor" within the transportation sector, comprising 16.5% of total U.S. GHG emissions. *Id.* at 27,844. EPA extensively discussed new evidence of climate change's drivers and U.S. public health and welfare impacts not available for the 2009 or 2016 Endangerment Findings, including the U.S. Global Change Research Program's Fourth National Climate Assessment, completed in 2017–18 under the first Trump administration. *Id.* at

27,862–64. EPA discussed the endangerment to public health and welfare from criteria pollutants and air toxics in the same manner, summarizing scientific literature about the various health and welfare effects in the U.S. of elevated concentrations of each pollutant. *Id.* at 27,864–81. EPA also stated plainly that motor vehicle transportation emissions contribute to ozone, particulate matter, air toxics, and greenhouse gas pollution. *Id.* at 27,844; *see also id.* at 27,867, 27,873, 28,085, 28,098.

Similar EPA reaffirmations of the 2009 Endangerment Finding and reliance on recent evidence further showing endangerment and contribution appear in every rulemaking setting vehicle GHG standards. 75 Fed. Reg. at 25,491–96 (MY2012–16 light-duty standards); 76 Fed. Reg. at 57,294–300 (Phase 1 heavy-duty standards); 77 Fed. Reg. at 62,894–98 (MY2017–25 light-duty standards); 81 Fed. Reg. at 73,833–35 (Phase 2 heavy-duty standards); 85 Fed. Reg. at 24,845–53 (revised MY2021–26 light-duty standards); 86 Fed. Reg. at 74,489–90 (revised MY2023–26 light-duty standards); 89 Fed. Reg. at 29,474–75 (Phase 3 heavy-duty standards).

Because each of the GHG standards EPA has promulgated are independently supported by their own reaffirmations of endangerment and contribution, EPA's proposed withdrawal of the 2009 Endangerment Finding is not a legally sufficient basis to repeal them. EPA has not purported to withdraw or disavow any of the more recent evidence or analysis of endangerment and contribution in those rulemakings. Nor has EPA offered the public any notice (let alone adequate notice) of how it would apply any of its present grounds for withdrawing the 2009 Endangerment Finding to its subsequent rulemakings; nor has it provided any opportunity to comment on such application.

Third, even assuming EPA's proposed withdrawal of the 2009 Endangerment Finding were lawful and somehow operated to scrub all reaffirmations of endangerment and contribution from the Federal Register, EPA's proposed repeal of all GHG standards exceeds its authority under the Clean Air Act and cannot be finalized. EPA premises its repeal of the GHG program on its withdrawal of the 2009 Endangerment Finding, citing its "general authority to rescind prior actions." 90 Fed. Reg. at 36,296. According to EPA, "when the EPA rescinds an endangerment finding for an air pollutant, it must cease prescribing and enforcing standards applicable to the emission of that pollutant from new motor vehicles or new motor vehicle engines and should rescind existing standards no longer authorized by statute." *Id.* at 36,298. Administrator Zeldin characterized this theory in more candid terms this past March: "I've been told the endangerment finding is considered the holy grail of the climate change religion,"[126] Zeldin stated in a video posted on the social media platform X (formerly Twitter), and he promised to "driv[e] a dagger straight into the heart of the climate-change religion."[127]

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[126] Lee Zeldin, @epaleezeldin (Mar. 12, 2025), https://x.com/epaleezeldin/status/1899876025363837292.

[127] EPA Press Office, "EPA Launches Biggest Deregulatory Action in U.S. History" (Mar. 12, 2025), https://www.epa.gov/newsreleases/epa-launches-biggest-deregulatory-action-us-history.

EPA's statutory authority to "from time to time revise" is not so grandiose, however. "As a creature of statute," EPA "has only those powers conferred upon it by Congress." *HTH Corp. v. NLRB*, 823 F.3d 668, 679 (D.C. Cir. 2016). And the D.C. Circuit long ago rejected the proposition on which EPA's rescission is premised—i.e., that the reversal of a determination prerequisite to regulation "*ipso facto* must result in removal of" that regulation. *New Jersey v. EPA*, 517 F.3d 574, 582 (D.C. Cir. 2008). "[T]his simply does not follow." *Id.*

Rather, EPA's authority to repeal the GHG program depends on the explicit or implicit powers granted in the Clean Air Act to revisit Section 202(a) regulations. *See Nat. Res. Def. Council v. Regan*, 67 F.4th 397, 401 (D.C. Cir. 2023). Moreover, any "inherent" or "statutorily implicit" reconsideration authority "does not apply in cases where Congress has spoken"—i.e., where "'Congress has provided a mechanism capable of rectifying mistaken actions.'" *Ivy Sports Medicine, LLC v. Burwell*, 767 F.3d 81, 86 (D.C. Cir. 2014) (Kavanaugh, J.) (quoting *American Methyl Corp. v. EPA*, 749 F.2d 826, 835 (D.C. Cir. 1984)).

Here, Congress has provided a mechanism for updating Section 202(a) standards based on new understandings of the science, technology, and economics of motor vehicle emissions control: the power to "revise." 42 U.S.C. § 7521(a)(1). Under that limited statutory mechanism, EPA lacks the authority to retroactively rescind all prior GHG standards for model years 2012–25. As for model years 2026 and beyond, Congress has likewise not authorized EPA to drive a dagger into anything; EPA may "from time to time revise" emissions standards "in accordance with the provisions of" Section 202. *Id.* Whatever the scope of that authority, the proposed repeal all GHG standards, based on the justifications EPA offers, exceeds that scope.

1. EPA lacks authority to retroactively rescind standards for past model years

"[A] statutory grant of legislative rulemaking authority will not … be understood to encompass the power to promulgate retroactive rules unless that power is conveyed by Congress in express terms." *Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204, 208 (1988); *cf. General Motors Corp. v. NHTSA*, 898 F.2d 165, 177 (D.C. Cir. 1990) (affirming NHTSA's conclusion that Congress intended to provide certainty and finality with regard to a vehicle model year's applicable fuel-economy standards, and thus upholding NTHSA's decision not to change standards after the model year had begun). Here, EPA lacks statutory authority, express or implicit, to retroactively deregulate the GHG emissions of vehicles that have already been produced and sold.

The text of Section 202(a) makes plain that EPA's predicate determination of endangerment and contribution operate prospectively—i.e., whether vehicle emissions *will* cause or contribute to dangerous pollution, not whether they did in the past. EF Comment Section IV.E. At most, then, Section 202(a) would permit EPA to determine that new vehicle classes' GHG emissions *no longer* cause or contribute to pollution that threatens public health and welfare. And because the endangerment finding is the predicate for EPA's power to "revise" standards as much as for its power to "prescribe" standards, 42 U.S.C. § 7521(a)(1), it follows

that EPA likewise can only revise standards prospectively, based on its most current understanding of endangerment and contribution.

Indeed, any contrary interpretation allowing for retroactive standards would amount to EPA prescribing standards for non-new vehicles—a power specifically denied EPA and preserved for the States. *Id.*; *id.* § 7543(d). Similarly, Section 202(a)(2)'s lead time provision, and specifically the term "after," is inimical to retroactive rulemaking, in which EPA's regulatory action would "take effect" in the past. *Id.* § 7521(a)(2).

Other provisions of the Clean Air Act confirm this plain reading. The enforcement, certification, and compliance provisions of Title II all underscore Congress's intent that regulations applicable to a model year are fixed as of the time of production and sale—i.e., that automakers may design and manufacture each vehicle to achieve a stable emissions target, not a changing one. Thus, Section 203(a)(1) prohibits the sale or import of vehicles "manufactured after the effective date of regulations under this part which are applicable to such vehicle or engine unless such vehicle or engine is covered by a certificate of conformity issued (and in effect)." 42 U.S.C. § 7522(a)(1). That certificate of conformity, particular to that model year, is premised on testing and analysis that "assure[s] that each vehicle or engine will comply *during its useful life* … with the regulations" that are applicable at the time EPA certifies the vehicle. *Id.* § 7525(a)(1) (emphasis added). In other words, a given vehicle is certified to a fixed regulatory target for its entire useful life.

Similarly, Section 203(a)(3) makes it unlawful for any person to "remove or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations under this subchapter prior to its sale and delivery to the ultimate purchaser" or "knowingly to remove or render inoperative any such device or element of design after such sale and delivery." *Id.* § 7522(a)(3)(A); *see also id.* § 7522(a)(3)(B) (prohibiting defeat devices that "bypass, defeat, or render inoperative any device or element of design installed on or in a motor vehicle or motor vehicle engine in compliance with regulations"). To state the obvious, the level of emission control achieved by the technology protected by these anti-tampering provisions is fixed to the applicable regulations in place at the time of manufacture and, absent degradation or tampering, also stays constant over the vehicle's life. Here, it is the consumer (and the public) receiving the guarantee of stability—that a given vehicle will continue to perform to a specific regulatory target fixed *prior to* sale.

Section 207 requires automakers to warrant to purchasers that their vehicles are:

> (A) designed, built, and equipped so as to conform *at the time of sale* with applicable regulations under section 7521 of this title, and
>
> (B) free from defects in materials and workmanship which cause such vehicle or engine to fail to conform with applicable regulations *for its useful life*.

Id. § 7541(a)(1) (emphases added). Like the anti-tampering provisions, those warranties indicate that new vehicles' design and manufacture are fixed to a stable regulatory target that does not change after their sale. Section 207 further requires automakers to furnish "with each new motor

vehicle" written maintenance instructions that include a schedule for the replacement of emission control components "during the useful life of the vehicle in order to maintain compliance with [Section 202] regulations" and to bear the cost of those replacements. *Id.* § 7541(a)(3), (c)(3)(A). Here too, the Clean Air Act indicates that the standards on the books at the time that an automaker writes the vehicle maintenance instructions will govern that vehicle's emission performance for its useful life and determine not only any parts replacement schedule, but the automaker's liability to cover the costs of those replacements.

Sections 203, 206, and 207 describe a "one and done" certification regime in which any given vehicle is tested, before time of sale, for conformity *over its entire useful life* with the regulations applicable to that model year and held to those same standards under the anti-tampering and warranty provisions. It is inconsistent with a regime in which regulatory requirements fluctuate or disappear altogether after sale. This context confirms what the plain text of Section 202(a)(1) indicates: that EPA lacks authority to retroactively change the emission standards for vehicles already produced and sold.

2. The power to "from time to time revise" standards does not authorize total repeal of all standards

In contrast to its total lack of authority to retroactively revise standards, EPA does have authority to reevaluate its prospective standards for vehicle emissions, but that authority is still limited to the mechanism Congress provided in Section 202. Subsection (a)(1) states that EPA may "from time to time revise[] in accordance with the provisions of this section, standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or … engines, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare," while subsection (a)(2) provides that any revision to regulation "shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period." 42 U.S.C. § 7521(a)(1)–(2).

Congress provided EPA a modest power to "revise" standards based on updated scientific and technological understandings, not a license to do away with an entire regulatory program. *See Biden v. Nebraska*, 600 U.S. 477, 494–95 (2023) (a "statutory permission to 'modify' does not authorize 'basic and fundamental changes in the scheme' designed by Congress. Instead, that term carries 'a connotation of increment or limitation,' and must be read to mean 'to change moderately or in minor fashion.'" (quoting *MCI Telecomm. Corp. v. AT&T*, 512 U.S. 218, 225 (1994))). Contemporary dictionary definitions of "revise" confirm as much: "revise" means "to make a new, amended, improved, or up-to-date version of." Websters 3d New Intl. Dict. 1944 (1966); *see* Pub. L. No. 91-604, 84 Stat. at 1690 (adding "revise" to § 202(a) in 1970 Clean Air Amendments). "Revise," then, indicates the continuing existence of Section 202(a) standards in some "new, amended, improved, or up-to-date" form and excludes a total repeal. Consistent with this ordinary meaning, the modifying phrase "from time to time" shows Congress's expectation that EPA will regularly revisit standards to amend, improve, and update them, which likewise presumes that standards remain on the books. *Accord* EF Comment Section IV.E.

The Administrative Procedure Act, enacted in 1946, differentiates between the "issuance, amendment, [and] repeal of a rule." 5 U.S.C. § 553(e); *accord id.* § 551(5); *cf.* Pub. L. No. 79-404, 60 Stat. 237, 239 (1946). Congress is presumed to delegate agency authority against a backdrop of such administrative law conventions, *see Biden v. Nebraska*, 600 U.S. at 511–12 (Barrett, J., concurring), and indeed, similar distinctions between amendment and modification, on the one hand, and revocation, de-listing, or waiver, on the other hand, appear frequently in the Clean Air Act. *See, e.g.*, 42 U.S.C. § 7412(c)(9)(B), (d)(6) (distinguishing between de-listing a source category and revising emission standards for that source); *id.* § 7521(a)(6) (authorizing EPA to "revise or waive the application" of vapor recovery requirements); *id.* § 7545(k)(2)(A) (authorizing EPA to "adjust (or waive entirely)" reformulated gasoline requirements); *id.* § 7572(a)–(b) (Department of Transportation authority to "amend, modify, suspend, or revoke a certificate" for violation of aircraft emission standards); *see also id.* § 7545(k)(1)(B)(ii), (vi) (directing EPA to "establish" air toxics standards for reformulated gasoline and then, after certain criteria are met, providing that those standards "shall be rescinded"). Section 202(a)(1)'s omission of repeal authority is thus read as intentional. *See also Russello v. United States*, 464 U.S. 16, 23 (1983) ("[W]here Congress includes particular language in one section of a statute but omits it in another . . . Congress acts intentionally and purposely in the disparate inclusion or exclusion.").

EPA's reading would replace the statutory term "revise" with "revise or rescind," 90 Fed. Reg. at 36,296, flouting the Act's plain meaning and affording EPA sweeping power found nowhere in law. *Util. Air Regul. Grp. v. EPA*, 573 U.S. 302, 328 (2014) (reaffirming "the core administrative-law principle that an agency may not rewrite clear statutory terms to suit its own sense of how the statute should operate"). And for EPA to interpret its modest revision power as a wrecking ball it can take to the entire GHG program turns the text, structure, and purpose of the Clean Air Act on its head. *Cf. Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 468 (2001) ("Congress … does not alter the fundamental details of a regulatory scheme in vague terms or ancillary provisions—it does not, one might say, hide elephants in mouseholes.").

Reading the distinct actions of "rescinding" or "repealing" standards into the term "revise" in Section 202(a)(1) not only strains ordinary meaning, it also clashes with surrounding text. EPA's power is specifically to "from time to time revise[] in accordance with the provisions of this section." 42 U.S.C. § 7521(a)(1). Those provisions include the "useful life" requirement in subsection (a)(1), which presupposes the continuing existence of Section 202(a) standards to "be applicable" to vehicles for their entire useful lives, *id.*, and the heavy-duty program's lead-time and stability requirements, which state that certain heavy-duty standards "shall apply" for a minimum three years before changing, with at least four years lead time, *id.* § 7521(a)(3)(C). Neither provision makes much sense with the nullity that EPA's total repeal would leave. Similarly, a revision power that includes total repeal clashes with the general lead-time provision in subsection (a)(2), since the terms "take effect" and "requisite technology" presume the existence of *some* standard with an "effect" and which "requi[res]" a technology response. *Id.* § 7521(a)(2).

The power to fully repeal all existing standards is also inconsistent with Section 202(m), which directs EPA to require onboard diagnostic (OBD) systems capable of detecting deterioration or malfunctions that "could cause or result in failure of the vehicles to comply with emission standards established under this section." *Id.* § 7521(m)(1)(A). EPA's interpretation implausibly reads Section 202 to require automakers to sink potentially millions of dollars in designing OBD systems for compliance with a regulatory program and then allow EPA to abandon that program.

Importantly, EPA's power to revise is as much predicated on the Administrator's endangerment and contribution determinations as its power to prescribe standards in the first place. *Id.* § 7521(a)(1). EPA's simplistic "Holy Grail" theory is thus self-contradicting: if withdrawing the 2009 Endangerment Finding meant a total elimination of EPA's power to prescribe standards, so too would it eliminate EPA's power to *revise* standards, and thus negate the proposed repeal.

Nor is it anomalous that Congress would intend for emission standards to remain in effect despite a new Administrator's sudden doubts in the scientific consensus. Indeed, the D.C. Circuit determined the Clean Air Act required that very result for EPA's total hydrocarbon standard, despite new scientific confidence that methane hydrocarbons measured under this standard *did not* contribute to ozone formation. *Ford Motor Co. v. EPA*, 604 F.2d 685, 685–86, 688 (D.C. Cir. 1979). EPA continued to regulate vehicle methane emissions despite the lack of endangerment for a decade more. Only after Congress itself directed EPA to adopt new standards applicable solely to nonmethane hydrocarbons in the 1990 Clean Air Act amendments did EPA start limiting its new hydrocarbon standards to nonmethane hydrocarbons. 42 U.S.C. § 7521(g), (h), (i).

While the reasoning of *Ford* is grounded in the text of Section 202(b), it shows there is nothing inherently illogical about the persistence of a regulatory program despite the withdrawal of a predicate finding of need. *See NRDC v. Regan*, 67 F.4th at 404; *New Jersey v. EPA*, 517 F.3d at 582. It is rational for Congress to guarantee to regulated industries a modicum of stability even where new scientific evidence might complicate the original basis for regulation—especially where the regulatory program generates long-term capital investments in testing and compliance, or where Congress has adopted the precautionary principle, deciding, in the face of scientific uncertainty, that the risk of forgoing necessary regulation is worse than the risk of unnecessarily regulating. *See* EF Comment Sections IV.C.2, IV.E. That policy decision is for Congress to make, and EPA must respect it.

Moreover, EPA's Proposal does not raise the question of whether, as in *Ford*, EPA might eliminate emission standards based on a *negative* endangerment finding—i.e., a new scientific confidence that vehicles' GHG emissions *do not* contribute to pollution reasonably anticipated to endanger public health and welfare. *See* 602 F.2d at 685 & n.2 (discussing EPA scientists' belief that methane "does not contribute" to smog). Here, EPA claims only a new lack of confidence in

the scientific consensus around climate change.[128] 90 Fed. Reg. at 36,307–11. It does not even positively claim its vast body of prior findings and evidence around climate change made any scientific error.[129] EF Comment Sections V.B–C. Certainly, it is not surprising that Congress would deny to the Administrator the power to overturn fifteen years of investments in pollution control, destroy a billion-dollar credit market, and hobble entire manufacturing sectors based on his—perhaps temporary—lack of confidence.

B. EPA's Proposed Repeal of the GHG Program based on a Withdrawal of the 2009 Endangerment Finding Is Arbitrary and Capricious

Even if EPA's primary rationale for repealing the GHG program is authorized by the Clean Air Act (and it is not), it is an arbitrary abuse of discretion. Assuming repeal of the GHG program is permissible, it still involves exercise of EPA's discretion—including, at least, agency discretion over how to sequence, structure, and time its regulatory actions. EF Comment Section IV.D.1; *cf. Sierra Club v. Wheeler*, 956 F.3d 612, 616–17 (D.C. Cir. 2020) (finding a duty is "nondiscretionary" under the Clean Air Act only if it requires action by a "date-certain deadline"); *Am. Road & Transp. Builders Ass'n v. EPA*, 865 F. Supp. 2d 72, 82 (D.D.C. 2012) (EPA has no such nondiscretionary duty to "bring its regulations into conformity with statutory law").

EPA remains obligated under the Clean Air Act and the APA to exercise such discretion reasonably, including by considering "responsible alternatives to its chosen policy," *Am. Radio Relay League, Inc. v. FCC*, 524 F.3d 227, 242 (D.C. Cir. 2008), serious reliance interests in prior policy before changing that policy, *Fox Television*, 556 U.S. at 515, and all "important aspect[s] of the problem," *Motor Vehicle Manufacturers Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). In these unprecedented circumstances, and with so much at stake, EPA should give serious consideration to at least one obvious alternative: postponing its proposed repeal until its reconsideration of the 2009 Endangerment Finding and all challenges thereto are finally concluded. Even postponement of the repeal until after the D.C. Circuit's panel review of future challenges to the 2009 Endangerment Finding withdrawal would be more rational than the course that EPA proposes. Given the trillions of dollars in reliance interests at stake, including decades of investment by Congress itself in a domestic clean vehicles industry, EPA's headlong rush into regulatory chaos is profoundly reckless.

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[128] For this reason, EPA has not given adequate notice of any repeal rationale based on such a negative finding.

[129] Thus, any question of when or whether an agency has statutorily implicit authority to correct errors in prior actions is similarly not presented here.

1. EPA should conclude its reconsideration of the 2009 Endangerment Finding before repealing the GHG program

"[An] agency's consideration of some alternatives does not free it from considering other obvious alternatives." *Int'l Ladies' Garment Workers' Union v. Donovan*, 722 F.2d 795, 815–17 & n.41 (D.C. Cir. 1983) (vacating agency repeal of regulations for failure to consider "less far-reaching choices than complete rescission"). Here, the Proposal offers two alternatives that arrive, however, at one sole endpoint: wholesale elimination of fifteen years' worth of pollution standards that have engendered serious reliance by consumers, industry, States and local governments, and even Congress itself. The compliance credit market created under the GHG standards, standing alone, constitutes billions of dollars of value that EPA would destroy with a stroke of the pen. The climate damages avoided by that program—in lives saved, hospital visits avoided, and public and private property protected—exceed $1.8 trillion. 89 Fed. Reg. at 27,860 (Table 8); 89 Fed. Reg. at 29,457 (Table ES-8).

The primary rationale for the proposed repeal is extraordinarily unsound, unlikely to withstand judicial scrutiny, and guaranteed to draw protracted litigation. EF Comment Sections IV–V. Rather than gamble with so many billions of dollars and thousands of American lives, the agency—if it is as bent on this misadventure as it seems, *see* EF Comment Section VI.D—should at the very least be sure its withdrawal of the Endangerment Finding will stick before finalizing repeal of the GHG program.

2. EPA must consider the States and Local Governments' reliance on the GHG program, including their investments in the domestic production of advanced clean vehicles and charging infrastructure

Where an agency's "prior policy has engendered serious reliance interests that must be taken into account," "the agency 'must' provide 'a more detailed justification' for" its change in policy, including "a rational connection between the facts found and the choice made." *Mingo Logan Coal Co. v. EPA*, 829 F.3d 710, 719 (D.C. Cir. 2016) (quoting *Fox Television*, 556 U.S. at 515 and *State Farm*, 463 U.S. at 43). As detailed in the Endangerment Finding Comment, the proposed withdrawal of the 2009 Endangerment Finding is arbitrary and capricious because it ignores the States and Local Governments' serious reliance on the federal GHG program in developing their own climate change policies and in States' attainment and maintenance of the National Ambient Air Quality Standards. EF Comment Sections VI.B.1–2. The same reliance interests just as strongly counsel against repeal of the GHG program based on the proposed withdrawal of the 2009 Endangerment Finding.

But while those stakes are high enough, the States and Local Governments' reliance on the federal GHG program also includes decades of policymaking on domestic industry and infrastructure against a backdrop of aligned federal law and regulations that favor zero- and low-emitting clean vehicles. Although the GHG program is certainly not an "EV mandate," *see infra* Part IV.B.3, its consistent incentives for lower-emission vehicles just as obviously created a favorable regulatory environment for private and public investment in cleaner vehicles, both in

their manufacture and fueling infrastructure. The States and Local Governments' investments in such manufacturing facilities, supply chains, and fueling infrastructure, encouraged by Congress and EPA itself, represent serious reliance interests that deserve consideration before EPA throws regulatory stability out the window. EPA must also consider the loss of the significant benefits in manufacturing, jobs, consumer savings, and energy security that the Proposal will eliminate. *See Michigan v. EPA*, 576 U.S. 743, 753 (2015) ("[R]easonable regulation ordinarily requires paying attention to the advantages *and* the disadvantages of agency decisions.").

a. The States and Local Governments' investments in clean vehicle manufacturing and supply chains

The States and Local Governments have invested substantial resources in the domestic manufacture of zero- and low-emitting vehicles, including investments in research and development for zero-emission technologies, battery manufacture, critical minerals mining and processing, and other key segments of clean vehicles' supply chains. The States and Local Governments made these investments with the expectation that EPA's federal GHG program would continue to complement, and not contradict, Congress's policies and investments supporting clean vehicle innovation and production, *supra* Part II.C, facilitating a healthy market for EVs, plug-in hybrids, and other clean vehicles. In such a regulatory environment, where stable policy signals from Congress, federal agencies, and state and local governments align with global and U.S. automotive industries' vast resource commitments to clean vehicle technologies, the States and Local Governments' early investment creates jobs, increases tax revenue, and secures myriad benefits to our communities. Now, however, EPA abruptly and openly seeks to hobble these vibrant and successful American industries, thwarting the States and Local Governments' substantial investment-backed expectations. Indeed, President Trump and Administrator Zeldin's declared hostility to federal regulations favoring clean vehicles—with the Proposal as its long-anticipated culmination—has already begun undermining the States and Local Governments' domestic industries, costing the American people good jobs and better vehicles, as well as a healthier planet.

Clean vehicle industries already comprise a substantial part of many States and Local Governments' economies. The States and Local Governments have anticipated continued growth throughout the clean vehicles and battery manufacturing sectors in the coming years, with substantial anticipated accompanying job growth. California and New York are each home to between $1 billion and $5 billion in EV investments and related jobs,[130] and between December of 2022 and January of 2025 alone, nine new EV projects in California were announced—

[130] Environmental Defense Fund, *U.S. Electric Vehicle Manufacturing Investments and Jobs: Characterizing the Impacts of the Inflation Reduction Act after 2 Years* (Aug. 2024), at 4, https://www.edf.org/media/us-electric-vehicle-manufacturing-investments-jobs-continue-grow.

amounting to $1.6 billion in investments and hundreds of new jobs.[131] Colorado is home to numerous existing and prospective battery supply chain projects, such as Solid Power Operating in Thornton, which creates electrolyte material,[132] and Amprius Technologies[133] and Iontra,[134] both of which build high-quality EV batteries. Arizona has seen a boom in the clean vehicles industry. As of August 2024, "planned EV and battery investments [in Arizona] from the past year alone are projected to generate $6.1 billion capital investment, $1.27 billion in labor income, and $92 million in state and local tax revenue—translating to nearly 20,000 short-term construction and long-term operations jobs," and nearly 10,000 Arizonans were already employed in the EV sector.[135] Several companies manufacture batteries[136] and EV chargers[137] in Connecticut. In 2024, Chemours announced a new laboratory for testing and scaling next-generation battery technologies would open in Delaware.[138] In 2023, an EV startup announced a

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[131] E2, *Clean Economy Works: Major Clean Energy Projects Announced by Private Sector* (data as of July 25, 2025), https://e2.org/announcements/.

[132] Gov. Jared Polis, "Governor Polis and Department of Energy Deputy Secretary Turk Celebrate $50 Million in Funding for Clean Battery Manufacturing in Colorado, Visit Solid Power Which is Bringing New Jobs to Colorado" (Oct. 11, 2024), https://www.colorado.gov/governor/news/governor-polis-and-department-energy-deputy-secretary-turk-celebrate-50-million-funding-clean.

[133] Linda Dailey Paulson, "Grants, Contracts Support Colorado EV Battery Manufacturing," *NewsData* (Sept. 27, 2024), https://www.newsdata.com/california_energy_markets/southwest/grants-contracts-support-colorado-ev-battery-manufacturing/article_c7691ff8-7b63-11ef-aed3-dfb934585b21.html.

[134] Colorado Office of Econ. Dev. & Int'l Trade, "Advanced Industries Early-Stage Capital and Retention Grant," https://oedit.colorado.gov/advanced-industries-early-stage-capital-retention-grant.

[135] Albert Gore, "Arizona is already a hub for the EV sector. Smart policies will keep it that way," *AZ Mirror* (Aug. 16, 2024), https://azmirror.com/2024/08/16/arizona-is-already-a-hub-for-the-ev-sector-smart-policies-will-keep-it-that-way/.

[136] Rich Kirby, "Cadenza Innovation Consolidates In Danbury, With Plans To Expand" (Nov. 7, 2022), https://cadenzainnovation.com/news/mayor-of-danbury-dean-esposito-attended-ribbon-cutting-ceremony-at-cadenza-innovation-inc/.

[137] Saur News Bureau, "Pune's Quench Chargers Set to Power American EV Industry with New Manufacturing Facility," *Saur Energy International* (Jan. 18, 2023), https://www.saurenergy.com/solar-energy-news/punes-quench-chargers-set-to-power-american-ev-industry-with-new-manufacturing-facility.

[138] Chemours, "Chemours Opens State-of-the-Art Battery Innovation Center to Accelerate the Evolution of Electric Vehicle Batteries" (Aug. 13, 2024), https://www.chemours.com/en/news-media-center/all-news/press-releases/2024/chemours-opens-state-of-the-art-battery-innovation-center-to-accelerate-the-evolution-of-electric-ve.

new factory projected to employ 200 people in Bridgeport, Connecticut.[139] As of 2024, Illinois had announced $9.6 billion in EV investment and 11,200 associated new jobs,[140] and in May of this year, EV manufacturer Rivian announced plans to build a $120 million supplier park in Illinois that will create 100 new jobs in the state.[141] Between 2022 and 2025, businesses in Illinois announced nine new projects surrounding EVs, which would amount to more than $2.7 billion in investments and 2,900 new jobs in the state.[142] Between August 2022 and June 2025, Michigan announced 34 projects in EV research & development or manufacturing—anticipated to, in total, correspond with more than $12 billion in investment in more than 12,000 new jobs in the state.[143] As of 2024, Michigan has announced 20,300 estimated new jobs total in the EV sector.[144] North Carolina, which has grown to be similarly prominent in the EV sector, has announced 15,100 new jobs and $19.5 billion in EV manufacturing investments. [145]

This industrial development involved, in many states, significant public investment. California has provided both tax breaks and grants to EV manufacturers and EV supply chain elements, including $125 million in the 2021–22 fiscal year to increase in-state manufacturing of zero-emission vehicles.[146] In Arizona, the Cactus Mine project—which extracts copper for EV batteries—takes place partially on Arizona State Trust land;[147] KORE power, which manufactures batteries and employs more than 1,200 Arizonans,[148] was eligible for up to $65

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[139] Alexander Soule, "Nanoramic Laboratories gets $47.5 million to help build EV battery plant in Bridgeport, add 200 jobs," *CT Insider* (Dec. 1, 2023), https://www.ctinsider.com/business/article/ct-bridgeport-nanoramic-laboratories-battery-18526507.php.

[140] EDF, *U.S. Electric Vehicle Manufacturing Investments and Jobs*, *supra* note 130, at 3, 6.

[141] *Reuters*, "Rivian to build $120 million supplier park in Illinois" (May 5, 2025), https://www.reuters.com/business/autos-transportation/rivian-build-120-million-illinois-supplier-park-lower-tariff-related-costs-2025-05-05/.

[142] E2, "$22 Billion in Clean Energy Projects Cancelled in First Half of 2025; $6.7 Billion Cancelled in June" (July 24, 2025), https://e2.org/releases/june-25-clean-economy-works/.

[143] *Id*.

[144] EDF, *U.S. Electric Vehicle Manufacturing Investments and Jobs*, *supra* note 130, at 6.

[145] *Id.*

[146] Cal. Energy Comm'n, "Zero-Emission Vehicle Related Manufacturing," https://www.energy.ca.gov/programs-and-topics/programs/zero-emission-vehicle-related-manufacturing.

[147] *Resource World Magazine*, "Arizona Sonoran Announces a Positive Pre-Feasibility Study for the Cactus Mine Project with a US$509M Post-Tax NPV and 55 kstpa Copper Cathode over 21 Years" (2024), https://resourceworld.com/arizona-sonoran-announces-a-positive-pre-feasibility-study-for-the-cactus-mine-project-with-a-us509m-post-tax-npv-and-55-kstpa-copper-cathode-over-21-years/.

[148] Albert Gore, "Arizona is already a hub for the EV sector," *supra* note 135.

million in state incentives;[149] and Lucid Motors, which employs 2,500 Arizonans,[150] likewise received millions of dollars in a 2016 state incentives package.[151] Illinois also strongly incentivizes EV manufacturers to invest in the state: the Reimaging Energy and Vehicles in Illinois Act provides substantial tax credits to qualifying manufacturers, including but not limited to massive exemptions on payroll taxes, tax credits for employer training costs, the ability to carry-forward net operating losses up to 20 years, electricity and natural gas consumption exemptions from state excise taxes, and the ability to negotiate property tax abatement for up to 30 years.[152] In 2024, to secure an EV charging company's corporate headquarters and new production facility, the Maryland Department of Commerce approved a $1 million loan through its Advantage Maryland program.[153] Michigan contributed substantial state investments and incentives over 2022–24 to facilitate more than 12,000 new jobs in the EV sector,[154] including $175 million for Gotion (2023),[155] $2 million for ATC Drivetrain (2023),[156] $1.4 million for DENSO in state incentives (2023),[157] $409 million for Ford (2024),[158] $10.2 million for Magna

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[149] Corina Vanek, "Battery cell maker eligible for millions in state incentives for Buckeye plant," *ABC 15 Arizona*, (Aug. 3, 2021), https://www.abc15.com/news/business/battery-cell-maker-eligible-for-millions-in-state-incentives-for-buckeye-plant.

[150] Albert Gore, "Arizona is already a hub for the EV sector," *supra* note 135.

[151] Ronald J. Hansen & Yvonne Wingett Sanchez, "Lucid Motors deal could cost millions more in incentives than Arizona officials initially said," *AZ Central*, (Dec. 1, 2016), https://www.azcentral.com/story/money/business/economy/2016/12/01/lucid-motors-deal-could-cost-millions-more-incentives-than-arizona-officials-initially-said/94699574/.

[152] Illinois Drives Electric, "Competitive Incentives Through REV Illinois," https://ev.illinois.gov/grow-your-business/competitive-incentives.html.

[153] Maryland Department of Commerce, "Governor Moore Announces Blink Charging to Relocate Headquarters to Maryland" (Mar. 11, 2024), https://commerce.maryland.gov/media/governor-moore-announces-blink-charging-to-relocate-headquarters-to-maryland.

[154] E2, "$22 Billion in Clean Energy Projects Cancelled," *supra* note 142.

[155] Paula Gardner, "Michigan Senate narrowly clears $175 million for China-linked Gotion plant," *Bridge Michigan* (Apr. 20, 2023), https://www.bridgemi.com/business-watch/michigan-senate-narrowly-clears-175-million-china-linked-gotion-plant.

[156] Brian McVicar, "Automotive company plans 163 new jobs, $7.9M investment in West Michigan," *MLive* (Dec. 14, 2023), https://www.mlive.com/news/grand-rapids/2023/12/automotive-company-plans-163-new-jobs-79m-investment-in-west-michigan.html.

[157] Kayleigh Van Wyk, "Battle Creek auto supplier secures $1.4M in incentives for electric vehicle investment," *Crain's Grand Rapids Business* (Oct. 24, 2023), https://www.crainsgrandrapids.com/news/manufacturing/battle-creek-auto-supplier-secures-1-4m-incentive-package-for-electric-vehicle-investment.

International (2022),[159] $3 million for Bollinger Motors (2023),[160] and $6 million for Lucid Motors (2024).[161] North Carolina has similarly offered a slate of incentives and investments to bolster its EV economy, including: $4.1 million in state incentives for Ionna LCC (2024),[162] $3 million in state incentives to Kempower (2023),[163] $3.43 million in state incentives to Epsilon Advanced Materials (2023),[164] $56.3 million in state incentives to Natron Energy,[165] $76.1 million in tax incentives for Wolfspeed (2024),[166] and $1.2 million to Atom Power (2023).[167] In 2023, New Mexico awarded Hota, an EV manufacturer, $3 million in incentives to construct a

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[158] Nora Eckert, "Michigan lowers incentives for Ford EV battery plant to match reduced output," *Reuters* (July 10, 2024), https://finance.yahoo.com/news/michigan-lowers-incentives-ford-ev-180155584.html.

[159] Rose White, "Michigan auto supplier expanding EV footprint with $10.2M in state funding," *MLive* (Oct. 25, 2022), https://www.mlive.com/public-interest/2022/10/michigan-auto-supplier-expanding-ev-footprint-with-102m-in-state-funding.html.

[160] Trade & Industry Development, "MI: Auto Maker Bollinger Motors Receives $3 Million Jobs Creation Grant from State of Michigan" (Jul. 28, 2023), https://www.tradeandindustrydev.com/region/michigan/news/mi-auto-maker-bollinger-motors-receives-3-million-32051.

[161] Detroit Regional Partnership, "EV startup Lucid Motors gets $6M state grant for Southfield engineering center" (Mar. 5, 2024), https://www.detroitregionalpartnership.com/lucid-motors-expands-to-detroit-region/.

[162] Jack Hagel, "Partnership of major automakers to bring global HQ, 203 high-paying jobs to Durham," *WRAL News* (Jun. 11, 2024), https://www.wral.com/story/partnership-of-major-automakers-to-bring-global-hq-203-high-paying-jobs-to-durham/21476187/.

[163] Victor Skinner, "Old North State subsidies to EV industry hits $632.4M for last two years," *The Center Square* (Feb. 8, 2023), https://www.thecentersquare.com/north_carolina/article_236edf4e-a7ef-11ed-9619-533825b551c5.html.

[164] *WRAL Tech Wire*, "'North Carolina had everything to offer' for electric battery materials plant that will create 500 jobs" (Oct. 26, 2023), https://wraltechwire.com/2023/10/26/india-based-company-to-build-650m-electric-battery-materials-plant-in-nc/.

[165] Jack Hagel, "Battery maker plans more than 1,000 jobs, $1.4B plant to Edgecombe County," *WRAL News*, (Aug. 15, 2024), https://www.wral.com/story/battery-maker-plans-more-than-1-000-jobs-1-4b-plant-to-edgecombe-county/21577749/.

[166] Andy Peters, "Wolfspeed To Build $5 Billion Chip Plant Near Durham, North Carolina," *CoStar* (Sept. 9, 2022), https://www.costar.com/article/493773204/wolfspeed-to-build-5-billion-chip-plant-near-durham-north-carolina.

[167] Victor Skinner, "Taxpayer money funnels into Atom Power project for clean energy," *The Center Square* (May 10, 2023), https://www.thecentersquare.com/north_carolina/article_24f78432-ef5d-11ed-9d1b-93d418ebd9a1.html.

factory in Santa Teresa anticipated to employ 350 people.[168] New York awarded up to $5.65 million in incentives to produce a key component in electric motors at General Motors' Lockport Components plant (2022),[169] and was one of several jurisdictions awarding a total of $10 million in incentives to the Electrovaya battery manufacturing facility (2023).[170]

Under the advanced technology vehicle manufacturing incentive, 42 U.S.C. § 17013—which is directly keyed to EPA's vehicle standards, including GHG standards, *see supra* Part II.C.3—the States and Local Governments benefit when automakers build, upgrade, and reopen facilities, such as the 13 facilities Ford upgraded in Illinois, Michigan, and New York, among others, with a $5.9 billion loan.[171] Similarly, Ultium Cells LLC (a joint venture between General Motors and LG Energy Solution) received a $2.5 billion loan under the incentive program in 2022 to finance new lithium-ion battery cell manufacturing facilities in Michigan and other States.[172]

The States and Local Governments' investments followed a boom in consumer demand for clean vehicles, *see supra* Part II.D, Congress's massive investments in domestic clean vehicle manufacturing in the 2021 IIJA and 2022 IRA, *see supra* Part II.C, and over a decade of federal GHG standard-settings across Republican and Democratic administrations which, while varying in stringency, uniformly favored and rewarded investments in zero- and low-emitting vehicles, *see supra* Part II.B. Notably, the hundreds of millions of dollars invested by the States and Local Governments from 2021–2025 followed actions by EPA under the first Trump administration to revise light-duty GHG standards in stringency for six model years, but not otherwise change the program's structure, and to deny four petitions to reconsider the 2009 Endangerment Finding. *See* EPA's Denial of Petitions Relating to the Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, at 1 (Apr. 29, 2022), EPA-HQ-OAR-2022-0129-0053 (noting Jan. 19, 2021 denial of petitions).

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[168] Gov. Michelle Lujan Grisham, "Gov. Lujan Grisham announces new intelligent manufacturing partnership with Hota Group" (Sept. 20, 2023), https://edd.newmexico.gov/wp-content/uploads/2023/09/Gov-HOTA-Announcement.pdf.

[169] Gov. Kathy Hochul, "Governor Hochul Announces General Motors to Invest Nearly $154M at Lockport Plant for Production of Electric Motor Components" (Jan. 21, 2022), https://www.governor.ny.gov/news/governor-hochul-announces-general-motors-invest-nearly-154m-lockport-plant-production-electric.

[170] Electrovaya Inc., "Electrovaya Provides Update on Planned New York Gigafactory" (Aug. 2, 2023), https://electrovaya.com/press/electrovaya-provides-update-on-planned-new-york-gigafactory/.

[171] U.S. Dept. of Energy Loan Programs Off., "Ford," https://www.energy.gov/lpo/ford.

[172] U.S. Dept. of Energy, "U.S. Department of Energy Announces $2.5 Billion Loan to Ultium Cells for Three Domestic Battery Cell Manufacturing Facilities" (Dec. 12, 2022), https://www.energy.gov/articles/us-department-energy-announces-25-billion-loan-ultium-cells-three-domestic-battery-cell.

While the States and Local Governments agree with EPA's plainly correct prior findings that the GHG standards do not mandate EVs, *see infra* Part IV.B.3, it is just as plain that automakers will produce fewer EVs, plug-in hybrids, and other clean vehicles if EPA finalizes the Proposal.[173] Federal vehicle emission regulations are and always have been part of the auto industry's calculus when choosing where to focus research, facilities funding, and other investment. Dramatic alterations to the regulatory environment such as the Proposal will mean that many of the States and Local Governments' extensive investments never will reap their expected benefits in increased jobs, on-shored manufacturing, and increased tax revenue.

Indeed, the new administration's declared determination to overturn the stable regulatory environment supporting the States and Local Governments' investments has already had disastrous effects. Since at least Inauguration Day, this administration has openly signaled to the auto industry that EPA would attempt to curtail, and probably eliminate, vehicle GHG standards. EF Comment Sections VI.D.1–2. With President Trump's declared opposition to Biden-era GHG standards leading up to the November 2024 election, the *Unleashing American Energy* executive order, and Administrator Zeldin's March 12, 2025 "De-Regulatory Day" announcements[174]—all of which anticipated this Proposal precisely—the first quarter of 2025 has seen a devastating loss in domestic manufacturing, jobs, and on-shored investment in the auto sector and battery supply chains. In that period alone, companies cancelled $6 billion in EV manufacturing investments;[175] hundreds of millions of dollars more in investments, which haven't been officially cancelled, are "stalled;" and some investments previously intended for the U.S. are now heading to other countries.[176] As of March, Colorado's Amprius Technologies factory is in jeopardy.[177] Arizona

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[173] EPA itself projects roughly half the technology adoption rates for battery-electric, plug-in hybrid, and strong hybrid vehicles under the Proposal than under the status quo in the light-duty fleet, and total elimination of battery-electric and plug-in hybrid vehicle production in the medium-duty fleet. EPA Physical Effects at 2. The States and Local Governments do not agree with all these projections, but they are illustrative.

[174] *See, e.g.*, "Speech: Donald Trump Holds a Campaign Rally in Duluth, Georgia - October 23, 2024," *Roll Call: Factbase*, https://rollcall.com/factbase/trump/transcript/donald-trump-speech-campaign-rally-duluth-georgia-october-23-2024/#93 ("And on day one of the Trump administration, I will terminate Kamala's insane electric vehicle mandate."); "Trump: 'I will end the electric vehicle mandate on Day 1,'" *NBC News*, https://www.nbcnews.com/news/amp-video/mmvo215216709888; *see* EF Comment Section VI.D.1.

[175] Shannon Osaka, "The U.S. invested in EV battery plants. Now they may be stranded," *Wash. Post* (Jun. 19, 2025), https://www.washingtonpost.com/climate-environment/2025/06/19/electric-vehicle-battery-plants-us-manufacturing/.

[176] Shannon Osaka, "A stunning number of electric vehicle, battery factories are being canceled," *Wash. Post*, (Apr. 4, 2025), https://www.washingtonpost.com/climate-environment/2025/04/03/ev-factories-canceled/.

saw 315 jobs lost in February when an EV manufacturing plant downsized and 40 jobs lost in May when a battery manufacturing plant closed doors.[178] In April, the Stellantis battery manufacturing project in Illinois, representing $3 billion in investment over its anticipated lifetime and 1,000 jobs, was cancelled; the Massachusetts Juniper Power plant, which represented $170 million in investment, was also cancelled.[179] Michigan's BorgWarner EV manufacturing plant closed, terminating 188 jobs, in February.[180] In New York, between January and May, Magnis Energy Technologies downsized, cutting 80 jobs; a Li-Cycle plant, which planned to hire 270 people, was cancelled; and General Motors cancelled an EV manufacturing project.[181] In Washington, OneD Battery Sciences closed in May, terminating 20 jobs in battery manufacturing.[182]

EPA and Administrator Zeldin's commitment to de-stabilizing this American manufacturing success story has been catastrophe enough. Before finalizing this job-killing, factory-shuttering Proposal, EPA must take into account the States and Local Governments' billions of dollars expended in reliance on a program and the stable investment environment it created that the agency now proposes to wipe out by "pen-and-phone regulation[]." *West Virginia v. EPA*, 597 U.S. 697, 753 (2022) (Gorsuch, J., concurring).

b. The States and Local Governments' investments in charging infrastructure

The States and Local Governments have invested substantial resources in building out their EV charging and alternative fueling infrastructure to levels consistent with a significant shift towards zero- and low-emitting vehicles in the national vehicle market, consistent with automakers' substantial investments in these vehicles as a preferred compliance strategy under the federal GHG program. Our States and Local Governments have committed immense amounts of resources (both in terms of time and money), both through the NEVI Formula Program and their own state and local programs, to building out additional charging infrastructure to accommodate expected increases in EV makeup in the overall fleet.

The NEVI Formula Program provides $5 billion to the States for constructing a national network of public EV charging infrastructure. Under the NEVI Formula Program, however, the

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[177] Jackson Guilfoil, "Silicon Valley battery company backtracks on Denver-area factory," *Denver Business Journal* (Mar. 21, 2025), https://www.bizjournals.com/denver/news/2025/03/21/brighton-battery-factory-project-on-hold-denver.html.

[178] E2, "$22 Billion in Clean Energy Projects Cancelled," *supra* note 142.

[179] *Id.*

[180] *Id.*

[181] *Id.*

[182] *Id.*

"Federal share" of NEVI-funded projects is capped at 80 percent, meaning participating States must identify the remaining 20 percent from state funds, other public monies, or private capital. IIJA, Pub. L. No. 117-58, 135 Stat. at 1422. Nevertheless, all 50 States (as well as D.C. and Puerto Rico) chose to participate in the NEVI Formula Program by submitting state EV infrastructure deployment plans and updates for fiscal years 2022 through 2025. As of February 10, 2025, an estimated 57 NEVI-funded charging stations had opened.[183] Currently, at least 16 states have at least one operational NEVI-funded charging station and 38 states have awarded grants for the construction of charging stations.[184] Several States have added newly designated electric vehicle Alternative Fuel Corridors to bring the total Alternative Fuel Corridor network to more than 81,000 miles. And, based on the evolving EV market and changes in State needs and goals, many States further refined their EV infrastructure deployment goals to engage and coordinate with neighboring States in planning for stations on Alternative Fuel Corridors at State borders.[185] In May 2024, Wisconsin announced awards for 53 charging sites, funded by $23.3 million in federal NEVI funds and $10.5 million in private sector funding.[186] In September 2024, Illinois announced the first round of contingent funding for 37 grants, totaling $25.3 million, to add 182 charging ports in the State, and solicited new applications for funding to award approximately 20 awards for $24 million.[187] North Carolina awarded almost $6 million in grants to build nine charging stations.[188] Three States and D.C. announced their own rounds of conditional awards in October 2024, totaling $6.8 million in federal funding matched by $2.2 million in private sector funding (Kansas), $16.2 million in public sector funding matched by more than $5.6 million in private sector funding (Iowa), $1.3 million in federal funding matched by $1.3 million from award recipients (D.C.), and $22.7 million in federal funding (Virginia), to build a total of 76 new charging stations.[189] As of November 2024, Puerto Rico had also begun the process of awarding grants to build 6 additional charging stations, and Delaware announced the first round of awards for 12 charging stations.[190] In January 2025, Colorado opened the largest NEVI-supported station to date which is the first of at least 60 NEVI-funded charging

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[183] Cong. Rsch. Serv., *Status of Federal Implementation of EV Charging Infrastructure*, IN12556 (May 30, 2025), https://www.congress.gov/crs_external_products/IN/PDF/IN12556/IN12556.3.pdf.

[184] *NEVI Awards Dashboard*, *supra* note 99.

[185] NEVI Annual Report 2024, *supra* note 100, at iii, 30–31.

[186] Gov. Tony Evers, "Gov. Evers, WisDOT Announce Grants to Build Wisconsin's Electric Vehicle Charging Infrastructure" (May 23, 2025), https://content.govdelivery.com/accounts/WIGOV/bulletins/39e28cf.

[187] Illinois Drives Electric, "EV Communities," https://ev.illinois.gov/communities.html; *see also* U.S. Joint Office of Energy & Transp., *Q4 2024 NEVI quarterly update* (Nov. 26, 2024), https://driveelectric.gov/news/q4-2024-nevi-quarterly-update.

[188] *Q4 2024 NEVI quarterly update*, *supra* note 187.

[189] *Id.*

[190] *Id.*

sites the State expects to open.[191] And, as of April 18, 2025, New York had completed eleven four-charger EVolve NY sites with NEVI Formula Program funding. New York expects nine more to be constructed over the next year.[192] Minnesota announced it had conditionally awarded funds for 12 new charging stations along interstates 90 and 94 on April 29, 2025.[193] On July 23, 2025, California conditionally awarded $36.88 million for 65 EV charging sites.[194] Oregon has signed grant agreements for all of its Round 1 NEVI grantees and plans to proceed with Round 2 to award its remaining obligated funds in Fall of 2025.[195]

The States and Local Governments have also committed substantial amounts of their own funds. Through calendar year 2024, the California Public Utilities Commission had approved over $738 million in spending on infrastructure to support medium- and heavy-duty electric charging infrastructure, and over $152 million had been spent.[196] New York is investing nearly $3 billion in electrifying its transportation sector.[197] Among other things, the New York Power Authority is working with the State and New York City Department of Transportation to install hundreds of fast charging and Level 2 ports in New York City. Five new EVolve NY sites at municipal parking lots are expected to go into construction in 2025 and six more in 2026. The hubs will offer a total of 70 fast chargers and electrical connections for 280 future Level 2 chargers.[198] New York's Public Service Commission has allocated more than $885 million to support incentive programs for the installation of light-duty EV infrastructure, while the New York State Energy Research and Development Authority (NYSERDA) has invested over $32 million in funding since 2018 to accelerate the deployment of electric vehicle charging

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[191] U.S. Joint Office of Energy & Transp., "Colorado's First NEVI-Funded EV Charging Station Opens Along Economic Corridor" (Jan. 17, 2025) https://driveelectric.gov/news/colorado-nevi.

[192] "Governor Hochul Announces an Additional $30 Million," *supra* note 96.

[193] Minn. Dept. of Transp., "MnDOT announces second round of funds for new EV charging stations" (Apr. 29, 2025), https://www.dot.state.mn.us/news/2025/04/29-statewide-ev.html.

[194] Tellus Power, "California Energy Commission Announces Proposed Awards of $36.88M in Federal NEVI Funding, Tellus Power Chargers Expected to be Installed at ~50% of Awarded Sites," *ABC 27 WHTM* (Aug. 6, 2025), https://www.abc27.com/business/press-releases/globenewswire/9506961/california-energy-commission-announces-proposed-awards-of-36-88m-in-federal-nevi-funding-tellus-power-chargers-expected-to-be-installed-at-50-of-awarded-sites/.

[195] Oregon Climate Office, "National Electric Vehicle Infrastructure Program in Oregon" (Aug. 2025), https://www.oregon.gov/odot/climate/pages/nevi.aspx.

[196] Cal. Pub. Utils. Comm'n, *Charging Infrastructure Deployment and Incentives* (data as of Dec. 2024), https://www.cpuc.ca.gov/industries-and-topics/electrical-energy/infrastructure/transportation-electrification/charging-infrastructure-deployment-and-incentives.

[197] "Governor Hochul Announces an Additional $30 Million," *supra* note 96.

[198] *Id.*

equipment in New York.[199] In May 2023, Minnesota enacted legislation that provided $13.6 million in funds to match the State's NEVI funds to help build out electric vehicle charging infrastructure.[200] In 2024, Michigan approved a $30 million one-time appropriation to support clean fuel and charging infrastructure projects.[201] In 2021, Colorado created several new transportation electrification enterprises that will invest over $730 million in state transportation programs to, among other things, deploy EV charging and hydrogen fueling infrastructure, deploy ZEV transit buses, and increase fleet adoption of EVs.[202] Colorado has already invested over $107 million to build and install over 4,000 charging ports throughout the State, and over $300 million via its EV tax credit to support the purchase of over 80,000 EVs.

Consistent with the ongoing market-wide shift toward zero- and low-emitting vehicles, EPA has promulgated robust GHG emission standards leveraging these technologies, especially as EV and PHEV adoption rates have accelerated. *See supra* Part II.D. EPA has acknowledged that other federal policies (including the IRA and IIJA) as well as consumer demand would be significant factors in driving the market toward widespread EV adoption, but EPA also found that the GHG standards themselves favor and accelerate this shift. 89 Fed. Reg. at 28,094 (the 2024 Multipollutant Rule seeks to "accelerate the continued deployment of these technologies"); 89 Fed. Reg. at 29,703 ("And though increasing penetration of HD ZEVs is projected to continue to happen regardless of the standards, … these standards are expected to help accelerate the process."). EPA explicitly acknowledged that increased investments in charging and alternative fueling infrastructure would follow naturally from its GHG standards. 89 Fed. Reg. 28,013 ("the

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[199] N.Y. Pub. Serv. Comm'n, Case No. 18-E-0138, Order Establishing Electric Vehicle Infrastructure, Make-Ready Program and Other Programs (July 16, 2020), at 5 https://jointutilitiesofny.org/sites/default/files/ORDER%20ESTABLISHING%20ELECTRIC%20VEHICLE%20INFRASTRUCTURE%20MAKE-READY%20PROGRAM%20AND%20OTHER%20PROGRAMS.pdf; Joint Utilities of New York, "EV Make-Ready Program" (2025), https://jointutilitiesofny.org/ev/make-ready; NYSERDA, Charge Ready NY Program, Program Opportunity Notice (PON) 3923, Implementation Manual (Dec. 10, 2020), at 3, https://portal.nyserda.ny.gov/servlet/servlet.FileDownload?file=00Pt000000RDsZXEA1; NYSERDA, "$29 Million Announced for Charge Ready 2.0 Level 2 Charging Infrastructure and Drive Clean Rebates" (July 19, 2023), https://www.nyserda.ny.gov/About/Newsroom/2023-Announcements/2023-07-19-Governor-Hochul-Announces-29-Million-for-Electric-Vehicle-Charging.

[200] Dan Zukowski, "With $200M for electric vehicles, Minnesota aims to boost ownership, charging infrastructure," *Utility Dive* (May 26, 2023), https://www.utilitydive.com/news/minnesota-200-million-transportation-electrification-electric-vehicles-EV-charging/651320/.

[201] Mich. Dept. of Envt., Great Lakes, & Energy, "Clean Fuel and Charging Infrastructure Program," https://www.michigan.gov/egle/about/organization/materials-management/energy/rfps-loans/clean-fuel-and-charging-infrastructure-program.

[202] Matt Frommer, Sw. Energy Efficiency Project, "A breakdown of Colorado's giant transportation funding bill" (Jun. 15, 2021), https://www.swenergy.org/colorado-sb260/.

standards themselves will spur additional investments [in charging infrastructure]"); 89 Fed. Reg. at 29,513 ("We also agree with commenters that the existence of the final standards themselves provides regulatory certainty that will spur further infrastructure investments.").

Given the GHG program's well-understood effect of encouraging investments in EV charging infrastructure, and the States and Local Governments' investments in such infrastructure, it is incumbent on EPA to consider these serious reliance interests before abandoning its GHG program. *Mingo*, 829 F.3d at 718.

c. Lost consumer, grid, and energy independence benefits to the States and Local Governments

The States and Local Governments have invested significant resources in transportation electrification to secure not only the environmental and public health benefits from zero-emission technologies, but also sizeable non-environmental benefits in consumer savings, grid reliability benefits, and energy security. While the States and Local Governments have made these investments using traditional state and local powers and resources, the success of their electrification policies—and thus the extent to which they can secure environmental and non-environmental benefits alike—depends in part on the extent to which federal policies align with or hinder electrification nationally.[203] For the past 15 years, the federal GHG program has aligned with transportation electrification. EPA may not tear down this longstanding regulatory backdrop without first considering the significant lost benefits from such a decision. *Michigan v. EPA*, 576 U.S. at 753.

Instead, the Proposal ignores the massive consumer benefits that the States and Local Governments reasonably expected to secure for their residents and receive as EV purchasers. Many States and Local Governments purchase such vehicles as part of plans to decarbonize their vehicle fleets, with some fleet purchase policies dating to the early days of the GHG program.[204] As discussed in greater detail *supra* in Part II.A.4, the federal GHG program has spurred

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[203] *See, e.g.*, Energy & Envt. Economics (E3), *Arizona Statewide Transportation Electrification Plan: Phase II* (Mar. 2021), at 52, https://illumeadvising.com/files/AZ_Statewide_Transportation_Electrification_Plan_2021-03-30.pdf ("What level of [transportation electrification] adoption Arizona reaches over this time period will be determined by a combination of market and technology developments (e.g., EV costs), federal and state policy (e.g., incentives), consumer preferences, and the relative cost of electricity and gasoline, among other factors.").

[204] *See, e.g.*, Me. Rev. Stat. Ann., tit. 5, § 1830(12) (adopted 2021); Haw. Rev. Stat. §§ 196-9(c)(10), (11) (adopted 2024); Md. Code Ann., State Fin. & Proc. § 14-418 (adopted 2022); 2022 Conn. Pub. Acts No. 22-25; R.I. Exec. Order 15-17 (Dec. 8, 2015); Wash. Exec. Order 21-04 (Nov. 3, 2021); Cal. Pub. Res. Code §§ 25722.5–25722.11, 25724; N.Y. Exec. Order 22 (Sep. 20, 2022); N.Y.C. Admin. Code 24-163.9; Minneapolis Green Fleet Policy, Minneapolis City Council Action No. 2021A-0150 (Feb. 18, 2021).

innovation and improved consumer choice by causing a wider variety of cleaner vehicles to be available to all consumers. The program has had a positive impact on vehicle prices, as EVs, PHEVs, and other clean vehicles have lower total costs of ownership when compared to strictly gas- or diesel-fueled vehicles. *See supra* Part II.D.3, *infra* Part IV.B.2.b.2. EVs require less maintenance than comparable combustion-engine vehicles, and generally require less money to charge than combustion-engine vehicles' cost to refuel. *Id.* NYSERDA in 2019 found that transportation electrification could save New York drivers between $2.8 and $5.1 billion in fueling and maintenance costs.[205] A 2021 report for the Arizona Corporation Commission similarly found $3,600 per-vehicle savings for consumers from electrification.[206] As policy analysts emphasize, "regulations that drive industry investments and greater production volumes are critical to achieving the pace and scale of battery and electric vehicle cost reductions … and the associated timing for price parity."[207] Conversely, eliminating the federal GHG program will delay and even destroy these benefits, as even EPA's analysis shows. *See infra* Part IV.B.2.b.2 (draft RIA shows $350 billion net social costs attributable to Proposal, including lost consumer savings).

Existing federal GHG standards also provide for warranties, battery durability requirements, and other critical consumer protections for purchasers of zero- and low-emitting vehicles. *See, e.g.*, 40 C.F.R. §§ 85.2102–2105, 86.1815-27. By repealing the federal vehicle GHG standards, EPA will likewise deprive the States and Local Governments—and other purchasers of EVs—of these warranties and durability guarantees.

As discussed in more detail *infra* Parts IV.B.6.a–b, higher EV adoption offers grid benefits, including "demand-smoothing" improvements to reliability and downward pressure on electricity rates. The States and Local Governments have adopted transportation electrification policies citing these grid benefits, including in Arizona in 2021,[208] Massachusetts in 2022,[209]

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[205] NYSERDA, *Benefit-Cost Analysis of Electric Vehicle Deployment in New York State*, Report No. 19-07 (Feb. 2019), at 76–77, https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/Publications/Research/Transportation/19-07-Benefit-Cost-Analysis-EV-Deployment-NYS.pdf; *see also* Union of Concerned Scientists, *Key Facts: Electric Vehicle Benefits for New York* (Apr. 2019), at 2, https://www.ucs.org/sites/default/files/attach/2019/04/State-Benefits-of-EVs-NY.pdf ("In New York City, fueling an EV is like paying the equivalent of $0.36 for a gallon of gasoline.").

[206] *Arizona Statewide Transportation Electrification Plan: Phase II*, *supra* note 203, at 47–50.

[207] Peter Slowick, et al., ICCT, *Assessment of Light-Duty Electric Vehicle Costs and Consumer Benefits in the United States in the 2022–2035 Time Frame* (Oct. 2022), at 28, https://theicct.org/wp-content/uploads/2022/10/ev-cost-benefits-2035-oct22.pdf.

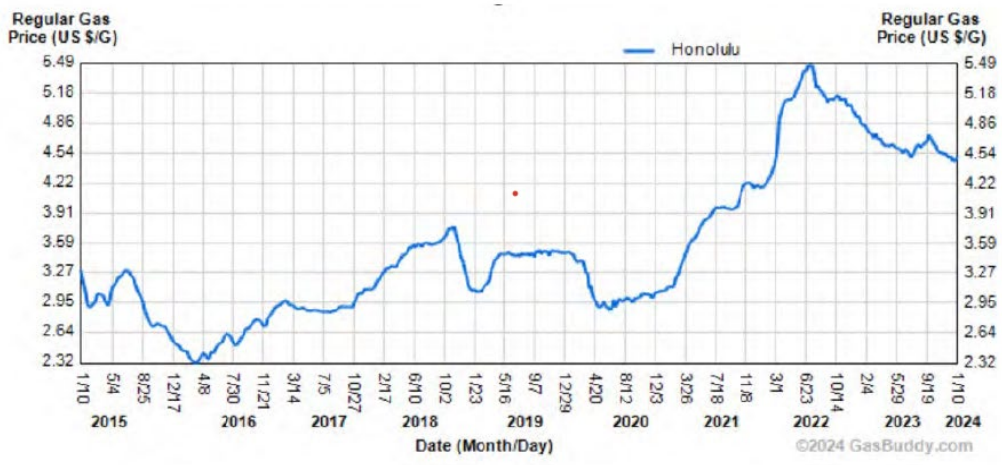
[208] *Arizona Statewide Transportation Electrification Plan: Phase II*, *supra* note 203, at 51–52.

[209] Commonwealth of Massachusetts, Electric Vehicle Infrastructure Coordinating Council, *Initial Assessment to the General Court* (Aug. 11, 2023), at 64–70, https://www.mass.gov/doc/evicc-final-assessment/download.

Minnesota in 2019,[210] and New York in 2019.[211] Here too, the Proposal will delay or reduce these benefits to the States and Local Governments by impeding the pace of electrification nationally. *See* EPA Physical Effects at 2 (showing decreases in EV and PHEV production from Proposal).

The States and Local Governments also stand to lose substantial energy security benefits from EPA's Proposal. *See infra* Part IV.B.6.e. To take one striking example: the State of Hawai'i has no domestic sources of petroleum, but it depends on petroleum for roughly 80 percent of its energy consumption.[212] In 2022, the State's third-largest supplier of petroleum was Russia; but after Russia invaded Ukraine and the U.S. imposed sanctions, Hawai'i stopped importing Russian oil altogether. Geopolitical turmoil, supply chain disruptions, and natural disasters expose Hawaiians to significant oil price shocks:

Figure 11. Retail Gasoline Prices, Honolulu HI, 2015 - 2023



Source: GasBuddy.com. Prices shown in nominal dollars.

[210] Minn. Pub. Util. Comm'n, Order Making Findings and Required Filings, Dkt. No. 135, *In the Matter of a Commission Inquiry into Electric Vehicle Charging and Infrastructure*, Dkt. E-999/CI-17-879 (Feb. 2019), at 10 (finding "that electrification of Minnesota's transportation sector can further the public interest in: … Affordable, economic electric utility service by improving utility system utilization/efficiency and placing downward pressure on utility rates through increased utility revenues and better grid utilization.").

[211] NYSERDA, *Benefit-Cost Analysis*, *supra* note 205, at 77.

[212] Hawaiian Electric, *Electrification of Transportation: Strategic Roadmap 2.0* (May 2024), at 23, https://www.hawaiianelectric.com/documents/products_and_services/electric_vehicles/electrification_of_transportation_roadmap/20240531_eot_roadmap_2.pdf

Thus, Hawaiian utilities found the "shift to EVs will substantially reduce Hawai'i's dependence on foreign oil and volatile petroleum supply chains, rendering it more energy secure."[213] The Hawai'i State Legislature likewise cited energy security as a key benefit, alongside climate benefits, in committing to 100% state government fleet electrification by 2035 and a goal of 100% light-duty electrification by 2045: "The State's dependence on fossil fuels also drains the economy of billions of dollars each year, makes residents vulnerable to the volatility of oil prices, and puts residents at increased risk in the event of a natural disaster."[214] But the Proposal makes Hawai'i's and other States' energy security goals all the harder to reach.

3. The Proposal ignores Congress's support for the GHG program and clean vehicles innovation, an important aspect of the problem

As EPA previously found, protective GHG standards—and in particular, those that reflect and support the widespread deployment of vehicles equipped with advanced zero- and low-emission technologies—are consistent with Congress's longstanding support for clean vehicle innovation. Yet in the Proposal, EPA nowhere acknowledges the significant investments Congress has made in the U.S. clean vehicles industry in support of not only its environmental goals, but as a matter of industrial and technological policy as well. *See supra* Part II.C. This conspicuous omission represents both an arbitrary, *sub silentio* change in position, *Fox Television*, 556 U.S. at 515, and a failure to grapple with an important aspect of the problem, *State Farm*, 463 U.S. at 43. *See also Sook Young Hong v. Napolitano*, 772 F. Supp. 2d 1270, 1279 (D. Haw. 2011) (agency's disregard of Congress's enacted policy "entirely fail[s] to consider an important aspect of the problem").

In adopting the 2024 Multipollutant Rule and Phase 3 HD Rule, EPA cited "[o]ver six decades of Congressional enactments and statements [that] provide overwhelming support for EPA's consideration of electrified technologies and technologies that prevent vehicle tailpipe emissions in establishing the final standards." 89 Fed. Reg. at 27,894. EPA found particularly significant Congress's multiple amendments of the Clean Air Act to "impose extremely large reductions in motor vehicle pollution," *id*. at 27,893, and recent legislation that "support[ed] a government-wide approach to reducing emissions by providing significant funding and support for emissions reductions across the economy," *id*. at 27,846.

EPA's prior rulemakings found that strong GHG standards aligned with Congress's recent support for clean vehicle innovation and domestic manufacturing in the IIJA, IRA, and CHIPS Act. *Id*. at 27,851; 89 Fed. Reg. at 29,466; Multi-Pollutant Emissions Standards for MY2027 and Later Light-Duty and Medium-Duty Vehicles: Regulatory Impact Analysis at 4-68,

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[213] *Id.* at 23–25.

[214] Hawai'i State Legislature, H.B. 552 §§ 1, 3 (2021), https://www.capitol.hawaii.gov/sessions/session2021/bills/HB552_.HTM.

EPA-HQ-OAR-2022-0829-5738 (2024 Multipollutant Rule RIA). EPA pointed specifically to, among other Congressional actions:

Supporting EV manufacturing and supply chains

- The IRA's extension of the Advanced Energy Project Credit, 26 U.S.C. §48C(e), which allocates $10 billion in tax credits to support investments in domestic manufacturing facilities for advanced energy technologies, including manufacturing facilities for "light-, medium-, or heavy-duty electric or fuel cell vehicles," vehicle components, and charging infrastructure, Greenhouse Gas Emission Standards for Heavy-Duty Vehicles: Phase 3: Regulatory Impact Analysis at 33, EPA-HQ-OAR-2022-0985-3538 (Phase 3 HD Rule RIA); 26 U.S.C. § 48(c)(1)(A)(i)(VII);
- The IRA's Advanced Manufacturing Production Credit, a production tax incentive of $35/kWh for U.S. production of battery cells and $10/kWh for modules, Phase 3 HD Rule RIA at 30, and 10% production cost for U.S.-produced critical minerals, 89 Fed. Reg. at 27,852;
- The IIJA's $6 billion Battery Processing and Manufacturing Program and Electric Drive Vehicle Battery Recycling and Second-Life Application Program, 89 Fed. Reg. at 28,055-57; Phase 3 HD Rule RIA at 28;
- The CHIPS Act's investments in domestic semiconductor manufacturing, 89 Fed. Reg. at 29699 & n.1297;

Supporting the purchase of advanced clean vehicles

- The IIJA's $5 billion appropriation for the EPAct05's Clean School Bus Program and $5.5 billion purchase program for zero- or low-emission transit buses, Phase 3 HD Rule RIA at 23–24;
- The IIJA's $150 million Reduction of Truck Emissions at Port Facilities Program, which covers electrification of drayage fleets, Phase 3 HD Rule RIA at 28;
- The IIJA's extension of the Congestion Mitigation and Air Quality Improvement Program to cover purchases of medium- and heavy-duty zero-emission vehicles, Phase 3 HD Rule RIA at 27; 23 U.S.C. §149(b)(8)(C);

Supporting EV charging and other zero- or low-carbon fueling infrastructure

- The IIJA's $7.5 billion EV charging programs, including the National Electric Vehicle Infrastructure Formula Program and Charging & Fueling Infrastructure Discretionary Grant Program, Phase 3 HD Rule RIA at 25;
- The IIJA's support for hydrogen fuel, including $11 billion toward producing clean hydrogen, Phase 3 HD Rule RIA at 28–29;
- The IIJA's $10.5 billion Grid Resilience and Innovation Partnerships Program, which helps fund the electrical grid upgrades necessary to expand EV public charging infrastructure, 89 Fed. Reg. at 29,524;

- The IIJA's Ride and Drive Grant Program, which invests in EV charging resilience, performance, and reliability, as well as workforce development, 2024 Multipollutant Rule RIA at 4-71;
- The CHIPS Act's support for domestic manufacturing of semiconductors, which are critical to EV charging infrastructure, 89 Fed. Reg. at 28,125; and
- An additional $40 billion in funding available for charging infrastructure in the Congestion Mitigation & Air Quality Improvement Program, National Highway Performance Program, and Surface Transportation Block Grant Program, 2024 Multipollutant Rule RIA at 5-35; Phase 3 HD Rule RIA at 27.

EPA found that "[t]hese measures represent significant Congressional support for investment in expanding the manufacture, sale, and use of zero-emission vehicles by addressing elements critical to the advancement of clean transportation and clean electricity generation in ways that will facilitate and accelerate the development, production and adoption of zero-emission technology during the time frame of this rule." 89 Fed. Reg. at 27,851; *see also* 89 Fed. Reg. at 29,466 ("The recently-enacted IRA demonstrates Congress's continued resolve to drive down emissions from motor vehicles through the application of the entire range of available technologies, and specifically highlights the importance of [zero-emission vehicle] technologies.").

Notably, while the OBBBA accelerated the sunset of several tax credits and funding programs in the IRA that EPA also cited in the 2024 Multipollutant Rule and Phase 3 HD Rule, Congress chose to leave in place *all* of the above credits and funding programs. Thus, EPA cannot rely on the OBBBA to justify its complete disregard of Congress's vast investments in advanced clean vehicle technology, manufacturing, and innovation.

As discussed *supra* Part II.C, several of these congressional programs explicitly depend on the continued existence of the GHG program. 42 U.S.C. § 13212(f)(2), (3) (EISA's federal fleet requirements keyed to GHG emissions standards); 42 U.S.C. § 17013(a)(1)(B) (EISA's advanced technology vehicle manufacturing incentives, as amended by IIJA, keyed to compliance with EPA's Phase 2 GHG standards for medium- and heavy-duty vehicles). EPA's failure to examine or even acknowledge Congress's reliance on the federal GHG program or the anomalies its repeal of the GHG program would create in federal statutes "entirely fail[s] to consider an important aspect of the problem." *State Farm*, 463 U.S. at 43.

Congress's longstanding support for innovative clean vehicle technologies is consistent with its historical support for gasoline vehicle technology in the first part of the 20th century. The boom in combustion-engine vehicles that led to today's vehicle market reflects federal investments in petroleum industry research and development and the interstate highway system. Certainly, EPA is bound to respect Congress's more recent interventions to shape the U.S. auto market in the manner it now feels most beneficial to U.S. industry, consumers, and the environment, not dismiss those interventions as "ill-conceived government-imposed market

distortions." Exec. Order 14,154, *Unleashing American Energy*, § 2(e), 90 Fed. Reg. 8353, 8353 (Jan. 29, 2025).

IV. EPA'S ADDITIONAL BASES FOR REPEAL ARE UNLAWFUL

In Section V of the Proposal, EPA offers "separate" and alternative bases for repealing the GHG program, "for reasons unrelated to the decision to rescind or retain the Endangerment Finding." 90 Fed. Reg. at 36,311. Those "policy" bases proceed from two basic, fundamentally wrong premises: (1) there is no motor vehicle technology that can "measurably impact GHG concentrations in the atmosphere or the rate of global climate change," rendering GHG standards "futile," and (2) "GHG emission standards may harm, rather than advance, public welfare" by purportedly raising the price of vehicles, limiting consumer choice, and discouraging drivers' replacement of older vehicles with new purchases (with attendant air quality and safety harms from this reduced fleet turnover). *Id.* at 36,311–13.

EPA misreads the Clean Air Act, then builds on those errors with irrational and conclusory factual contentions that are by turns unsupported, fatally incomplete, or contradicted by its own analyses.

First, the alternative bases depend on reinterpreting two terms in Section 202—"requisite technology" in subsection (a)(2) and "public health and welfare" in subsection (a)(1)—in ways EPA has never read them before and which are contrary to their ordinary meaning, statutory context and purpose, and controlling judicial interpretations.

Second, even under those reinterpretations, EPA arbitrarily examined "public health and welfare" and the ostensible futility of GHG standards. By prioritizing a trio of economic values in the vehicle retail market over (and to the exclusion of) the health and environmental harms of air pollution, EPA arbitrarily elevated non-statutory considerations over those that Congress identified. Taking each of these considerations individually—air pollution impacts, vehicle prices, consumer choice, and fleet turnover, as well as electric grid impacts and other social benefits of GHG standards—EPA offers bare talking points and ignores the mountains of detailed analysis and evidence, much of it compiled by EPA itself, that contradict the Proposal's assertions.

Because the alternative bases EPA offers for repealing the GHG program are just as unlawful and arbitrary as its primary basis, the Proposal cannot be finalized.

A. EPA Grounds Its Alternative Bases for Repeal in Novel and Indefensible Statutory Reinterpretations

1. EPA's reinterpretation of "requisite technology" is unsupportable

EPA proposes to repeal the GHG program on the novel theory that "there is no 'requisite technology' for emission control" for light-, medium-, or heavy-duty vehicles "because reducing GHG emissions from such vehicles to zero would not measurably impact GHG concentrations in

the atmosphere or the rate of global climate change." 90 Fed. Reg. at 36,311; *see id.* at 36,312. This proposed reading reinterprets the term "requisite technology" in 42 U.S.C. § 7521(a)(2) to mean requisite to produce a "measurable impact on the identified danger," 90 Fed. Reg. at 36,311, rather than requisite to achieve compliance with a given emission standard. *See also* EF Comment Section IV.C.2 (discussing EPA's attempt to read a similar concept into "contribute"). Putting aside the scientific inaccuracy of EPA's premise, *see infra* Part IV.B.1.a.2, EPA's reinterpretation of "requisite technology" is contrary to the Clean Air Act's plain text.

a. The best reading of "requisite technology" is technology required to comply with the applicable standard

Clean Air Act section 202(a)(2) states: "Any regulation prescribed under paragraph (1) of this subsection (and any revision thereof) shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period." 42 U.S.C. § 7521(a)(2). The best reading of "requisite technology" is the technology required to comply with the relevant emission standard. Section 202(a)(2) concerns the lead time and technological feasibility of a standard adopted under subsection (a)(1); it ensures automakers are not held to compliance with a standard before they can feasibly develop and apply the technology necessary to achieve such compliance. *E.g.*, *NRDC v. EPA*, 655 F.2d at 328 (automakers' challenge to EPA's lead time to comply with PM standards under § 202(a)(2)). Consistent with that function, "requisite" here plainly refers to achieving compliance, not to a particular degree of impact on the identified endangerment.

The D.C. Circuit has always read Section 202 this way: thus, in *NRDC v. EPA*, it read subsection (a)(2) as concerning "the period of time 'necessary to permit the development and application of the requisite technology' *to achieve compliance* with the 1985 particulate standards." *Id.* (emphasis added) (quoting 42 U.S.C. § 7521(a)(2)). Likewise, in *Coalition for Responsible Regulation, Inc. v. EPA*, the D.C. Circuit rejected industry's argument that "EPA's authority to regulate was conditioned on evidence of a particular level of mitigation," the exact proposition EPA makes here. 684 F.3d 102, 128 (D.C. Cir. 2012), *rev'd on other grounds*, *Util. Air Regul. Grp. v. EPA*, 573 U.S. 302 (2014).

Surrounding provisions in Section 202 reinforce this plain reading, consistently linking the technology applied under standards to compliance with those standards. Thus, subsection (i) sets out a table of strict emission limits for MY2003 and later light-duty vehicles and trucks and directs EPA to study whether these, or even more stringent standards, should be adopted. 42 U.S.C. § 7521(i)(1). As part of that study, EPA was to examine "the availability of technology … *for meeting more stringent emission standards*" than Tier 1 standards prescribed in subsections (g) and (h). *Id.* §7521(i)(2)(A)(i) (emphasis added).

Similarly, in subsections (a)(3) and (*l*), Congress directs EPA to prescribe under subsection (a)(1) certain heavy-duty vehicle standards and air toxics standards, respectively. In particular, these "standards" must "reflect the greatest degree of emission reduction achievable

through the application of [available] technology," further reinforcing the link between control technology and compliance with standards. *Id.* §§ 7521(a)(3)(A)(i), (*l*)(2).

Subsection (b) allows for small manufacturers to obtain waiver of NOx standards (prescribed under subsection (a)(1), subject to legislatively set maxima) if EPA determined that "the ability of such manufacturer *to meet emission standards* … was, and is, primarily dependent upon *technology* developed by other manufacturers" and such manufacturer lacks the resources to "develop *such technology*." *Id.* § 7521(b)(1)(B)(i), (ii) (emphases added).

In each of these provisions, the "technology" described is the technology necessary to "meet" a particular "emission standard," not to achieve a particular end-result in ambient air quality or pollutant concentrations. EPA identifies no reason to read the general rulemaking authority in subsection (a)(1) so dramatically differently from these derivative rulemaking provisions.[215]

In essence, EPA's proposed reading seeks an indirect object for the verb form of "requisite," answering the question "What is the 'technology' required *for*?" with a concept—a degree of "impact on the identified danger," 90 Fed. Reg. at 36,311—appearing nowhere in the statute. Under traditional interpretive principles, one would answer "What is the technology required for?" with the nearest reasonable referent canon, the principle that "ordinarily, and within reason, modifiers and qualifying phrases attach to the terms that are nearest." *Grecian Magnesite Mining, Indus. & Shipping Co., SA v. Comm'r*, 926 F.3d 819, 824 (D.C. Cir. 2019). That would attach "requisite technology" to the subject of subsection (a)(2), "Any regulation prescribed under paragraph (1)," so that "requisite technology" means the technology required for the "regulation prescribed under paragraph (1)," as common sense suggests.

What is *not* a candidate for that referent is subsection (a)(1)'s endangerment clause, a distinct provision with a distinct function from the lead-time provision. *See* EF Comment Section IV.D.1. Indeed, there is no actual text in subsection (a)(1) that, combined with "requisite," captures EPA's concept of "requisite to reliably and meaningfully reduce pollutant concentrations or associated impacts." *See* 90 Fed. Reg. at 36,312. Even if subsection (a)(1) could be strained to encompass such a concept, EPA's proposed reading would still reproduce the "misstep" in its 2019 power plant rule of "collaps[ing] two separate functions and provisions of the Act in order to supply a borrowed indirect object." *Am. Lung Ass'n v. EPA*, 985 F.3d 914, 951 (2021), *rev'd on other grounds*, *West Virginia v. EPA*, 597 U.S. 697 (2022).

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[215] Indeed, its conclusion that the "requisite technology" for GHG standards would require mobile carbon removal "should have alerted EPA that it had taken a wrong interpretive turn." *Util. Air*, 573 U.S. at 328. As the record demonstrates, technology requisite to achieve current GHG standards (and criteria and air toxics standards) certainly exists. *See* CARB Comment 34–45, 72–84; 89 Fed. Reg. at 27,987–95. But EPA's novel logic would require "removal" technology for smog precursors as well. *See infra* Part IV.A.1.b.

b. Judicial precedent on "requisite technology" and agency practice

Uniform court precedent and agency practice since Section 202 was first adopted, in the 1965 Motor Vehicle Pollution Control Act, confirm the above best reading. *See Skidmore v. Swift & Co*., 323 U.S. 134, 140 (1944) (identifying "the thoroughness evident in [an agency's] consideration, the validity of its reasoning, [and] its consistency with earlier and later pronouncements" as factors which give agency views "power to persuade, if lacking power to control").

Most notably, the D.C. Circuit has already rejected EPA's proposed criterion of "reliably and meaningfully reduc[ing] elevated global concentrations of GHGs [or] … the risks of climate change" as a restriction on its ability to prescribe GHG standards for vehicles. In *Coalition for Responsible Regulation*, the Industry Petitioners argued that "EPA failed both to justify the [MY2012–16 GHG standards] in terms of the risk identified in the Endangerment Finding and to show that the proposed standards 'would meaningfully mitigate the alleged endangerment.'" 684 F.3d at 127 (quoting industry brief). The Court refused to read into its case law or the statute any implication "that EPA's authority to regulate was conditioned on evidence of a particular level of mitigation; only a showing of significant *contribution* was required." *Id.* at 128.

Likewise, all the D.C. Circuit's precedents on technological feasibility and lead time under Section 202 concern industry's ability to develop technology *to meet emissions standards*, not technology to reduce ambient concentrations or public health and welfare harms by some non-statutory quantity. *See e.g.*, *Int'l Harvester*, 478 F.2d at 623–24, 636, 648–49 (the question is "whether technology is available to meet the [] standards"); *MEMA I*, 627 F.2d at 1126 ("whether the manufacturers' current and projected capabilities permit them to meet the . . . regulations"); *NRDC v. EPA*, 655 F.2d at 328–32 (whether "the necessary technology will be available … to comply with the standard"); *cf. California v. EPA*, 940 F.3d 1342, 1349 (D.C. Cir. 2019) ("whether technology will be available to meet the standards").

Turning to the extensive body of Section 202 regulations since 1965, EPA identifies no use of "requisite"—ever—to mean requisite to produce a "measurable impact on the identified danger." Rather, "requisite" is always read as requisite for compliance with a standard. *See, e.g.*, 85 Fed. Reg. at 25,106 ("That is, when establishing emission standards, the Administrator must consider both the lead time necessary for the development of *technology that can be used to achieve the emission standards* and the resulting costs of compliance on those entities that are directly subject to the standards." (emphasis added)); 75 Fed. Reg. at 25,457 (discussing the "requisite technology to enable compliance with the final 2016 standards"); 31 Fed. Reg. at 5170 (citing the "lead time necessary under current manufacturing processes to *conform to these requirements*," i.e., the prescribed emission standards (emphasis added)).

EPA's reading of "requisite technology" and its related futility and contribution arguments—that regulation is improper where emission reductions would not "meaningfully address the identified risks," 90 Fed. Reg. at 36,312—would equally defeat the archetypical vehicle emission standards. Smog problems persist, after all, despite advanced catalytic converter

technologies that reduce running NOx emissions to near-zero. *See* 79 Fed. Reg. 23,414, 23,461–62 (Apr. 28, 2014) (Tier 3 criteria standards). Congress understood this full well in passing the Clean Air Act: emission reductions from control technologies are often swamped by a growing vehicle population. *See, e.g.*, Message from the President regarding Air Pollution, 113 Cong. Rec. 1869–70 (Jan. 30, 1967) (President Johnson's observation to Congress that the "sheer number of motor vehicles may, within a decade or two, defy the best pollution control methods we can develop"); *see also Massachusetts v. EPA*, 549 U.S. 497, 524 (2007) ("Agencies, like legislatures, do not generally resolve massive problems in one fell regulatory swoop."). Rather, what Section 202(a)(1) standards have always been understood to do is reduce vehicle emissions' *contribution* to broader pollution problems, providing a key tool in a federal-state collaboration to reduce pollution across multiple, diverse source categories, all of which contribute to dangerous air pollution. Greenhouse gas emissions standards under Section 202(a)(1) operate in the same way.

c. The best reading of "prevent or control such pollution"

EPA passingly cites language in the last sentence of subsection (a)(1), regarding vehicle technologies to "prevent or control such pollution," as support for its reinterpretation. That claim too is contrary to the text's best and most natural reading.

The best reading of technologies that "prevent or control such pollution" is, consistent with the above, those technologies that prevent or control the vehicle emissions that "cause, or contribute" to pollution. The contrary reading—which even EPA does not carry to its logical endpoint—would make individual vehicles responsible for controlling ambient air quality. By connecting "prevent or control such pollution" to the subject of the endangerment clause, "air pollution which may reasonably be anticipated to endanger public health or welfare," 42 U.S.C. § 7521(a)(1), EPA's reading would expect individual vehicles and engines to incorporate devices that "prevent or control," e.g., ground-level ozone in their respective air basins. That impossible bar makes no sense for either criteria pollution or greenhouse gases.

Statutes—especially single subsections—should be read together harmoniously, such that, here, "prevent or control such pollution" should be read alongside the "cause, or contribute" language in subsection (a)(1). It would strain the text to trigger EPA's regulation of vehicle classes based on their aggregate *contribution* to pollution but then make vehicles responsible for prevention or control of *more* than their contribution.

To the extent EPA reads subsection (a)(1) to require the existence of technologies that, when applied to all vehicles in a class, "reliably and meaningfully reduce elevated [pollutant] concentrations," 90 Fed. Reg. at 36,312, in order to regulate at all, that is likewise not the text Congress wrote nor the policy Congress enacted into statute.

First, such a reading strains and indeed invents statutory text. Neither the duty to prescribe standards nor the endangerment and contribution clauses themselves include any

technological criterion. Rather, Congress deliberately tied EPA's technological judgments to lead time and durability. 42 U.S.C. §7521(a)(1)-(2).[216] While lead time and durability considerations necessarily inform both the stringency of standards and compliance, they play no part in the duty to regulate. EPA is bound to read the statute consistent with the structure Congress chose. *Cf*. EF Comment Section IV.D.1.

Second, that test is simply unworkable in the context of criteria standards. The structure of the Clean Air Act's mobile source program contemplates the same federal standards for cars in pristine rural hamlets and cars in heavily polluted airsheds, where heavy industry, fossil fuel extraction, and upwind air transport might vastly outweigh the contribution of vehicle emissions to smog and soot. Whether a catalytic converter "measurably impacts" or "control[s]" the ozone problem, even if every vehicle installs one, will vary dramatically by area. Such a test is incompatible with the statute Congress enacted.[217]

d. EPA's "generation-shifting" analogy

Because EPA's reinterpretation of "requisite technology" is contrary to statute, its professed concern that a "complete change from internal combustion engines to EVs or another zero-emission technology" would be "analogous to the generation-shifting approach we attempted to take for existing stationary sources" is irrelevant. 90 Fed. Reg. at 36,311–12. No such "complete change" is required; as EPA previously found, even the most stringent iterations of the GHG program could be met with no additional production of electric vehicles. 89 Fed. Reg. at 28,057, 28,076–80; 2024 Multipollutant Rule Resp. to Comments at 309–16.

EPA's generation-shifting analogy is also wrong. Applying zero-emissions technologies to new vehicle models follows EPA's traditional technology-based approach for mobile sources, 89 Fed. Reg. at 27,897–98, the approach that *West Virginia v. EPA* endorsed for stationary sources, 597 U.S. at 725 (describing that approach as "the application of measures that would reduce pollution by causing the regulated source to operate more cleanly"). *See also* EF Comment Section IV.C.4.c. Under this traditional approach, "complete changes" are common, in that the entire vehicle fleet is typically expected to apply one or multiple compliance

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[216] The original text of Section 202 could be read to incorporate technological feasibility as a consideration relevant to the entirety of that section, including the endangerment and contribution clauses. Pub. L. No. 89-272, § 101, 79 Stat. at 992–93 (1965). In the amended (now current) text, the placement of technological feasibility only in subsection (a)(2)'s lead-time provision renders EPA's reading unavailable. "When Congress amends legislation, courts must presume it intends the change to have real and substantial effect." *Ross v. Blake*, 578 U. S. 632, 641–642 (2016) (cleaned up).

[217] Indeed, after EPA sought to regulate high-altitude vehicles distinctly from new vehicles in other areas, given the effect of high altitude on regional pollution, Congress significantly cabined its discretion to do so. 42 U.S.C. § 7521(f). Where Congress has deviated from nationally uniform standards—i.e., through the small manufacturer NOx waivers or the waiver program for California standards—it has done so as an explicit *exception* to Section 202(a)(1) standards. *Id.* §§ 7521(b)(1)(B), 7543(b).

technologies after sufficient lead time. For example, every new vehicle sold in the U.S. installed blow-by systems to achieve the 1966 zero standard for crankcase emissions, *see* 31 Fed. Reg. at 5171; and all new vehicles adopted catalytic converters to achieve NOx standards, 2024 Multipollutant Rule Resp. to Comments at 313. In other cases, automakers have a diversity of technological strategies to achieve compliance, but the entire new vehicle fleet eventually "shifts" from noncompliant to compliant vehicles. 2024 Multipollutant Rule Resp. to Comments at 312–13 (describing instances where EPA based standards on one anticipated technology, but automakers complied by applying different technologies); *see* 42 U.S.C. § 7521(g), (h) (phasing in Tier 1 standards until 100% of the national fleet is compliant). The GHG standards here are even more flexible because of their fleet-average structure, allowing automakers to produce innumerable combinations of gas, strong hybrid, plug-in hybrid, and battery-electric models while achieving compliance.

In any case, the holding of *West Virginia v. EPA*—which did not involve Section 202(a) at all—was not that generation-shifting is "illegal," 90 Fed. Reg. at 36,312, but that EPA's interpretation of "best system of emission reduction" in Section 111(a) to include "generation-shifting" was an incorrect reading. 597 U.S. at 734–35. The Court's statutory interpretation in that case turned on the specifics of stationary source regulation under Section 111, including: the novelty and transformative nature of EPA's regulatory approach, *id*. at 725–28, the history of federal cap-and-trade legislation, *id*. at 731–32, the economic consequences of coal plants shuttering or reducing output, *id*. at 728–30, and the anomaly of appointing EPA as a centralized energy planner, *id*. at 729–30. *See also id.* at 744, 746 (Gorsuch, J., concurring) (emphasizing the States' longstanding priority over power generation). Here, Section 202 is a different provision with different statutory text, applied to a different industry and type of source, with a different regulatory history, and a different federal-state balance. EF Comment Section IV.C.4.

EPA identifies no way in which the interpretive concerns animating *West Virginia v. EPA* obtain here at all. Nor has it explained—or even shown awareness of—its complete change of position from its far more detailed consideration and rejection of these same arguments last year. Multipollutant Rule Resp. to Comments 309–10; *see Fox Television*, 556 U.S. at 515.

If anything, EPA's revision of "requisite technology" to require "measurable impact" on "the identified danger" or on ambient air quality, 90 Fed. Reg. at 36,311–12, would be the novel and transformative interpretation, empowering EPA to hold automakers directly responsible for the attainment of the National Ambient Air Quality Standards (NAAQS) instead of States. While ordinary tools of statutory interpretation are sufficient to dismiss EPA's proposed reading of "requisite," if the major questions doctrine has any role to play here, it cuts against EPA.

2. EPA's reinterpretation of "public health or welfare" is unsupportable

EPA proposes to determine that "GHG emission standards harm public health and welfare by increasing prices, decreasing consumer choice, and slowing the replacement of older vehicles that are less safe and emit a greater volume and variety of air pollutants than new motor vehicles and engines." 90 Fed. Reg. at 36,291. Yet, the statutory standard is not whether "GHG emission *standards* harm public health and welfare," *id*. (emphasis added), but rather whether

"air pollution" may reasonably be anticipated to endanger public health or welfare, 42 U.S.C. § 7521(a)(1). Moreover, EPA's proposal fundamentally reinterprets the term "public health or welfare" to prioritize a subset of market values favored by the current administration and exclude any consideration of health and environmental damage. That novel reinterpretation contravenes the text of Section 202 and the purpose of the Clean Air Act itself.

The plain text of Section 202's endangerment clause makes "air pollution," not "air pollution standards," the subject of the verb phrase "may be reasonably anticipated to endanger public health or welfare." 42 U.S.C. § 7521(a)(1). EPA's reinterpretation effectively amends the statute to incorporate the word "standards" after "air pollution." *See United States v. Temple*, 105 U.S. 97, 99 (1881) ("When the language is plain, we have no right to insert words and phrases."). Congress elsewhere expressly identified "air pollution brought about by … the increasing use of motor vehicles" as the source of "mounting dangers to public health and welfare," 42 U.S.C. § 7401(a)(2), and declared the Clean Air Act would "promote the public health and welfare" by "protect[ing] and enhanc[ing] the quality of the Nation's air resources," *id.* § 7401(b)(1). EPA's reinterpretation flatly contradicts not only this express statement of purpose, but also controlling D.C. Circuit authority on this exact term: "the phrase 'public health and welfare' is directly related to the effects of *pollution* on the environment." *MEMA I*, 627 F.2d at 1117 (emphasis added). EPA's novel interpretation thus inverts text, intent, and precedent by directing its public health and welfare analysis at the remedy (GHG standards) instead of the problem (GHG emissions).

The Proposal's "public health and welfare" argument also contravenes the Act's text and purposes by reading out of that term its comprehensive focus on health and environmental harms and reading into it a handful of economic values about vehicle retail markets. The term "public health" bears its ordinary meaning at the time of the Clean Air Act's drafting: "[t]he health of the community." *Whitman*, 531 U.S. at 465 (quoting Webster's New Int'l Dict. 2005 (2d ed.1950)). And the term "public welfare" is defined in the statute to include "effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being, whether caused by transformation, conversion, or combination with other air pollutants." 42 U.S.C. § 7602(h). While this definition does incorporate "effects on economic values and on personal comfort and well-being" into the "public welfare" analysis, this phrase merely captures one more manner of air pollution damage, like every other term listed in the definition. *Cf. Fischer v. United States*, 603 U.S. 480, 487 (2024) (applying *noscitur a sociis* canon to "avoid[] ascribing to one word a meaning so broad that it is inconsistent with" "the company it keeps" (quoting *Gustafson v. Alloyd Co.*, 513 U.S. 561, 575 (1995))). That is, the Clean Air Act requires through the term "public welfare" a comprehensive analysis of "the effects of pollution on the environment," from "its adverse effects on humans" to "its impact on the economy." *MEMA I*, 627 F.2d at 1117–18; *see also* 42 U.S.C. § 7521(a)(1) (charging EPA with determining whether "air pollution" may reasonably be anticipated to endanger public welfare).

Rather than thoroughly analyzing "the effects of pollution on the environment," EPA grounds its entire analysis of public health and welfare in the effects of standards on vehicle prices, consumer choice, and fleet turnover. 90 Fed. Reg. at 36,311–13. Congress did intend for "the economic impact of *pollution*" to factor into EPA's regulatory decision—e.g. "an increased incidence of illness, premature death, increased expenditures for health care and insurance and loss of tax revenues[,] . . . damage to real estate and crops (and other vegetation), and . . . losses for tourist-related industries"—it did not extend this public welfare analysis to "the social costs of pollution *control*," such as consumer choice. *MEMA I*, 627 F.2d at 1117–18, 1118 n.47 (D.C. Cir. 1979) (quoting 95 H.R. Rep. No. 294, at 1112 (1977)) (emphases added); *see also Massachusetts v. EPA*, 549 U.S. at 532–34 (rejecting EPA's attempt not to regulate based on a "laundry list of reasons" and "policy judgments" that were "divorced from the statutory text").

Instead, Congress channeled EPA's consideration of the costs of pollution control into subsection (a)(2), which strictly cabins that consideration to the regulated industry's costs of compliance in order to determine the necessary lead time. 42 U.S.C. §7521(a)(2); *Coal. for Resp. Regulation*, 684 F.3d at 128. That speaks directly to EPA's consideration of the GHG standards' effects on vehicle prices, because EPA's vehicle price analysis equates automakers' compliance costs with consumer price increases. *See infra* Part IV.B.2. Likewise, EPA's arguments about fleet turnover, consumer choice, and economic opportunity all turn on vehicle prices increasing. 90 Fed. Reg. at 36,313. But Congress understood that most, if not all emission standards would impose compliance costs on automakers by requiring them to develop and apply control technologies, and that automakers might pass those costs on to consumers as increased vehicle prices. Its chosen solution was the lead-time provision. *MEMA I*, 627 F.2d at 1118 (explaining that Congress through § 7521(a)(2) "sought to avoid doubling or tripling the cost of motor vehicles to purchasers"). EPA's proposition—that technology costs in the abstract, with their consequent effects on vehicle affordability, consumer choice, and fleet turnover, could be a reason not to prescribe standards at all—would render Section 202 a long-winded suggestion, not a detailed command. *See Whitman*, 531 U.S. at 466–67, 469 (EPA could not consider potential negative economic impacts in setting NAAQS, where Congress had "provided for that precise exigency" in other provisions, and where "the cost factor is *both* so indirectly related to public health *and* so full of potential for canceling the conclusions drawn from health effects"). EPA's attempt to backdoor the economic costs of pollution control into the "public health and welfare" analysis disregards the text and structure Congress carefully chose and cannot serve as a basis for the Proposal. *See also* EF Comment Section IV.D.1.

B. EPA's Alternative Bases Are Arbitrary and Unsupported by Evidence

As discussed *supra* in Part IV.A.2, EPA's novel reading of "public health or welfare" in the Proposal, which includes certain economic values favored by the current administration but excludes air pollution impacts that are core to the Clean Air Act, is contrary to statute. The text, as well as the D.C. Circuit's authoritative interpretation of "public health and welfare" in Section 202(a) to mean "the effects of pollution on the environment … not the social costs of pollution control," *MEMA I*, 627 F.2d at 1117–18, leaves no discretion to EPA to reinterpret its meaning in this manner. *See Loper Bright*, 603 U.S. at 394–95 (limiting agency interpretive discretion). But

even if EPA had that discretion, its proposed "public health and welfare" analysis here constitutes an arbitrary and capricious abuse of discretion.

First, EPA's proposed rationale in Section V arbitrarily substitutes non-statutory economic factors for statutory factors. An agency action is arbitrary and capricious if it is not based on a "consideration of the relevant factors," and if the agency has relied on factors "which Congress has not intended it to consider." *State Farm*, 463 U.S. at 43. Even when exercising their delegated discretion, agencies may not give more weight to extra-statutory goals than to the factors and goals contemplated by the statute itself. *Indep. US Tanker Owners Comm. v. Dole*, 809 F.2d 847, 854 (D.C. Cir. 1987) ("In exercising her decisionmaking authority, the Secretary is certainly free to consider factors that are not mentioned explicitly in the governing statute, yet she is not free to substitute new goals in place of the statutory objectives without explaining how these actions are consistent with her authority under the statute."); *see also Util. Air*, 573 U.S. at 318 ("EPA must ground its reasons for action or inaction in the statute, rather than on reasoning divorced from the statutory text." (cleaned up)). As such, EPA cannot simply announce a policy of non-regulation in contravention of its statutory duties. Rather, the "new policy" must be "permissible under the statute." *Fox Television*, 556 U.S. at 515; *Nat'l Treasury Employees Union v. Chertoff*, 452 F.3d 839, 865 (D.C. Cir. 2006) ("The agency's policy preferences cannot trump the words of the statute.").

Here, EPA has proposed to repeal all vehicle GHG emission standards on the basis that purported effects on vehicle prices, consumer choice, and fleet turnover purportedly negatively impact public health and welfare. 90 Fed. Reg. at 36,291. These are non-statutory factors outside the meaning of "public health or welfare." *Supra* Part IV.A.2. In the abstract, EPA could consider such non-statutory factors in addition to its mandatory consideration of the effects of pollution on the environment. Yet EPA has neglected to assess the impact of increased GHG emissions from its Proposal on public health and welfare, a clear sign that it is supplanting, not supplementing, the considerations contemplated in the Clean Air Act. EPA also has failed to provide a reasoned explanation to support its new treatment of public health and welfare. The Proposed Rule's exclusive consideration of the standards' purported economic impacts on the vehicle market contravene the express goals of the Clean Air Act: to prioritize reducing harms from air pollution on public health and welfare over the "social costs" of regulation. *MEMA I*, 627 F.2d at 1118 ("Every effort at pollution control exacts social costs. Congress, not the Administrator, made the decision to accept those costs."). Regulatory discretion and flexibility do not permit EPA to imbue the term "public health or welfare" with a meaning inconsistent with the Clean Air Act. *See Sinclair Wyoming Ref. Co. LLC v. EPA*, 114 F.4th 693, 707 (D.C. Cir. 2024).

Second, EPA's analyses of or refusals to analyze particular factors, both statutory and non-statutory, are independently arbitrary because they are logically flawed, unsupported by data and reliable analysis, or contrary to the evidence. As discussed *infra* in Part IV.B.1, EPA's lack of analysis or limited analyses of GHG and criteria pollution impacts ignored important aspects of the problem, failed to connect the facts found to the choices proposed, and are otherwise arbitrary and capricious. Parts IV.B.2–4 discuss myriad defects in EPA's discussion of vehicle

affordability, consumer choice, and fleet turnover that render the rationale in Section V of the Proposal arbitrary and capricious. Part IV.B.5 identifies fatal deficiencies in the Draft RIA's treatment of electrical grid costs that would make EPA's reliance on that analysis—to the extent it does rely—arbitrary and capricious. Part IV.B.6 discusses other non-statutory factors, namely, jobs and manufacturing and energy security, that EPA has historically considered alongside air pollution impacts when adopting or revising GHG standards, but which EPA inexplicably and arbitrarily excludes from consideration in its Proposal.

To the extent that EPA, after the public comment period, bolsters its alternative bases for repeal with new analysis to address any of these defects, it must offer a new comment period for the public to respond to that analysis. An agency must provide new notice and a new opportunity to comment on a final rule that is not the "logical outgrowth" of the initial notice. *La. Fed. Land Bank Ass'n, FLCA v. Farm Credit Admin.*, 336 F.3d 1075, 1081 (D.C. Cir. 2003). A final rule is not the logical outgrowth of the original notice where a new round of notice and comment would "provide commenters with their first occasion to offer new and different criticisms" to new "evidence and arguments." *Fertilizer Inst. v. EPA*, 935 F.2d 1303, 1311 (D.C. Cir. 1991) (cleaned up). In particular, "[a]n agency commits serious procedural error when it fails to reveal portions of the technical basis for a proposed rule in time to allow for meaningful commentary." *Penobscot Indian Nation v. U.S. Dep't of Housing & Urban Dev.*, 539 F. Supp. 2d 40, 49–50 (D.D.C. 2008); *see also Kern Cty. Farm Bureau v. Allen*, 450 F.3d 1072, 1076 (9th Cir. 2006) ("Integral to an agency's notice requirement is its duty to identify and make available technical studies and data that it has employed in reaching the decisions to propose particular rules."); *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1031 (D.C. Cir. 1978) (finding that agency's final rule was not "logical outgrowth" of previous notice and comment where it was "the result of a complex mix of controversial and uncommented upon data and calculations"). EPA has not provided sufficient analysis to support any element of its proposal that "on balance, and contrary to the core objectives of CAA section 202(a), GHG emission standards harm public health and welfare by increasing prices, decreasing consumer choice, and slowing the replacement of older vehicles that are less safe and emit a greater volume and variety of air pollutants than new motor vehicles and engines." 90 Fed. Reg. at 36,291. If EPA's final rule relies on these same bases to support its final rule, it must provide not only adequate analysis but also a new comment period to allow commenters with "their first occasion" to provide "meaningful commentary" on that analysis. *Fertilizer Inst.*, 935 F.2d at 1311; *Penobscot Indian Nation*, 539 F. Supp. 2d at 49.

1. Air pollution impacts

EPA's assessment of air pollution impacts from the Proposal is egregiously deficient. The Proposal entirely fails to assess the impact of increased GHG emissions on "public health and welfare." 42 U.S.C. § 7521(a)(1). EPA altogether ignores the dire threat posed by climate change, which is an "important aspect of the problem"—indeed, *the* most important aspect—that must be considered in EPA's rulemaking. *State Farm*, 463 U.S. at 43. To the extent EPA purports to rely on its "futility" argument in Section V.C of the Proposal to justify this failure, that argument is irrational, contrary to the evidence, and inadequate to support the proposed

repeal. And specifically, EPA's refusal to consider the costs of those GHG impacts using any version of the social cost of carbon metric is arbitrary and capricious.

While the Proposal fitfully gestures at some consideration of criteria pollution impacts, EPA's analysis is self-contradictory, incomplete, and unsupported by the evidence. The Proposal suggests that repealing GHG standards may actually decrease PM emissions, despite two other analyses showing significant increases in this dangerous pollution. And the Proposal altogether ignores the increases to smog precursors and air toxics its own modeling shows.

The Proposal also arbitrarily excludes the Agency's traditional consideration of disproportionate harms to vulnerable communities from its analysis of public health and welfare. In the 2009 Endangerment Finding and all relevant rulemakings since, EPA has evaluated those impacts and concluded that GHG emissions threaten disproportionate harms to certain especially vulnerable subpopulations and communities, such as lower-income communities, older adult populations, people with disabilities, and indigenous communities. Yet EPA, without explanation, declines to address or even acknowledge these prior findings.

a. Greenhouse gas impacts

1) EPA's failure to assess the impacts of increased greenhouse gas pollution is arbitrary and capricious

EPA's failure to consider the actual impact of the Proposal on global climate change is arbitrary and capricious, as it ignores climate change as "an important aspect" of the regulatory problem. *See State Farm*, 463 U.S. at 43. In the Clean Air Act context, the effect of GHG emission regulations on pollution control and the resulting climate impact is "arguably the most important aspect" of the problem. *Am. Lung Ass'n*, 985 F.3d at 995; *see also Michigan v. EPA*, 576 U.S. at 753 (EPA must consider disadvantages of its action).

Here, EPA's Proposal completely ignores the dire threat posed by climate change and the actual impact of mobile source GHG emissions on air pollution. EPA's undeveloped rationale invoking reduced vehicle prices and increased consumer choice does not even attempt to weigh these economic effects against environmental ones. *See Am. Lung Ass'n*, 985 F.3d at 995 (holding that "undeveloped reasons of administrative convenience and regulatory symmetry" were insufficient in their failure to consider an "important aspect of the problem"). Rather, EPA simply declares without any reasonable support that there are *no* vehicle emissions standards that can reduce the risks of climate change; as discussed *infra*, that basis is unreasonable and unsupportable. EPA's complete disregard for "the most important aspect" of the problem renders the Proposal arbitrary and capricious. *Id*.

Moreover, that failure to engage in any capacity with the GHG impacts of a complete repeal of vehicle emissions standards on climate is an abrupt, dramatic, and irrational departure from EPA's consistent past regulatory focus on that question. *See, e.g.*, 75 Fed. Reg. at 25,495–98, 25,522–23 (MY2012–16 light-duty standards); 76 Fed. Reg. at 57,292–300, 57,332–33 (Phase 1 medium- and heavy-duty standards); 77 Fed. Reg. at 62,889–98 (MY2017–25 light-duty standards); 81 Fed. Reg. at 73,826–35, 73,875-78 (Phase 2 medium- and heavy-duty

standards); 85 Fed. Reg. at 25,039–42, 25,085–88 (revised MY2021–26 light-duty standards); 86 Fed. Reg. at 74,443–45, 74,488–90, 74,504 (revised MY2023–26 light-duty standards); 89 Fed. Reg. at 27,857–59, 28,097–99, 28,115–18 (MY2027–32 light- and medium-duty multipollutant standards); 89 Fed. Reg. at 29,453–55, 29,668–72, 29,708–10 (Phase 3 heavy-duty standards). Indeed, every prior EPA rule setting GHG emissions standards for vehicles included extensive modeling and analysis of the rule's impact on GHG emissions. *See* 75 Fed. Reg. at 25,495–96; 76 Fed. Reg. at 57,292–94; 77 Fed. Reg. at 62,889–94; 81 Fed. Reg. at 73,826–32; 85 Fed. Reg. at 25039–42, 25,085–88; 86 Fed. Reg. at 74,443–45, 74,488–89; 89 Fed. Reg. at 27,857–59, 28,097–99; 89 Fed. Reg. at 29,454–55, 29,668–72. In contrast to the detailed inventories and estimates of GHG impacts in the preambles for previous rulemakings—even deregulatory rulemakings, *see* 85 Fed. Reg. at 24,872–74, 25,053–56, 25,085–88, 25,111–14—the Proposal offers no assessment of how much pollution it will add to the air, or what risks to the public that pollution poses. This *sub silentio* departure from prior policy is unexplained and irrational. *See Fox Television*, 556 U.S. at 515.

EPA's failure to discuss the GHG impacts of the Proposal is all the more baffling because the agency apparently *did* model those impacts, at least for the repeal of the light- and medium-duty program—finding that action would add 7.7 billion metric tons of CO_2-equivalent emissions through 2055.[218] Yet the Proposal itself never discusses or even discloses this staggering figure. EPA's failure to consider the likely results of its proposed repeal of all GHG standards on air pollution, in light of its own data, is particularly arbitrary. *See State Farm*, 463 U.S. at 43 (An agency "must examine the relevant data and articulate a … 'rational connection between the facts found and the choice made'" (quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962)); *Comcast Corp. v. FCC*, 579 F.3d 1, 8 (D.C. Cir. 2009) ("[W]e have not hesitated to vacate a rule when the agency has not responded to empirical data or to an argument inconsistent with its conclusion."). The Proposal's lack of even a "minimal level of analysis" renders it arbitrary and capricious. *Encino Motorcars, LLC v. Navarro*, 579 U.S. 211, 221 (2016).

2) EPA's futility argument is irrational and contrary to evidence

In Section V.C of the Proposal, EPA proposes that "the Agency should not and need not make an endangerment finding … when the regulatory authority conferred by that provision would have no meaningful impact on the identified dangers." 90 Fed. Reg. at 36,312; *see also id.* (asserting "reducing all GHG emissions from motor vehicles and motor vehicle engines to zero would not result in a measurable impact on trends in climate change"). Besides being contrary to statute, that futility argument is simply untrue on its own terms. It is also inconsistent with how EPA approaches contributions to large national and global pollution problems in other sections

[218] EPA Physical Effects at 7.

of the Clean Air Act. EPA thus cannot rely on this futility argument to justify its failure to assess GHG pollution impacts.

In Section V, "EPA proposes repealing existing GHG emission standards for reasons unrelated to the decision to rescind or retain the Endangerment Finding." 90 Fed. Reg. at 36,311. Yet, confusingly, EPA offers its futility argument as a reason "not [to] make an endangerment finding." *Id.* at 36,312. As explained in the States and Local Governments' Endangerment Finding Comment, "futility" is not one of the statutorily admissible considerations for Section 202's endangerment and contribution findings. EF Comment Section IV.D.1. To the extent EPA proposes that "futility" is a valid basis not to prescribe GHG standards even after a finding of endangerment and contribution, that position too is incompatible with the statutory text. While EPA has not provided adequate notice of what it means by the "meaningful" or "measurable" impact it demands under its futility argument, the States and Local Governments assume this threshold is higher than "contribution." But the text of Section 202 is clear: if motor vehicle emissions "contribute to" dangerous pollution, EPA "shall" prescribe standards to address that contribution. 42 U.S.C. § 7521(a)(1); EF Comment Section IV.D.1.

But even taken on its own terms, EPA's argument is contrary to overwhelming scientific evidence, which shows that U.S. on-road vehicles—and even new vehicles in isolation—make a meaningful impact on the identified danger. EF Comment Section IV.D.3. Notably, here, EPA has provided *no* contribution analysis to suggest any other conclusion.

Specifically, EPA proposes to conclude that eliminating GHG emissions from U.S. light- and medium-duty vehicles, separately or in combination with U.S. heavy-duty vehicle emissions, "would not result in a more than *de minimis* impact on trends in climate change and would not demonstrate a requisite technology for regulatory purposes." 90 Fed. Reg. at 36,312. EPA concedes that light-duty vehicles contribute 57% of U.S. transportation sector emissions and medium- and heavy-duty vehicles, 23% of U.S. transportation sector emissions, and that these represent 1.8% and .7% of global GHG emissions respectively. EPA also contends that eliminating emissions from these vehicles would reduce predicted warming by "an approximate 3 percent." *Id*. at 36,311. However, EPA then argues that this reduction is "well below the scientific threshold for measurability and is not a reliable measure for regulatory purposes" because the margin of error for measuring "global warming trends" (which EPA does not define) is, purportedly, plus or minus 15%. *Id*. EPA further contends that "only dramatic reduction in foreign emissions, as well as reductions from domestic sources regulated under other provisions of the CAA, would have any meaningful impact on the global climate change concerns asserted in the Endangerment Finding." *Id.* at 36,312.

The Proposal's "measurability" argument is fundamentally specious: the uncertainty in measuring climate change concerns how rapidly and precipitously climate indicators are trending in a single, well understood direction. While there is uncertainty in how fast and how much human influences are changing, for example, global average temperatures—in large part because different types of anthropogenic emissions have opposing effects, over different time scales—all those climate trends point from bad to worse. Higher atmospheric GHG concentrations mean more energy trapped in our climate system, more warming, and more ocean acidification. More

warming and more acidification lead to the intensification of climate harms, like heat waves and extreme weather, and thus, more endangerment. Fewer emissions have the reverse effect—and mitigate endangerment. EPA knows this now, just as EPA knew it in 2009. *See e.g.*, 74 Fed. Reg. at 66,535 ("The severity of risks and impacts is likely to increase over time with accumulating greenhouse gas concentrations and associated temperature increases and precipitation changes."). By analogy, the uncertainty range for measuring how fast a choppy sea is sending water over a boat's gunwales may be an interesting intellectual exercise, but the boat will sink as water accumulates, regardless of that uncertainty. That measurement problem is similarly irrelevant to the question of whether reducing the water coming into the boat is helpful to the boat's crew: It is. *See* EF Comment Sections IV.D.3, V.A.

To put the argument in concrete, if oversimplified terms: if the increase in global average temperature since the Industrial Revolution is estimated at 100 units with an uncertainty range of +/– 15 percent, then the uncertainty range is 85–115 units. That range in no way undermines the fundamental conclusion that the world is warming. And assuming that EPA's 3% reduction is a 3% reduction in total warming units, then eliminating U.S. vehicles' emissions would result in a lower total warming—with a best guess of 97 units and an uncertainty range of 82.45 to 111.55 units. Again, that uncertainty in no way undermines the conclusion that reducing emissions reduces dangerous warming. Nor does uncertainty make the effect of reductions unobservable or unmeasurable; it simply limits the precision of our measurement.

Indeed, the Proposal never spells out what exactly EPA means by its "scientific threshold for measurability," 90 Fed. Reg. at 36,311; nor does it provide any precedent for such a threshold playing a determinative role in the regulatory process. EPA provides no citation or support for the 15% uncertainty range it assigns to global warming trends other than a reference to the U.S. Department of Energy's Climate Working Group (CWG) Report, which in turn provides no citation or support. CWG, *Impacts of Carbon Dioxide Emissions on the U.S. Climate* 130 (May 27, 2025), EPA-HQ-OAR-2025-0194-0060. Similarly, neither EPA nor the CWG Report define "global warming trends." Is this the change in global average surface temperatures since a specific date? The *rate* of change of global average surface temperatures? The effects of global warming on other climate dynamics, like sea-level rise, ocean warming, or polar ice loss? Each of these trends carries its own degree of measurement uncertainty, but again, none of those measurement questions undermines the value of reducing U.S. transportation's GHG emissions.

None of the imprecision in measuring climate trends changes the fundamental point: as explained in the Endangerment Finding Comment, each increment of GHG emissions added to the atmosphere increases ocean acidification and atmospheric GHG concentrations, which increases global warming, intensifies climate impacts, and increases the risk of triggering climate system tipping points. EF Comment Sections IV.D.3, V.A. As the Intergovernmental Panel on Climate Change (IPCC) concluded, "*Every increment* of global warming will intensify multiple and concurrent hazards":

> Continued emissions will further affect all major climate system components. With every additional increment of global warming, changes in extremes continue to become larger. Continued global

> warming is projected to further intensify the global water cycle, including its variability, global monsoon precipitation, and very wet and very dry weather. . . . With further warming, every region is projected to increasingly experience concurrent and multiple changes in climatic impact-drivers. … The likelihood of abrupt and/or irreversible changes increases with higher global warming levels. Similarly, the probability of low-likelihood outcomes associated with potentially very large adverse impacts increases with higher global warming levels. … Cumulative carbon emissions until the time of reaching net zero CO_2 emissions and the level of greenhouse gas emission reductions this decade largely determine whether warming can be limited to 1.5°C or 2°C.[219]

The fact that *ending* the rise in global temperatures will require anthropogenic emissions to reach net zero does not make each contribution to that target *less important*; it makes each contribution *more important.* And because near-term emission reductions are far more valuable than later reductions,[220] reducing contributions from relatively "easy" sectors—like the vehicles sector, where producers and consumers alike have embraced proven, widely deployed zero-emission technologies with significant advantages over their polluting counterparts, *supra* Part II.D—is all the more imperative. In other words, not only is a 2.5% contribution to global GHG emissions meaningful: *this* 2.5% contribution from U.S. vehicles is especially meaningful because it is feasible and cost-effective to reduce now.

That imperative to reduce U.S. vehicles' GHG contributions aligns with the Clean Air Act's long history and ultimate goal of mitigating harm caused by dangerous air pollution. For some types of pollutants—greenhouse gases included, but also pollutants like lead and asbestos—endangerment is *caused* by emissions from many different types of sources, is *abated* by reducing emissions from any of those sources, and can only be *eliminated* by addressing all significant sources of the pollution. Although limiting emissions from the U.S. transportation sector, the largest source in the United States, is not sufficient on its own to end the rise in global average temperatures, it is necessary to do so, and will mitigate climate changes regardless of other necessary reductions. *See Massachusetts v. EPA*, 549 U.S. at 525–26. The Clean Air Act has long provided EPA the regulatory tool suited precisely to such a problem.

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[219] IPCC, *Climate Change 2023: Synthesis Report* (2023), at 12–13, 18–19 (¶¶ B.1, B.1.3–4, B.3, B.5) (emphasis added), https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_FullVolume.pdf.

[220] The White House, *The Cost of Delaying Action to Stem Climate Change* (July 2014), at 2, https://obamawhitehouse.archives.gov/sites/default/files/docs/the_cost_of_delaying_action_to_stem_climate_change.pdf. This report did not take into account the risk of abrupt, cascading effects (i.e., tipping points), which make near-term reductions that stave off such tipping points far more impactful than reductions after the global climate crosses such thresholds.

3) Failure to monetize GHG impacts was arbitrary

As discussed in the Endangerment Finding Comment, EPA's failure to monetize the public health and welfare harms of GHG pollution was arbitrary. EF Comment Section VIII.B. By ignoring its own well-established methodologies for monetizing climate-related harms, EPA effectively set the social cost of GHG pollution at zero dollars, an indisputably incorrect figure. That flagrant error is fatal to EPA's alternative basis for repealing the GHG program, which asserts that GHG standards do more harm than good. 90 Fed. Reg. at 36,311. By disclaiming any effort to understand the benefits of GHG emission reductions, EPA reduces its alternative basis to *ipse dixit*.

b. Criteria and toxics impacts

1) EPA never properly analyzes the criteria and air toxics impacts of repealing GHG standards, and the reasoning it does offer is conflicting

EPA does not analyze the Proposal's impact on criteria or air toxics emissions. Instead, the Proposal presents a collection of contradictory statements, none supported by modeling or citations. EPA first states it has "serious concerns" that the GHG standards "may be harming air quality by raising prices and reducing fleet turnover," suggesting—without actually finding—that the Proposal would improve air quality. 90 Fed. Reg. at 36,313. The Proposal provides no information to support that suggestion, *id.*, and it is wrong, *see infra* Part IV.B.4. EPA then acknowledges the opposite possibility: that the Proposal could "marginally impact emissions of criteria pollutants and air toxics." 90 Fed. Reg. at 36,328. Finally, EPA asserts without any evidence or analysis that it "does not believe that the proposed action would have a material adverse impact on the health of individuals with respect to non-GHG air pollutants." *Id.* EPA does not define what a "material adverse impact" is but instead claims that, because EPA is retaining criteria pollution standards as well as the NAAQS program for now, the repeal of GHG emission regulations "would have only marginal and incidental impacts on the emission of non-GHG air pollutants." *Id.* at 36,328–29.

EPA's refusal to analyze criteria pollution or air toxics impacts is arbitrary and capricious. EPA cannot reasonably claim the Proposal will both reduce criteria pollution and marginally increase such pollution, with no documentation or analysis for either proposition. Even putting aside the contradiction, EPA's characterization of the criteria pollution consequences as "marginal and incidental" is unreasonable for two additional reasons.

First, EPA has elsewhere announced its intent to reconsider criteria pollution standards, including the very standards it claims will be retained: the criteria standards that apply to light,

medium, and heavy-duty vehicles and $PM_{2.5}$ NAAQS standards.[221] EPA cannot assume that those criteria pollution standards will prevent a "materially adverse impact" if EPA intends to roll them back soon after finalizing this rule. *Cf.* EF Comment at VIII.A (EPA's failure to consider cumulative effects of contemporaneous rules renders the Draft RIA and the Proposal arbitrary and capricious).

Second, EPA's dismissal of the non-GHG pollution benefits from the GHG standards is arbitrary because it "rests upon factual findings that contradict those which underlay its prior policy," and EPA has not provided a "more detailed justification than what would suffice for a new policy created on a blank slate." *Fox Television*, 556 U.S. at 515; *see also Nat'l Cable & Telecomms. Ass'n v. Brand X Internet Servs.*, 545 U.S. 967, 981 (2005); *Organized Vill. of Kake v. U.S. Dep't of Agric.*, 795 F.3d 956, 966–67 (9th Cir. 2015). In its 2024 rules, EPA supported the reasonableness of its standards for light-, medium-, and heavy-duty vehicles by quantifying the benefits of reductions in criteria pollution,[222] finding the benefits to be significant and to exceed the costs. 89 Fed. Reg. at 28,105 ("The benefits for this rule are also significant. The greatest benefits accrue from GHG and PM2.5 emissions reductions"); 89 Fed. Reg. at 29,456 ("The program will result in significant social benefits including … estimated benefits attributable to changes in emissions of PM2.5 precursors."). EPA's prior findings of significant criteria pollutant reductions from prior rulemakings setting only GHG standards undermine its new suggestion that the proposed elimination of GHG standards would not materially impact criteria pollution. 89 Fed. Reg. at 29,455; 86 Fed. Reg. 74,491–92 (Tables 36 & 37); *see also* 85 Fed. Reg. at 25,111–12 (finding SAFE II rollback of GHG standards would increase criteria pollution). So does EPA's prior finding that the MY 2027–32 light- and medium-duty GHG standards generated distinct $PM_{2.5}$ benefits from the MY2027–32 particulate matter standards. 2024 Multipollutant Rule Resp. to Comments at 1533 ("we are not taking credit for the same PM2.5 reductions from the criteria pollutant controls and the GHG standards; the PM reductions from both programs are incremental to each other and additive."). In fact, every rule prior to

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[221] EPA Press Office, "EPA Announces Action to Implement POTUS's Termination of Biden-Harris Electric Vehicle Mandate" (Mar. 12, 2025), https://www.epa.gov/newsreleases/epa-announces-action-implement-potuss-termination-biden-harris-electric-vehicle (announcing intent to reconsider model year 2027 and later light-duty and medium duty vehicles regulation in its entirety, which includes criteria standards, and reevaluation of the "Clean Trucks Plan," including the "2022 Heavy-Duty Nitrous [sic] Oxide" rule); EPA Press Office, "Trump EPA Announces Path Forward on National Air Quality Standards for Particulate Matter (PM2.5) to Aid Manufacturing, Small Businesses" (Mar. 12, 2025), https://www.epa.gov/newsreleases/trump-epa-announces-path-forward-national-air-quality-standards-particulate-matter. EPA also acknowledges in the Proposal itself that it "may reconsider and propose to revise" these programs in a separate rulemaking. 90 Fed. Reg. at 36,314.

[222] Although EPA disclaims the 2024 regulatory impact analyses, 90 Fed. Reg. at 36,326, EPA included estimated costs and benefits in the preambles to the 2024 rules in addition to those regulatory impact analyses. Further, EPA never asserts in the current rulemaking that assumptions related to criteria pollution impacts have changed. *Id.*

2024 that set GHG emission standards for vehicles analyzed the impacts of GHG standards on criteria air pollutants and air toxics, along with the associated human health benefits and economic value of the change in pollution concentrations. 75 Fed. Reg. at 25,496–531 (MY2012–16 light-duty standards); 77 Fed. Reg. at 62,718, 62,899–912, 62,930-38 (MY2017–25 light-duty standards); 85 Fed. Reg. at 25,039–53, 25,111–14 (MY2021–26 revised light-duty standards); 86 Fed. Reg. at 74,490–92, 74,504–07 (MY2023–26 revised light-duty standards); 76 Fed. Reg. at 57,300–14, 57,333–39 (Phase 1 heavy-duty standards); 81 Fed. Reg. at 73,836–57 (Phase 2 heavy-duty standards).

2) EPA cannot rely on its Draft Regulatory Impact Analysis to claim it considered the criteria emission impacts of repealing its GHG emission standards

EPA expressly disclaims reliance on the draft RIA as justification for the Proposal, 90 Fed. Reg. at 36,326, so the purported criteria pollution costs or benefits in that document cannot support its passing suggestion that GHG standards may harm air quality, *id.* at 36,313. To the extent EPA does rely on the draft RIA, such reliance would be arbitrary due to the defects in the draft RIA's analysis. *City of Portland v. EPA*, 507 F.3d 706, 713 (D.C. Cir. 2007) (courts "will [not] tolerate rules based on arbitrary and capricious cost-benefit analyses"); *Nat'l Ass'n of Home Builders v. EPA*, 682 F.3d 1032, 1040 (D.C. Cir. 2012) ("[W]hen an agency decides to rely on a cost-benefit analysis as part of its rulemaking, a serious flaw undermining that analysis can render the rule unreasonable.").

To begin, the draft RIA's primary cost-benefit analysis, *see* Draft RIA at 21–22, lacks any consideration whatsoever of changes in criteria pollution emissions or monetized costs or benefits in its five scenarios. Appendix A does not discuss the criteria pollution emissions consequences of removing the GHG standards. Although Appendix B's alternative, revealed preference analysis (scenarios 6 and 7) includes a monetized cost for $PM_{2.5}$ emissions increases of $2.2 to $4.2 billion, that value is woefully underexplained, and the reasoning EPA does offer in Appendix B is arbitrary. First, EPA looks at only direct $PM_{2.5}$ emissions from tailpipe exhaust without acknowledging, as it repeatedly has in past rulemakings, that there are other criteria impacts associated with GHG standards, including other tailpipe criteria emissions (particularly NOx and SOx, which are precursors to PM), as well as upstream emissions from refineries and electricity generating units (EGUs). *See, e.g.*, 89 Fed. Reg. at 28,118–19; 89 Fed. Reg. at 29,711. Second, EPA does not explain how it reached the numbers in Appendix B beyond stating that they were calculated to be less than "the $10 billion PM2.5 cost-reduction reported in the 2024 LMDV rule" due to (1) LMDV criteria pollutant standards being unchanged by the Proposal, and (2) "emissions offsets in vehicle markets" amounting to half of the CO_2 reductions being "leaked" to foreign countries or "a part of the U.S. that does not affect U.S. health." Draft RIA at 42; *see also id.* at 61, 34–35.

EPA's first point—that the Proposal makes no change to criteria pollutant standards—is misleadingly incomplete because EPA has changed its approach for assigning dollar value to PM reductions from its standards. Although not transparent in the draft RIA itself, the Appendix B

Supporting Materials spreadsheet reveals that EPA *did* significantly change its methodology for measuring the $PM_{2.5}$-related health impacts associated with GHG standards. In prior rulemakings subject to extensive peer review and public comment, EPA used a "benefits-per-ton" approach: EPA first estimated the change in criteria and air toxics emissions in physical units (e.g., 1,000 tons of $PM_{2.5}$ reduced), then assigned each ton of reduced $PM_{2.5}$ a monetized benefit reflecting the premature deaths and illnesses expected to be avoided as a result of reductions in both directly-emitted $PM_{2.5}$ and $PM_{2.5}$ precursors from the standards. 2024 Multipollutant Rule RIA at 6-54; NHTSA, Final Reg. Impact Analysis: The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for MY2021 – 2026 Passenger Cars & Light Trucks (Mar. 2020) (SAFE II RIA), at 1281. But in the draft RIA, EPA instead assigned to each ton of tailpipe CO_2 an $18 health cost for $PM_{2.5}$ supposedly associated with that ton; EPA then applied that assumed $18/ton CO_2 to the CO_2 tailpipe emissions associated with assumed stock and utilization levels for a created list of light-duty "vintages" through time. The spreadsheet does not analyze changes in $PM_{2.5}$ emissions in physical units. Instead, the draft RIA notes the "impact of the proposed action on worldwide PM emissions (PM2.5) is assumed to be proportional to its impact on GHG emissions," Draft RIA at 61—an assumption which contradicts EPA's characterization of emissions impacts in the Proposal as "marginal and incidental," 90 Fed. Reg. at 36,328. There is no explanation for why the Appendix B analysis does not consider medium and heavy-duty vehicles' emissions, why the health cost of $PM_{2.5}$ is assumed to be proportional to the change in tailpipe CO_2 emissions, why the value of the $PM_{2.5}$ health cost is $18 per ton of CO_2, or how that $18 per ton of CO_2 assumption compares to the detailed pollutant-specific benefit-per-ton values estimated in the 2024 rules. *See* 2024 Multipollutant Rule RIA at 6-54 to 6-55; Phase 3 HD Rule RIA at 771–72.

Even without these details, it is clear that the approach in Appendix B and the Appendix B Supporting Materials to estimate health impacts is a significant departure from EPA's prior approach. The draft RIA's explanation that PM emissions are "assumed to be proportional to" GHG emissions skips the step of separately assessing changes in PM emissions and appears to omit impacts of secondary PM formation from NOx and SO_2. Upstream impacts from EGUs or refineries are not mentioned. The use of a single damage function for $PM_{2.5}$ across all analyzed on-road vehicles is inconsistent with prior rulemakings, which use different values by source and pollutant for light-duty gasoline cars, light-duty gasoline trucks, light-duty diesel cars/trucks, EGUs, and refineries, because "different pollutant emissions do not equally contribute to ambient $PM_{2.5}$ formation and different emission sources do not equally contribute to population exposure and associated health impacts." 2024 Multipollutant Rule RIA at 6-54. The benefits-per-ton approach used in prior rulemakings accounts for a "cessation lag" or latency period, which is the expected time lag between changes in pollutant exposure in a given year and the total realization of health effect benefits, noting that "[t]he time between exposure and diagnosis can be quite long, on the order of years to decades, to realize the full benefits of the air quality

improvements."[223] For this reason, the benefits-per-ton values used in prior rulemakings are greater in the future—even using a 7% discount rate—because the full benefits of reducing air pollution today take years to materialize. 2024 Multipollutant Rule RIA at 6-55. EPA's use in the Appendix B Supporting Materials of a single damage function that is constant in time ignores the cessation lag, inappropriately lumps all vehicle segments together, fails to consider damages from $PM_{2.5}$ precursors, and fails to consider upstream impacts from EGUs and refineries.

Because EPA elected not to analyze any upstream criteria pollution impacts, EPA does *not* claim—neither in the Proposal, nor in the draft RIA—that the repeal of GHG standards will reduce PM emissions from EGUs based on a decrease in EV charging demand. Nor could the agency: the draft RIA in fact predicts enormous increases in EGU operations unrelated to EVs, *infra* Part IV.B.5, and the administration's pro-fossil-fuel agenda (its true motive for the Proposal) means these EGUs will run dirtier and more often, EF Comment Section VI.D.2. In any case, EPA has given no notice of such a rationale.

Given these gaps and contradictions in the analysis, it is not clear how EPA incorporated its assumption that the criteria pollutant standards will be "unchanged" by the Proposal. Draft RIA at 42. As noted above, EPA had information necessary to transparently and accurately calculate the criteria pollutant costs associated with repealing the GHG standards but instead obscured the minimal analysis it did conduct and appears to have tainted the analysis with an unexplained, arbitrary assumption about the health costs of criteria pollutants. *See Owner-Operator Indep. Drivers Ass'n v. Fed. Motor Carrier Safety Admin.*, 494 F.3d 188, 206 (D.C. Cir. 2007) (vacating regulatory provisions because the cost-benefit analysis supporting them was based on an unexplained methodology).

EPA's second point—that "half of the reduction of fossil-fuel use by U.S. vehicles … is offset by increased fossil-fuel use elsewhere in the world economy," Draft RIA at 42—is also unreasonable. EPA does not use any methodology or cite to any research to support its 50% assertion. Instead, EPA makes the entirely theoretical and unsupported assertion that a reduction in domestic fossil fuel usage associated with the federal GHG program would, by depressing global fuel prices, lead to additional fossil fuel usage elsewhere. This abstract and unsupported speculation about "leakage" effects is especially problematic because it undervalues the costs of EPA's action.[224] While EPA claims it is not quantifying the effects of leakage on $PM_{2.5}$

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[223] EPA, *Estimating PM2.5-and Ozone-Attributable Health Benefits: Technical Support Document (TSD) for the 2022 PM NAAQS Reconsideration Proposal RIA* (2023), at 91, EPA-HQ-OAR-2023-0072-0075.

[224] *See Bus. Roundtable v. SEC*, 647 F.3d 1144, 1148–49 (D.C. Cir. 2011) (agency acted arbitrarily and capriciously where it "inconsistently and opportunistically framed the costs and benefits of [a] rule; failed to adequately quantify the certain costs or to explain why those costs could not be quantified; neglected to support its predictive judgments; [and] contradicted itself" in the course of its analysis); *Ctr. for Biol. Diversity v. NHTSA*, 538 F.3d 1172, 1198 (9th Cir. 2008) (agency "cannot put a thumb on the scale by undervaluing the benefits and overvaluing the costs").

emissions because it assumes offsets will occur "outside the U.S., or in a part of the U.S. that does not affect U.S. health," it is inappropriate to invoke the leakage effect as part of the explanation as to why the costs related to criteria pollution are less than "the $10 billion $PM_{2.5}$ cost-reduction reported in the 2024 LMDV rule," Draft RIA at 42.

EPA has noted in prior rulemakings that there are "enormous, likely insuperable, practical difficulties" in trying to perform analyses (and make assumptions based on those analyses) without sufficient data or where analyses are "dependent on factors outside the scope of the rulemaking that may change in the future." 2024 Multipollutant Rule Resp. to Comments at 3268. EPA also explained that its past approach of excluding a leakage assumption and focusing on direct and upstream emissions "represents a reasonable balance between considering indirect effects of the rule on emissions and limiting that consideration to reasonably proximate and predictable effects. Because [EPA] lack[s] the data and capacity to predict every indirect effect of the rule throughout the supply chain and the broader economy, we judge that by examining the upstream emissions of EGUs and refineries we have taken into consideration the most significant indirect effects of the rule on air quality." *Id.* at 1843. EPA's previous analytical humility was especially appropriate when applied to the highly complex global market for fossil fuels, which is constantly shifting based on myriad factors, including the production decisions of producing nations, wars, other nations' electrification plans, developments in technology, and global economic conditions. EPA may not make baseless assumptions about market leakage to support a claim that it considered the criteria emission impacts of repealing its GHG emission standards, and cannot quantify such unknown, indirect effects. EPA's assumption of emissions leakage is particularly arbitrary in ignoring the well-established technology spread (beneficial "leakage") wherein innovation in emission standards and emission-reducing technologies in U.S. markets spreads to other international markets and achieves additional emission reductions there.[225]

3) EPA's own modeling contradicts the criteria emissions analysis in the Proposal and Draft Regulatory Impact Analysis and indicates the Proposal will have major criteria emissions impacts

EPA's consideration of the criteria emissions impacts of the Proposal is also arbitrary and capricious because there are conflicting analyses throughout the rulemaking docket. In particular,

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[225] C. Jenks et al., MJ Bradley & Assoc., *California Transportation Policy Leadership: How California Led the World Toward Cleaner, Advanced Vehicles* (Oct. 2018), at 3–4, 8, 11–12, https://www.erm.com/globalassets/documents/mjba-archive/reports/2018/mjba_california_transportation_policy_leadership_october2018.pdf; R. Perkins & E. Neumayer, "Does the 'California effect' operate across boarders? Trading- and investing-up in automobile emission standards," *J. of European Public Policy* 19:2 (2011), at 217–37, https://doi.org/10.1080/13501763.2011.609725; *see also* 22 U.S.C. § 7905(a)(1) (initiative to promote the export of "greenhouse gas intensity reducing technologies and practices" from the United States).

EPA's own modeling in the "Vehicle Rule LD/MD/HD Physical Effects" document appears to conflict with the analysis in the Proposal and draft RIA. EPA provides no explanation for what this document is and how EPA is using it. In some ways, the document provides a much more realistic assessment of criteria pollution impacts. For example, the document provides estimates of the Proposal's impact on criteria pollutant emissions from vehicles and upstream EGUs and refineries. In other ways, the document is still deficient because it does not include heavy-duty criteria emissions or estimate the health impacts associated with the emissions.[226]

The Physical Effects document shows that total direct $PM_{2.5}$ emissions from light- and medium-duty vehicles would increase each year, with 81 additional tons in 2027 growing to an additional 8,900 tons in 2055, compared to a No Action case in which the GHG standards for light- and medium-duty vehicles are retained. EPA Physical Effects at 9, 22. It is not clear how these numbers relate to the numbers in the draft RIA, but they contradict the Proposal's claim that changes in criteria pollutants would be "marginal and incidental." 90 Fed. Reg. at 36,328. As a point of comparison, in its revised MY2023–26 light-duty vehicle GHG emissions standards, which EPA promulgated in 2021, EPA noted that there were "substantial PM2.5-related health benefits associated with the non-GHG emissions reductions" of the rule, and those $PM_{2.5}$ emission reductions were 1,161 tons in 2050—less than 14% of the 8,900 additional tons in 2055 noted in the Physical Effects document. 86 Fed. Reg. at 74,445, 74,492.

The health impacts of these emissions are not assessed in the Physical Effects document. However, one can use the same benefit-per-ton (BPT) approach developed in prior EPA rulemakings to estimate the $PM_{2.5}$ health costs it attributes to the Proposal. The BPT approach estimates the monetized economic value of $PM_{2.5}$-related emission reductions or increases (from direct PM and PM precursors NOx and SO_2) resulting from a regulation. The BPT approach monetizes the health benefits of avoiding one ton of $PM_{2.5}$-related emissions from a particular on-road mobile or upstream source and can also be used in reverse to estimate the health costs of increasing emissions by one ton.

The value of the health costs from increasing $PM_{2.5}$ emissions associated with the Proposal can be estimated by multiplying the $PM_{2.5}$-related BPT values by the corresponding annual increase in tons of directly-emitted $PM_{2.5}$ and $PM_{2.5}$ precursor emissions (NOx and SO_2) reported in the Physical Effects document. This analysis uses the same mobile sector BPT values

[226] EPA has not provided sufficient information for commenters to understand the assumptions underlying the Physical Effects document. Given the large criteria emission increases detailed in the document, the actions modeled in that document may be different than the actions described in the Proposal and draft RIA. If EPA is eliminating the MY2027–32 criteria pollution standards in the Physical Effects document analysis, the Physical Effects analysis may be *more* accurate than the draft RIA analysis, as EPA has elsewhere said it will reconsider the criteria pollution standards that it purports to retain in the Proposal and draft RIA. EPA's consideration of criteria emissions impacts is arbitrary and capricious in any case because EPA has not properly notified the public of its approach or explained how it is reconciling conflicting analyses in the rulemaking docket.

that were used in the 2024 Multipollutant Rule. 2024 Multipollutant Rule RIA at 6-55 (Table 6-3). A chief limitation to using $PM_{2.5}$-related BPT values is that they do not account for costs associated with increasing ambient ozone concentrations,[227] or for increases in direct exposure to NO_2 and air toxics or for deteriorated ecosystem effects or visibility. The estimated health costs of the Proposal would be larger if those costs were monetized.

TABLE 1

Calendar Year	Total Onroad				Total Upstream				Total Costs			
	3% Discount Rate		7% Discount Rate		3% Discount Rate		7% Discount Rate		3% Discount Rate		7% Discount Rate	
	Wu	Pope	Wu	Pope	Wu	Pope	Wu	Pope	Wu	Pope	Wu	Pope
2027	0.102	0.21	0.09	0.19	-0.029	-0.060	-0.026	-0.054	0.073	0.15	0.065	0.14
2028	0.28	0.57	0.25	0.52	-0.097	-0.20	-0.087	-0.18	0.18	0.37	0.16	0.34
2029	0.50	1.03	0.45	0.93	-0.16	-0.32	-0.14	-0.29	0.35	0.71	0.31	0.64
2030	0.82	1.7	0.74	1.5	-0.23	-0.46	-0.20	-0.42	0.59	1.2	0.53	1.1
2031	1.4	2.8	1.3	2.6	-0.35	-0.69	-0.31	-0.62	1.1	2.1	0.96	2.0
2032	1.8	3.6	1.6	3.3	-0.40	-0.80	-0.36	-0.72	1.4	2.8	1.3	2.6
2033	2.3	4.6	2.1	4.2	-0.43	-0.85	-0.38	-0.77	1.9	3.7	1.7	3.4
2034	2.8	5.6	2.5	5.1	-0.40	-0.79	-0.36	-0.71	2.4	4.8	2.1	4.3
2035	3.3	6.5	2.9	6.0	-0.33	-0.65	-0.30	-0.59	3.0	5.9	2.7	5.4
2036	4.1	8.1	3.7	7.4	-0.29	-0.56	-0.26	-0.50	3.8	7.5	3.5	6.8
2037	4.7	9.2	4.2	8.4	-0.19	-0.37	-0.17	-0.33	4.5	8.8	4.0	8.0
2038	5.3	10.4	4.8	9.5	-0.089	-0.16	-0.079	-0.15	5.2	10.3	4.7	9.3
2039	5.9	11	5.3	10.5	0.032	0.077	0.030	0.068	5.9	12	5.3	10.5
2040	6.4	13	5.8	11	0.16	0.34	0.15	0.30	6.6	13	5.9	12
2041	7.5	14	6.8	13	0.25	0.52	0.23	0.46	7.8	15	7.0	14
2042	8.0	15	7.2	14	0.38	0.77	0.34	0.69	8.4	16	7.5	15
2043	8.4	16	7.5	15	0.43	0.88	0.39	0.78	8.8	17	7.9	15
2044	8.7	17	7.8	15	0.57	1.2	0.52	1.04	9.3	18	8.3	16
2045	9.1	17	8.2	16	0.63	1.3	0.56	1.1	9.7	19	8.7	17
2046	10.1	19	9.0	17	0.74	1.5	0.67	1.3	11	21	9.7	19
2047	10.3	20	9.3	18	0.77	1.5	0.69	1.4	11	21	9.9	19
2048	10.6	20	9.5	18	0.81	1.6	0.73	1.5	11	22	10.2	20
2049	11	20	9.6	19	0.86	1.7	0.78	1.6	12	22	10.4	20
2050	11	21	9.8	19	0.89	1.8	0.80	1.6	12	23	11	21
2051	12	23	11	21	0.89	1.8	0.80	1.6	13	24	12	22
2052	12	23	11	21	0.89	1.8	0.80	1.6	13	24	12	22
2053	12	23	11	21	0.89	1.8	0.80	1.6	13	25	12	22
2054	12	23	11	21	0.88	1.8	0.80	1.6	13	25	12	23
2055	12	23	11	21	0.88	1.8	0.79	1.6	13	25	12	23
Present Value	110	220	53	100	3.3	6.7	0.52	1.1	120	220	53	100
Annualized Value	6.0	12	4.3	8.5	0.18	0.35	0.043	0.087	6.2	12	4.4	8.6

[227] To address this limitation, in 2024, EPA also conducted air quality modeling for the year 2055 that accounted for ozone-related health impacts. 2024 Multipollutant Rule RIA at 7-53. In its current proposal, EPA has not conducted any such air quality modeling.

Table 1 above presents the annual $PM_{2.5}$-related health costs estimated for the years 2027 through 2055. Costs are presented by source (on-road and upstream) and are estimated using either a 3% or 7% discount rate, consistent with EPA's analysis in the draft RIA, to account for annual negative health outcomes that are expected to accrue over more than a single year. Costs are based on risk estimates reported from two different long-term exposure studies using different cohorts to account for uncertainty in the costs associated with increased PM-related premature deaths. The total annualized value (2024 dollars) of $PM_{2.5}$-related costs for the Proposal between 2027 and 2055 (discounted back to 2027) is $6.2 to $12 billion assuming a 3% discount rate and $4.4 to $8.6 billion assuming a 7% discount rate.

These significant annualized $PM_{2.5}$ health costs associated with the Proposal contradict Appendix B's unsupported assertion that such costs will be $2–4 billion annually, Draft RIA at 42—indeed, EPA's $PM_{2.5}$ projections indicate those costs would be *two to three times that amount*—and certainly contradict the Proposal's dismissive suggestion that these costs will be "only marginal and incidental," 90 Fed. Reg. at 36,328.

c. Impacts to vulnerable communities

EPA's Proposal likewise omits from its consideration of public health and welfare any analysis of GHG standards' benefits for particularly vulnerable subpopulations, such as low-income communities, older adults, and historically overburdened communities, contrary to past practice under an unbroken succession of administrations. That omission is also arbitrary.

In its 2009 Endangerment Finding, EPA's consideration of GHG emissions' effects on public health and welfare included analysis of risks to various populations and communities. Upon reviewing the evidence, EPA concluded that "vulnerable subpopulations," such as lower-income communities, older adult populations, people with disabilities, and indigenous communities, "face serious health risks as a result of climate change." 74 Fed. Reg. at 66,506; *see id.* at 66,534; EPA, Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act (2009), at 129–30 (explaining EPA's findings and citing scientific evidence). These findings factored into and supported EPA's determination that GHG emissions from vehicles endangered public health and welfare. 74 Fed. Reg. at 66,506, 66,534.

In all relevant rulemakings since the 2009 Endangerment Finding, EPA has reaffirmed and further elucidated its conclusions that GHG emissions—and GHG and co-pollutant emissions from vehicles in particular—endanger public health and welfare due to their disproportionate harms to certain especially vulnerable subpopulations and communities. In promulgating its 2010 light-duty vehicle standards for MY2012–16, its 2011 Phase 1 heavy-duty vehicle standards, and its 2012 light-duty vehicle standards for MY2017–25, EPA determined that vehicle emissions induced health disparities, particularly for lower-income communities, older adults, and people with disabilities. *See* 75 Fed. Reg. at 25,493; 76 Fed. Reg. at 57,297; 77 Fed. Reg. at 62,961. EPA also found that heatwaves caused by vehicle GHG emissions had disproportionate effects on certain communities, and that indigenous populations suffered particular harm from climate change. *See* 75 Fed. Reg. at 25,493. EPA further concluded that

pollutant exposures near roadways fall unevenly on various vulnerable subpopulations, such as individuals with low socioeconomic status and certain ethnicities. 75 Fed. Reg. at 25,504–05; 76 Fed. Reg. at 57,309–10; 77 Fed. Reg. at 62,908; *see also* Final Rulemaking to Establish Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, Regulatory Impact Analysis (2010), at 7-15 to 7-17.

In the 2016 Endangerment Finding, EPA reaffirmed this methodology, determining that "the Administrator is to consider the risks to all parts of our population, including those who are at greater risk for reasons such as increased susceptibility to adverse health and welfare effects. If vulnerable subpopulations are especially at risk, the Administrator is entitled to take that point into account in deciding the question of endangerment." 81 Fed. Reg. at 54,435. On the substantive issues, EPA cited additional research to expand upon its prior determination that climate change's disproportionate effects on certain populations supported its Endangerment Finding. Specifically, EPA found that "certain populations … are most vulnerable to climate change-related health effects," and that "[t]he new assessment literature strengthens these conclusions and further supports an endangerment finding." *Id.* at 54,454–55. On GHG emissions' effects on "welfare," EPA concluded that "climate change impacts related to welfare are expected to be unevenly distributed across different regions of the United States and are expected to have a greater impact on certain populations, such as indigenous peoples and the poor." *Id.* at 54,458. That same year, EPA's heavy-duty vehicle standards for model years 2018-2027 reiterated and built on earlier findings, with new analysis of unequal pollutant exposures near roadways that confirmed its prior conclusions. 81 Fed. Reg. at 73,845–47.

EPA under the first Trump Administration substantially expanded its analysis of vehicle emissions' disproportionate impacts. While the SAFE II Rule reduced the stringency of vehicle emission standards, EPA presented extensive evidence that the harms of GHG and co-pollutant emissions from vehicles fall unequally on certain subpopulations and communities. 85 Fed. Reg. at 25,257–62. In particular, EPA summarized research showing that particular subpopulations are more vulnerable to the urban heat island effect, flooding and sea level rise, natural disasters, heat exposure, and other effects of climate change. *Id*. at 25,261–62. EPA also explained that lower income and certain non-white individuals are more likely to live near oil production and refining and major highways, resulting in disproportionate exposure to air pollution. *Id*. at 25,258–61. EPA further found that many communities suffer greater harm from GHG and co-pollutant emissions because they have less access to health care, limited air conditioning, and higher energy costs. *Id*. at 25,261. Indigenous communities, EPA also found, face unique challenges from climate change. *Id*. at 25,261–62.

Next, EPA in its 2021 light-duty vehicle standards rule for MY2023–26 updated the 2009 Endangerment Finding's discussion of disproportionate impacts with "[s]cientific assessment reports produced over the past decade." 86 Fed. Reg. at 74,515. Reviewing the evidence, EPA concluded that the reports "add more evidence that the impacts of climate change raise potential environmental justice concerns," and that "poorer or predominantly non-White communities can be especially vulnerable to climate change impacts because they tend to have limited adaptive

capacities and are more dependent on climate-sensitive resources such as local water and food supplies, or have less access to social and information resources." *Id.*; *see id.* at 74,514–17.

Most recently, EPA reaffirmed and expanded its analysis in its 2024 rules establishing MY2027–32 emissions standards for light-, medium-, and heavy-duty vehicles. EPA once again found strengthened evidence for disproportionate adverse impacts from emissions to certain subpopulations and communities. 89 Fed. Reg. at 29,692 ("There is evidence that communities with EJ concerns are disproportionately and adversely impacted by heavy-duty vehicle emissions."); *id.* at 29,693 ("The assessment literature cited in EPA's 2009 and 2016 Endangerment and Cause or Contribute Findings, as well as *Impacts of Climate Change on Human Health*, also concluded that certain populations and life stages, including children, are most vulnerable to climate-related health effects. The assessment literature produced from 2016 to the present strengthens these conclusions by providing more detailed findings regarding related vulnerabilities and the projected impacts youth may experience."); 89 Fed. Reg. at 28,134 ("[C]ommunities with EJ concerns are disproportionately and adversely impacted by relevant non-GHG emissions."); *see generally* 89 Fed. Reg. at 28,130–36; 89 Fed. Reg. at 29,691–97. Finally, EPA conducted a quantitative study to demonstrate the magnitude of the disproportionate adverse effects on particular groups. 2024 Multipollutant Rule RIA at 7-54 to 7-65.

Despite EPA's consistent findings across every past rulemaking that vehicles' GHG emissions endanger public health and welfare because, among other things, the harms from these emissions fall disproportionately on certain subpopulations or communities, the Proposal omits any consideration of these factors. EPA's failure to acknowledge—much less explain—its change of position is arbitrary and capricious. *See Fox Television*, 556 U.S. at 515–16. Additionally, the Proposal fails to consider an important aspect of the problem—that the harms from GHG and co-pollutant emissions are unequally distributed, as certain subpopulations and communities bear a disparate share of and are particularly vulnerable to those emissions' adverse impacts. *See State Farm*, 463 U.S. at 43.

2. Vehicle affordability

EPA's proposed conclusion that GHG emission standards "harm public health and welfare by increasing prices," 90 Fed. Reg. at 36,291, is arbitrary and capricious. EPA found in previous rulemakings that the impacts of GHG standards on vehicle prices were well within what Congress contemplated in enacting Section 202. Acknowledging that automakers were expected to favor EV production as a compliance strategy, EPA examined EVs' affordability specifically and found they were rapidly reaching price parity with their internal combustion-engine (ICE) counterparts. In fact, EPA found many EVs were more affordable than ICE equivalents when their total cost of ownership was considered. The Proposal's opposite conclusion gives no regard to those prior findings and offers no new analysis or data to justify its conclusion. Nor can EPA rely on its cost-benefit analysis in the draft RIA, which is itself irrational and arbitrary, premised on unsupported numbers, double-counting, and other fatal analytical flaws.

a. The Proposal contradicts prior findings on vehicle affordability without any justification

In the 2024 Multipollutant Rule, EPA found that the regulatory burdens imposed by the GHG standards, Tier 4 criteria standards, and air toxics standards were "reasonable and not different in kind from prior exercises of EPA's authority under section 202," and that the average per-vehicle compliance costs for regulated entities "fall within the range of prior rules" and were "small relative to what Congress itself accepted in enacting section 202." 89 Fed. Reg. at 27,899. EPA further considered the upfront costs of purchasing cleaner vehicles relative to the cost of operating such vehicles over their lifetime and found that "lower operating costs for vehicles substantially outweigh the increased technology costs of meeting the standards over the life of the vehicles." *Id.* The price difference for battery-electric vehicles relative to ICE vehicles was "widely expected to narrow or disappear as the cost of batteries and other components fall in the coming years," and an "emerging consensus" suggested that purchase price parity between battery-electric vehicles and ICE vehicles was "likely to begin occurring by the mid- to late-2020s for some vehicle segments and models, and for a broader segment of the market on a total cost of ownership" basis. 89 Fed. Reg. at 27,991. Considering all the costs of ownership, EPA found that "[m]any expect [total cost of ownership] parity to precede price parity by several years, as it accounts for the reduced cost of operation and maintenance for" battery-electric vehicles, pointing to evidence from multiple sources that battery-electric vehicles had already attained a lower total cost of ownership than comparable ICE vehicles. *Id.*

In the Phase 3 HD Rule, EPA similarly found that the final standards would be "beneficial for purchasers" because the "lower operating costs during the operational life of the vehicle [would] offset the increase in vehicle technology costs within the usual period of first ownership of the vehicle." 89 Fed. Reg. at 29,592. EPA also performed a total-cost-of-ownership analysis of battery-electric vehicles and fuel-cell electric vehicles from a purchaser's perspective, concluding that for all such vehicles, the cost of owning and operating a MY2032 vehicle would be lower than a comparable ICE vehicle. *Id.* "In fact, all vehicles show[ed] several thousands of dollars in net [total cost of ownership] savings at the five-year point." *Id.*

In proposing now that GHG standards "harm public health and welfare by increasing prices," 90 Fed. Reg. at 36,291, EPA fails to engage with these prior findings at all. That failure to even acknowledge its change in position is arbitrary and capricious. *Fox Television*, 556 U.S. at 515 (agency must "display awareness that it *is* changing position"). And far from providing the "more detailed justification" required to support a policy that "rests upon factual findings that contradict those which underlay its prior policy," EPA provides no justification at all. *Id.* That too is arbitrary and capricious. *Id.*

Indeed, while the Proposal rests on an implicit factual finding that GHG standards increase prices, the Proposal offers no analysis at all to support that contention. In place of data or modeling, EPA offers a stack of hypotheticals:

> Complying with our GHG emission standards often requires manufacturers to design and install new and more expensive

> technologies, thereby increasing the price of new vehicles and reducing consumer demand. More expensive new vehicles are cost prohibitive for some consumers … . We also note that commercial vehicle owners and fleet operators may incur additional costs associated with ongoing compliance obligations under the GHG standards for an applicable model year, including testing and reporting requirements that are reflected in the total cost of ownership but not necessarily the vehicle price.

90 Fed. Reg. at 36,312–13. That is, EPA posits that compliance with GHG standards might entail manufacturer costs, which might be passed down to consumers as higher vehicle prices, which might be high enough to be cost-prohibitive for some consumers, and that testing and reporting requirements might impose additional costs. This is, incredibly, all the Proposal itself has to offer to support its core premise that GHG standards harm vehicle affordability.

Take each of those assumptions in turn, and EPA's failure to "examine the relevant data and articulate a satisfactory explanation for its action" becomes all too apparent. *State Farm*, 463 U.S. at 43. EPA performs no new analysis of automakers' technology costs under either existing GHG standards or its proposed repeal of standards. In fact, the technology costs EPA projected in the 2024 Multipollutant Rule and Phase 3 HD Rule are already outdated because battery costs have decreased more rapidly than EPA's most optimistic modeling anticipated. Kenneth Gillingham & Alan Jenn, Analysis of EPA's Proposed Repeal of Greenhouse Gas Standards for Light-, Medium-, and Heavy-Duty Vehicles (Sept. 22, 2025), at 8–10 (Gillingham-Jenn); *infra* Part IV.B.2.b.1. EPA never examines the extent to which automakers pass down technology costs to consumers in higher purchase prices, despite previously stating automakers may instead absorb some costs. 89 Fed. Reg. at 28,108. Even assuming automakers pass on all those costs as higher prices, EPA never performs new analysis of how high those price increases are, under either existing GHG standards or its proposed repeal. Nor does it examine other aspects of any vehicles' total cost of ownership, most notably, the massive consumer savings in fuel and maintenance that cleaner vehicles provide. Gillingham-Jenn 14; *see also id.* at 19–20 (explaining Proposal will decrease affordability of ICE vehicles by raising gasoline prices).

Finally, even if GHG standards did increase vehicle prices when they were first introduced, that does not provide a rational justification for retroactively repealing standards for model years that have passed, since automakers have already expended whatever resources they needed to bring their fleets into compliance. EPA does not explain how, given that automakers are already in compliance with MY2012–25 standards, repealing those standards could cause any decrease in or mitigation of vehicle prices whatsoever. Without such an explanation, EPA's conclusion that repealing the standards is justified in terms of vehicle prices is "a clear error of judgment" and "so implausible that it could not be ascribed to a difference in view or the product of agency expertise." *State Farm*, 463 U.S. at 43.

Although EPA provides a draft regulatory impact analysis, it disclaims reliance on the draft RIA to support its conclusion on vehicle prices. 90 Fed. Reg. at 36,326 ("The EPA has not relied upon any aspect of the draft RIA as justification for this proposed rulemaking."). By its own terms, then, the Proposal's premise of GHG standards increasing vehicle prices is entirely

unsupported. And because that premise is also the premise for its proposed conclusions on fleet turnover, consumer choice, and economic opportunity, those too are unsupported. *See id.* at 36,312–13.

b. The draft RIA's flawed analyses of manufacturer costs and fuel savings cannot support the Proposal

Even if EPA were to rely on the draft RIA to support its findings on vehicle prices—as it has expressly disclaimed doing—such reliance would be arbitrary and capricious. Although the draft RIA performs no analysis of vehicles' purchase prices or total cost of ownership, the draft RIA does purport to analyze the overall costs and benefits of the proposed action, and in doing so, assigns estimates to components of vehicles' total cost of ownership, including manufacturer costs and fuel savings. However, the draft RIA's analysis is unsupported, internally inconsistent, and arbitrary. Nor can the draft RIA superficial reference to the repeal of certain Inflation Reduction Act tax credits justify its arbitrary underestimation of the GHG program's benefits to consumers and vehicle affordability.

1) Manufacturer technology costs

The draft RIA arbitrarily assigns all of the technology costs projected in the 2024 Multipollutant Rule to the GHG standards, while assuming perfect compliance with the criteria standards also prescribed in the 2024 Multipollutant Rule. Either that drastically overstates the cost savings attributable to repealing the GHG program, or the Proposal drastically understates its impact on criteria pollution. Moreover, by failing to update its 2024 analyses of technology costs, EPA fails to capture the fall in battery costs over the last year, significantly overstating the saved technology costs of repealing the GHG standards.

The draft RIA's sole analysis of automakers' technology costs is to reproduce the technology cost estimates from the 2024 Multipollutant Rule and Phase 3 HD Rule. Draft RIA at 26.[228] Essentially, EPA assumes that repealing the GHG program will eliminate the same vehicle technology costs projected from the adoption of the 2024 Multipollutant Rule and Phase 3 HD Rule. *Compare* Draft RIA at 26 *with* 2024 Multipollutant Rule RIA at 9-22 *and* Phase 3 HD Rule RIA at 930. But the 2024 Multipollutant Rule also prescribed Tier 4 criteria standards for NOx and non-methane organic gases (NMOG), among others. 89 Fed. Reg. at 27,854, 27,857. That "NOx+NMOG" standard, like the GHG standards, is a fleet-average standard, and EPA in 2024 projected that automakers would comply with both the NOx+NMOG and GHG standards by producing more EVs, plug-in hybrids, and strong hybrids. 89 Fed. Reg. at 28,061. This means that the technology costs associated with the 2024 Multipollutant Rule—reproduced in the draft RIA—represent the cost of *both* GHG and NOx+NMOG compliance. However, the Proposal

[228] Subsequent scenarios iterate on these 2024 estimates by removing IRA tax credits and California's Advanced Clean Trucks standards, but "[a]ll other assumptions and inputs remain the same." Draft RIA at 26–27.

targets *only* GHG emission standards. EPA claims that the proposed action "would not impact … emission standards for criteria pollutants," will not "have a material adverse impact on the health of individuals with respect to non-GHG air pollutants," and will have "only marginal and incidental impacts on the emission of non-GHG air pollutants." 90 Fed. Reg. at 36,328, 36,290.

Thus, EPA arbitrarily assigns all the non-GHG health and welfare benefits from the 2024 Multipollutant Rule to its criteria standards, while assigning all the technology costs of the Multipollutant Rule to the GHG standards. In reality, the technology savings of the Proposal (and any downstream effect on vehicle prices) are likely overstated because automakers will continue to invest in zero-emission vehicles or other advanced emission control technologies under the 2024 Multipollutant Rule's criteria standards. Alternately, if the technology savings are not overstated, automakers will not be able to comply with the 2024 Multipollutant Rule and the Proposal will have significant impacts on NOx and hydrocarbon emissions, contrary to what EPA represents in the Proposal. Regardless, EPA's analysis in the draft RIA is arbitrary and capricious. Counting the costs of the prior rules as "savings" under the repeal while relying on the benefits of those rules in justifying the proposed action is internally inconsistent. *NRDC v. U.S. Nuclear Regulatory Comm'n*, 879 F.3d 1202, 1214 (D.C. Cir. 2018) ("Of course, it would be arbitrary and capricious for the agency's decision making to be 'internally inconsistent.'").

Moreover, substantial data indicates EV prices and total cost of ownership continue to fall relative to ICE vehicle prices, driven by falling battery prices and greater economies of scale. Gillingham-Jenn 8–14. While the 2024 Multipollutant Rule included projections of declining battery costs due to improvements in battery manufacturing, pack design, and cell construction, 89 Fed. Reg. 27,995-28,006, those projections *under*estimated the rate that costs would fall as technology and manufacturing improve. As of 2025, lithium-ion battery costs have already fallen 24% below the 2024 Multipollutant Rule's battery cost projections. Gillingham-Jenn 8. Battery makers and market analysts predict further significant drops: for example, a Goldman Sachs study concluded that battery prices could fall by almost 50% from 2023 to 2026.[229] *Id.* at 8–9. Updated estimates using actual 2025 battery costs and Bloomberg NEF projections show that battery electric vehicle MSRPs are on track to reach parity with their combustion engine counterparts over the regulatory period even without consumer subsidies. *Id.* at 10.

By assuming EV costs already known to be significantly too high—and projected to become even more overinflated as battery costs continue to fall—the analysis in EPA's draft RIA "runs counter to the evidence." *State Farm*, 463 U.S. at 43. Scenarios 2, 3, 4, and 5 in the draft RIA also inexplicably exclude the IRA 45X incentive, which has not been sunsetted. Draft RIA at 27; *see Mo. Pub. Serv. Comm'n v. FERC*, 337 F.3d 1066, 1075 (D.C. Cir. 2003) ("Reliance on facts that an agency knows are false at the time it relies on them is the essence of arbitrary and capricious decisionmaking.").

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[229] Goldman Sachs, "Electric vehicle battery prices are expected to fall almost 50% by 2026," *supra* note 69.

Finally, the Proposal does not account for the maturation of the EV market since the 2024 Multipollutant Rule. For decades, automakers have pursued a strategy of developing premium luxury models to build funds and brand image before releasing more affordable models. Gillingham-Jenn 11. Recently, many automakers have debuted new affordable EV models as they move into their next phase. *Id.* at 11–14. Since the 2024 Multipollutant Rule was finalized, for instance, the number of battery electric vehicle models with a starting price below $50,000 has increased by 145%. *Id.* (Table 3) (recently announced mass-market EV models). EPA's "entire[] fail[ure] to consider an important aspect of the problem," namely the current state of the EV market, is arbitrary and capricious. *Genuine Parts Co. v. EPA*, 890 F.3d 304, 307 (D.C. Cir. 2018).

2) Consumer fuel savings

In Appendix A of the draft RIA, EPA offers two scenarios that both show the Proposal as extremely net-negative for society, with the costs of repealing the GHG standards exceeding its benefits by as much as $350 billion. Draft RIA at 22.[230] This, obviously, contradicts EPA's core premise in Section V of the Proposal that GHG standards do more harm than good. 90 Fed. Reg. at 36,291, 36,311. In order to make the repeal of GHG standards look net-beneficial, EPA has to drastically lower the Proposal's disbenefits to consumers from the loss of fuel savings that are associated with cleaner vehicles. EPA does so via two maneuvers: projecting significantly lower gasoline and diesel prices in the future, and cutting off fuel savings altogether after 2.5 years of vehicle ownership. Draft RIA at 20–21, 30–32. The first maneuver, by itself, reduces the social costs of the Proposal by half a trillion dollars; the second, by $730 billion. Draft RIA at 22 (Table 3). In concert, they understate the disbenefits of the Proposal by a whopping $840 billion. *Id.* Each maneuver by itself, or both in concert, flip EPA's result from net-harmful to net-beneficial. Both maneuvers are irrational and unsupported.

First, EPA's projected fuel prices are arbitrarily low. In the 2024 Multipollutant Rule, EPA projected fuel prices using the U.S. Energy Information Administration's Annual Energy Outlook 2023 reference case (AEO 2023). Draft RIA at 7. Since then, the Energy Information Administration released the Annual Energy Outlook 2025 (AEO 2025), with updated fuel projections, and an "Alternative Transportation case," meant to reflect this year's abrupt legal and regulatory changes in clean transportation, which reduces credit eligibility under the IRA and removes the effects of California's Advanced Clean Trucks standard, the 2024 Multipollutant Rule, the Phase 3 HD Rule, and the MY2027-2031 fuel economy standards

[230] EPA assumes in that scenario that Congress sunsets certain IRA tax incentives relevant to EVs, as it largely did in the OBBBA, and that California's Advanced Clean Trucks standards have been rendered unenforceable by Congress's disapproval resolution. Draft RIA at 20, 26–29. *Without* these assumptions, the Proposal's costs still exceed its benefits by $260 billion. Draft RIA at 21 (both under a 3% discount rate). Under all scenarios, any non-zero value assigned to the social cost of carbon, *see* EF Comment Section VIII.B.1, would make the balance of costs and benefits far more negative.

adopted by the National Highway Traffic Safety Administration. *Id.* at 7–8. The draft RIA uses neither of these updated AEO 2025 projections, however. Instead, it subtracts $1 per gallon (for gasoline) and $0.25 per gallon (for diesel) from the AEO 2023 reference case fuel price. Draft RIA at 21, 30. This *sui generis* assumption results in a projection that future gasoline prices for every year for the next 20 years will be lower than even the lowest inflation-adjusted single year since 2000. Gillingham-Jenn 15–16.

Such a dramatic assumption requires justification, but EPA's only explanation for this assumption is that "it does not appear that AEO 2025 took into account the policies being implemented by President Trump that are intended to drive down the price of gasoline and diesel." Draft RIA at 9. The draft RIA does not specify what these policies are, what stage of implementation they are in, how those policies are expected to lower gasoline prices, or any quantitative impact of the price impact of such policies. Gillingham-Jenn 15. *See NRDC v. EPA*, 859 F.2d 156, 210 (D.C. Cir. 1988) ("mere speculation" not "adequate grounds upon which to sustain an agency's action"); *see also U.S. Sugar Corp. v. EPA*, 830 F.3d 579, 650 (D.C. Cir. 2016) ("The EPA had a duty here to examine and justify the 'key assumptions' underlying its decision, and it failed to do so."). Further, assuming the draft RIA refers simply to the stream of executive orders President Trump has issued on energy policy, independent analysts expect these to have a limited effect, if any, on gasoline prices. Gillingham-Jenn 15.

EPA's fuel price projection is not only unsupported and arbitrarily low; it also ignores EPA's own evidence that the Proposal, combined with the removal of the IRA's 30D and 45W tax credits will significantly *raise* gas prices. Gillingham-Jenn 16–18. The draft RIA's graph comparing AEO 2023, AEO 2025, and AEO 2025 "Alt Transportation" shows that the "Alt Transportation" case, with the 2024 Multipollutant and Phase 3 HD standards removed, yields a steady increase in gasoline prices from 2028 to 2050, rather than the decline in gasoline prices reflected in the AEO 2025. Draft RIA at 9. In fact, the increase in prices under the Alt Transportation case grows over time, from 1.8% in 2030 to 29% in 2050. Gillingham-Jenn 18 (Table 4). Both the AEO 2025 and Alt Transportation cases include IRA tax credits that were in place when the analysis was published; independent analyses demonstrate that the removal of the EV tax credits under the OBBBA will increase gas prices even further, equivalent to doubling or even tripling the federal gas tax.[231] *Id.* at 18. By ignoring the impact of these policies, EPA's arbitrarily low choice of fuel prices "runs counter to the evidence before the agency." *State Farm*, 463 U.S. at 43. Moreover, the Proposal's effect on gas prices will impact not only consumers of new ICE vehicles, but *all* gasoline consumers. *See* Gillingham-Jenn 19–20. EPA's "Alt Transportation" case, for instance, increases total domestic expenditure on gasoline by $684

[231] Nor can EPA argue that the effect of the OBBBA on gas prices is cancelled out by its effect on electricity prices. Evidence suggests that the OBBBA and regulatory rollbacks will impact gasoline prices more than they will impact electricity prices. Gillingham-Jenn 18–19. Even if this were not the case, an equivalent increase in electricity and gasoline prices would disproportionately increase fuel costs for ICE vehicles over EVs due to EVs' greater efficiency. *Id.* at 19.

billion to $1.368 *trillion* from 2025 through 2050. *Id.* at 19–20. EPA's failure to account for these costs in evaluating costs to consumers is inconsistent with EPA's prior analyses of vehicle standards and "entirely fail[s] to consider an important aspect of the problem." *State Farm*, 463 U.S. at 43.

Second, the draft RIA's analytic choice to disregard the value of fuel savings after 2.5 years of ownership, ostensibly based on EPA's assumptions about consumers' willingness to pay for those future fuel savings, is arbitrary, unsupported, and internally inconsistent. Assume the draft RIA's assumption were correct: assume that vehicle purchasers are willing to pay for 2.5 years' worth (21% of the vehicle's lifetime) of fuel savings, and that the automakers' choice of vehicle technologies, based on such a willingness to pay, carries "hidden" opportunity costs that reduce the ultimate benefit to consumers from fuel savings. Then, the proper way to reflect that assumption in a cost-benefit analysis would be to count the *remaining* 79% of fuel savings as benefits to the consumer. Gillingham-Jenn 35–37. The draft RIA gets it exactly backwards, counting only 21% of the future fuel savings as benefits, not 79%. *Id.* at 36. That error appears to reflect EPA's "complete misunderstanding" of its own economic theory. *Id.*

Moreover, the draft RIA's assumption is not correct: the proposition that consumers are willing to pay for 2.5 years of fuel savings is based on a cherry-picked set of studies that excludes some of the newer literature on this topic, which is less favorable to EPA. *Id.* at 37–38.

Lastly, EPA suggests in passing that counting only 21% of fuel savings may be a proper way to "adjust[] for potentially missing costs or consumer preferences," Draft RIA at 19, but never identifies what these hidden costs could be. Typically, the hidden cost associated with vehicle standards is that automakers may achieve compliance by reducing performance features that consumers value; but that cannot be the case here, because EPA's modeling holds vehicle performance features constant between the baseline and under the standards. Gillingham-Jenn 39–40. That, in turn, indicates that EPA should not be netting out fuel savings at all based on a willingness-to-pay assumption, but count 100% of fuel savings in the cost-benefit analysis.

Because EPA fundamentally misunderstands and misapplies its willingness-to-pay assumption, cherry-picks the literature to support it, and fails to identify any "missing costs" that might otherwise justify lopping $730 billion of disbenefits off its Proposal, EPA's decision to apply only 2.5 years' worth of future fuel savings is "a clear error of judgment." *State Farm*, 463 U.S. at 43.

3) Effect of sunsetting Inflation Reduction Act tax credits

The draft RIA notes that since EPA's prior GHG standards were finalized, some of the IRA tax credits have been scheduled to sunset under the OBBBA, but the loss of these tax credits is insufficient to justify EPA's change in position regarding vehicle price. Draft RIA at 4. In the 2024 Multipollutant Rule, EPA concluded that "the standards would be beneficial for consumers because the lower operating costs would offset increases in vehicle technology costs, even without consideration of PEV purchase incentives in the IRA." 89 Fed. Reg. at 28,092. Similarly, in the Phase 3 HD Rule, EPA concluded that for calendar years 2027 through 2055, looking at

automaker costs alone, the standards would "result in a cost savings of $0.19 billion dollars before considering the IRA battery tax credits." 89 Fed. Reg. 29,455. Considering the heavy-duty industry holistically, the standards would impose $1.1 billion in vehicle technology costs (without tax credits) but save the heavy-duty owner-operators approximately $3.5 billion in operating costs. *Id.* at 29,456.

To the extent EPA intends to claim that the loss of the tax credits will increase the cost of owning an EV and therefore justifies repealing the prior standards, it fails to acknowledge that it is changing its prior position that the standards are beneficial even in the absence of the tax credits. *See Fox Television*, 556 U.S. at 515 (agency must "display awareness that it *is* changing position"). Because EPA's prior policy relied on factual findings that EPA now contradicts, it must provide a "more detailed justification" of its new position, which it also fails to do. *Id.* EPA's cursory consideration of the loss of IRA tax credits also fails to consider the effect of the many state-level programs that continue to incentivize the purchase of electric vehicles.[232]

3. Consumer choice

The Proposal's contention that "GHG emission standards harm public health and welfare by … decreasing consumer choice" is arbitrary and capricious. 90 Fed. Reg. at 36,291. Although EPA never gives notice of what it means by "consumer choice," as used by economists, the term refers to the size of the choice set of options available to consumers—here, the set of vehicles a purchaser may buy, across attributes and price points—and it is measured in terms of the size of that set.[233] Gillingham-Jenn 21. EPA provides no data or any evidence at all indicating that GHG standards reduce the number or diversity of vehicles available for consumers to purchase. Elsewhere, EPA claims that "greater availability of new vehicles at lower prices furthers public welfare by promoting … consumer choice," 90 Fed. Reg. at 36,313, suggesting that its consumer choice finding derives directly from its assumption that repealing GHG standards will lower or mitigate vehicle prices. But again, EPA provides no evidence supporting its claims that repealing GHG standards will make new vehicles available at lower prices, *supra* Part IV.B.2, or that the availability of vehicles at lower prices will improve the vehicle choices available to consumers.

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[232] *See, e.g.*, Colo. Dept. of Pub. Health & Envt., "Clean Fleet Vehicle and Technology program," https://cdphe.colorado.gov/clean-fleet-vehicle-and-technology-program; NYSERDA, "Drive Clean Rebate for Electric Cars," https://www.nyserda.ny.gov/All-Programs/Drive-Clean-Rebate-For-Electric-Cars-Program; MOR-EV: Massachusetts Offers Rebates for Electric Vehicles, "Home Page," https://mor-ev.org/; Drive Electric Vermont, "Vermont EV Incentives and Programs," https://www.driveelectricvt.com/shopping/incentives.

[233] Thus, for example, state laws prohibiting automakers from selling EVs directly to consumers represent a straightforward limitation of consumer choice because they remove certain vehicle options from the choice set of a consumer in that state. *See* Sean O'Kane, "Rivian sues to sell its EVs directly in Ohio," *Tech Crunch* (Aug. 4, 2025), https://techcrunch.com/2025/08/04/rivian-sues-to-sell-its-evs-directly-in-ohio/.

EPA does not purport to rely on the draft RIA to support its conclusions, 90 Fed. Reg. at 36,326, but even if it did, the draft RIA does not address the impact of the proposed repeal on the choice set of vehicles available for purchase either.

In fact, evidence indicates that the GHG standards do not limit the vehicle choices available to consumers. Data from 2015 onward show that the number of light-duty vehicle models available to consumers has remained constant, while the composition of those models has diversified to include powertrain options like hybrids, plug-in hybrids, battery-electric vehicles, and fuel-cell electric vehicles as well as gas- and diesel-fueled vehicles. Gillingham-Jenn 21–22. Moreover, consumers have continued to have access to a wide vehicle attributes like size—e.g., small cars, sport utility vehicles, and trucks—across both ICE and electrified powertrains. *Id.* at 22–24.

Although EPA has not given adequate notice of such a rationale, Administrator Zeldin and EPA's press office have loosely used "consumer choice" to mean, essentially, the lack of an "EV mandate."[234] That concept of an "EV mandate" originated in the fuel industry's challenge to the revised MY2023–26 light-duty GHG standards, where petitioners there claimed that if EV production were, under the GHG standards, anticipated to be at all higher than what the market would otherwise achieve, the standards "effectively mandate electric vehicles."[235] In President Trump's January 20, 2025 executive order, *Unleashing American Energy*, the "EV mandate" stalking horse was further expanded to encompass "unfair subsidies and other ill-conceived government-imposed market distortions that favor EVs over other technologies and effectively mandate their purchase by individuals, private businesses, and government entities alike by rendering other types of vehicles unaffordable." Exec. Order 14154, § 2(e), 90 Fed. Reg. 8353 (Jan. 29, 2025); *see also id.* (committing to "ensur[e] a level regulatory playing field for consumer choice in vehicles" by eliminating the "electric vehicle (EV) mandate").

To the extent the Proposal's reference to "consumer choice" means the elimination of the GHG standards as an "EV mandate," such rationale is arbitrary for multiple reasons.

First, the "EV mandate" rationale is wholly prejudged, as discussed *infra* Part V.A.1.

Second, the rationale "relie[s] on factors which Congress has not intended it to consider," *State Farm*, 463 U.S. at 43, by adopting a regulatory stance that is entirely antithetical to the Clean Air Act. Section 202(a) unequivocally directs EPA to create a "regulatory playing field" that is *not* level, but rather favors less polluting vehicles and engines. By design, every standard

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[234] *See, e.g.*, EPA Press Office, "EPA Announces Action to Implement POTUS's Termination of Biden-Harris Electric Vehicle Mandate," *supra* note 221 (claiming the 2024 Multipollutant Rule and Phase 3 HD Rule "provided the foundation for the Biden-Harris electric vehicle mandate that takes away Americans' ability to choose a safe and affordable car for their family" and vowing to "protect consumer choice" by reconsidering those rules).

[235] ECF No. 1996915 at 21, *Texas v. EPA*, No. 22-1031 (D.C. Cir. Apr. 27, 2023); *see* 9/14/23 Oral Arg. Tr. 32:23–33:1.

for every pollutant under Section 202 leads to more clean vehicles than the market would itself achieve. If "consumer choice" means regulations that do not incentivize or reward lower-emitting vehicles over higher-emitting ones, it is inimical to the text Congress enacted. *See Int'l Harvester*, 478 F.2d at 640 (Under the Clean Air Act, "[t]he driving preferences of hot rodders are not to outweigh the goal of a clean environment.").

Third, EPA has changed its position on consumer choice without acknowledging that change or rebutting the findings in its own prior rules. In the Proposal, EPA baldly characterizes the GHG standards as "electric vehicle mandates that require shifting the national vehicle fleet from one type of vehicle and vehicle fuel to another." 90 Fed. Reg. at 36,307. In the 2024 Multipollutant Rule and Phase 3 HD Rule, however, EPA consistently took the position that the GHG standards "are performance-based, and manufacturers are not required to use particular technologies to meet the standards," and emphasized that it had structured the standards so that consumers would continue to have access to a wide variety of types of vehicles. 89 Fed. Reg. at 27,855. In the 2024 Multipollutant Rule, EPA "emphasize[d] that the final standards are not a mandate for a specific type of technology" and "do not legally or de facto require a manufacturer to follow a specific technological pathway to comply." *Id.* at 27,896. Automakers could "select any technology or mix of technologies that would enable them to meet the final standards," and EPA noted that historically, they had chosen to comply with EPA standards "in ways that [EPA] did not anticipate." *Id.* EPA also "performed additional modeling demonstrating that the standards can be met in multiple ways," including "solely with vehicles containing internal combustion engines." *Id.* at 27,897; *see id.* at 28,057–84. EPA recognized the variety of combustion-engine technologies available to comply with the standards, including turbocharged downsized engines, advanced Atkinson engines, and Miller cycle engines. *Id.* at 28,059.

Regarding consumers' ability to choose among different types of vehicles, EPA noted that the structure of the standards "enables manufacturers to choose which technologies to apply to which vehicles and when to apply them, which increases consumer choice." *Id.* at 28,087. EPA stated that it "carefully designed the final rule to avoid any other kind of disruptions to purchasers," including "carefully tailor[ing] the standards to ensure that purchasers could obtain the kind of vehicles they need" among the "diverse array of vehicles and use cases" in the light- and medium-duty classes. *Id.* at 27,899. Similarly, in the Phase 3 HD Rule EPA noted that the standards "do not mandate the production or purchase of any particular vehicle, or the use of any particular technology in such vehicles," 89 Fed. Reg. at 29,698, and that it "anticipate[d] that a compliant fleet under the standards [would] include a diverse range of technologies including" both zero-emission and combustion-engine technologies, *id.* at 29,706. EPA "projected a few compliance pathways with technology packages that are purposely different," including one that did not include any zero-emission vehicles. *Id.* at 29,452. It noted and modeled the multiple technologies that are available to reduce heavy-duty vehicles' GHG emissions, including aerodynamic improvements, tire rolling resistance, natural gas engines, hydrogen-fueled internal combustion engines, and hybrid and plug-in hybrid powertrains. *Id.* at 29,487–91. And EPA again "recognize[d] that [heavy-duty] vehicles represent a diverse array of vehicles and use cases" and "carefully tailored the standards for each regulatory subcategory to ensure that purchasers could obtain the kinds of HD vehicles they need." *Id.* at 29,470.

EPA fails to acknowledge or provide a reasoned explanation for its change in position on consumer choice and whether its standards constitute an "EV mandate." Its failure to admit the change in position is itself arbitrary and capricious. *See Fox Television*, 556 U.S. at 515 (agency must "display awareness that it *is* changing position"). Equally arbitrary and capricious is its failure to provide any explanation for this change in position, let alone the "more detailed justification" required to support a policy that "rests upon factual findings that contradict those which underlay its prior policy." *Id.*

Although the draft RIA includes no analysis of the GHG standards as purported "EV mandates," it does purport to provide evidence showing that consumers' overall interest in EVs is waning. Draft RIA at 5–7. That proposition is irrelevant to consumer choice because the GHG standards do not mandate the purchase of EVs or make ICE vehicles unavailable for purchase, as EPA previously found. To the extent consumer demand evidence is relevant to the *feasibility* of GHG standards, the draft RIA's discussion is not persuasive. EPA does not re-perform the modeling it conducted in its analysis of the 2024 Multipollutant Rule to evaluate the impact of the rule on consumers, including consumers' decision whether to purchase EVs. *See generally* 2024 Multipollutant Rule RIA, Chapter 4. This modeling included evaluation of both a "Faster BEV Acceptance" and a "Slower BEV Acceptance" case, despite acknowledging that the slower acceptance case "appear[ed] to be very unlikely given the evidence for BEV acceptance." *Id.* at 4-20. EPA found that the incremental costs of the Slower BEV Acceptance case were reasonable, 89 Fed. Reg. at 28,078, and that the standards could be met by manufacturers under the Slower BEV Acceptance case, *id.* at 27,897.

Rather than addressing or re-running its modeling, EPA presents new evidence that fails to show that consumers have lost interest in EVs since its 2024 analyses. EPA cites to a survey finding that "consumers are no less likely to consider purchasing electric vehicles" despite "[t]ariffs and political uncertainty"; that "the EV market continues to grow"; and that U.S. EV sales increased in the first quarter of 2025 compared to the same period in 2024.[236] EPA suggests that the higher 2025 sales are driven by "concerns about the EV tax credit being eliminated," but that rationale is not provided in the cited article, and EPA provides no other source to support it. Draft RIA at 5–6. In fact, the survey in question found that the percentage of shoppers concerned about EV purchase price *dropped* between 2024 and 2025.[237] Several of the articles or studies that EPA cites indicate that purchase price is a barrier to EV sales—but the relevance of this concern is mitigated by the evidence cited above that EV costs are falling and will soon reach price parity with ICE vehicles.[238] EPA also cites a study that models the expected EV sales drop

[236] Kalena Thomhave, "Consumers sustain interest in EVs but range anxiety still a concern," *Automotive Dive* (Jun. 2, 2025), https://www.automotivedive.com/news/jd-power-ev-sales-consumer-interest-strong/748924/; *see* Draft RIA at 5 (citing same).

[237] Thomhave (2025), *supra* note 236.

that will occur *if* EPA repeals the very regulations at issue in this rulemaking.[239] But EPA cannot claim that its repeal is justified by the loss of sales that its own actions will cause.

Many of the sources cited by EPA describe small and very recent reductions in EV demand; EPA does not explain why these fluctuations justify repealing all GHG standards.[240] Other studies cited by EPA indicate that the loss of IRA tax credits will cause a drop in EV sales, but the long-term relevance of this effect is unclear given EPA's own prior findings that the standards represent an overall cost savings to consumers even in the absence of the tax credits.[241] These studies cannot support a conclusion that vehicle prices are or will become so high as to justify repealing the GHG standards. *See State Farm*, 463 U.S. at 43 (agency must "examine the relevant data and articulate a satisfactory explanation for its action").

The survey findings cited by EPA are especially unpersuasive given that survey sentiment is not a good predictor of EV sales. Gillingham-Jenn 24–29. In both 2018–2020 and 2023–2024, EV sales grew even as surveys suggested limited or declining intent to purchase. *Id.* at 27–28. While survey responses are highly sensitive to current events, EV sales reflect durable market fundamentals like declining technology costs and expanding EV infrastructure. *Id.* at 29. Cross-sectional surveys also fail to capture the feedback effects of adoption (i.e., EV owners' positive experiences spreading by word-of-mouth and increasing visibility), systematically understating long-run willingness to purchase. *Id.*

In fact, sales and consumer satisfaction data indicate high levels of consumer interest in and satisfaction with EVs. Longitudinal analyses show that consumers' willingness to adopt EVs has grown steadily, *id.* at 24–27, including reaching record highs in 2023–2024, *id.* at 27–28.

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[238] *Id.*; J. Richard, CALSTART, *Zeroing in on Zero-Emission Trucks* (June 2025), at 4, https://calstart.org/wp-content/uploads/2025/05/ZIO-ZET-June.pdf; Brittany Moye, "AAA: Americans Slow to Adopt Electric Vehicles," *Amer. Auto. Ass'n Newsroom* (Jun. 3, 2025), https://newsroom.aaa.com/2025/06/aaa-ev-survey/.

[239] J. Jenkins, Princeton University ZERO Lab, *Potential Impacts of Electric Vehicle Tax Credit Repeal on US Vehicle Market and Manufacturing* (Mar. 18, 2025), https://zenodo.org/records/15047921.

[240] Moye (2025), *supra* note 238 (percentage of adults "likely" or "very likely" to buy an EV as their next car dropped from 18% in 2024 to 16% in 2025); Thomhave (2025), *supra* note 236; Lydia Saad, "U.S. Electric Vehicle Interest Steady at Lower 2024 Level," *Gallup* (Apr. 8, 2025), https://news.gallup.com/poll/658964/electric-vehicle-interest-steady-lower-2024-level.aspx (percentage of adults who own or express owning an EV remained at 51% from 2024 to 2025 after falling from 59% in 2023).

[241] E. Buckberg & C. Cole, Salata Institute for Climate and Sustainability at Harvard University, *Quantifying Trump's impacts on EV adoption* (Mar. 2025), at 5–6, https://salatainstitute.harvard.edu/quantifying-trumps-impacts-on-ev-adoption/; Jenkins (2025), *supra* note 239.

Consumers who have purchased EVs report that they are highly satisfied with the technology and intend to stick with EV technology in the future. *Id.* at 27.

Finally, even if EPA had shown the GHG standards limit consumer choice by incentivizing production of "too many" EVs, EPA fails to consider obvious alternatives to the proposed action, including reducing the stringency of the existing GHG standards. "An agency is required to consider responsible alternatives to its chosen policy and to give a reasoned explanation for its rejection of such alternatives." *Am. Radio Relay League*, 524 F.3d at 242. If EPA is concerned that the current GHG standards are "overproducing" EVs—and if the agency believes it may permissibly influence the market toward ICE vehicle production—it could reduce the stringency of the standards to a level that would favor lower levels of EV production. Indeed, automakers complied with prior GHG standards with far fewer EVs in the national fleet than are produced today. *See, e.g.*, 2024 Multipollutant Rule Resp. to Comments 312 n.126 (EPA projected 1% EV production for MY2021 compliance, while actual sales exceeded 4%). Such a modification of the standards is much *more* obvious than the far-reaching, complete repeal that EPA proposes in the instant action. Courts in similar cases have found that a wholesale repeal of a regulation is arbitrary and capricious where the agency does not consider instead modifying the regulation to be more effective. *See State Farm*, 463 U.S. at 51 (recission of passive restraint requirement in vehicles acted arbitrarily by not considering alternative of requiring airbags, "a technological alternative within the ambit of the existing standard"); *Int'l Ladies' Garment Workers' Union*, 722 F.2d at 815 (rescission of labor regulations was arbitrary where agency did not consider "less far-reaching choices than complete rescission"); *Office of Comm'n of United Church of Christ v. FCC*, 707 F.2d 1413, 1439, 1440 (D.C. Cir. 1983) (elimination of requirement to maintain programming logs was arbitrary and capricious where agency "failed to give sufficient consideration to the benefits of retaining a modified form of programming logs"). Because EPA has not considered this—or, indeed, any—alternative, its action is arbitrary and capricious.

4. Fleet turnover

EPA's proposed conclusion that "GHG emission standards harm public health and welfare by … slowing the replacement of older vehicles that are less safe and emit a greater volume and variety of air pollutants than new motor vehicles and engines" is arbitrary and capricious. 90 Fed. Reg. at 36,291. This fleet turnover argument cannot withstand scrutiny, as EPA well knows: in the 2024 Multipollutant Rule, it modeled the effect of GHG standards on fleet turnover via the exact economic logic the Proposal articulates, and it found the impact was negligible—a 0.18% decline in MY2027 vehicle sales—and far eclipsed by the benefits of making new vehicles cleaner. Now, EPA models nothing and provides no evidence on actual fleet turnover impacts. EPA's failure to "examine the relevant data and articulate a satisfactory explanation for its action" is arbitrary and capricious. *State Farm*, 463 U.S. at 43.

The only support EPA offers for its fleet turnover rationale is a trio of footnotes citing back to an argument EPA and NHTSA developed in the proposed and final revised MY2021-26 standards, the SAFE II Rule. 90 Fed. Reg. 36,312–13 n.108, 109, & 111 (citing 85 Fed. Reg. at

24,174, 24,186, 24,626, and 25,039). In SAFE II, EPA and NHTSA likewise argued that by raising new vehicle prices, stricter GHG emission standards and fuel-economy standards would slow overall vehicle fleet turnover by causing consumers to retain their existing vehicles longer, which, in turn, would cause vehicle emissions to rise (by keeping older, more-polluting vehicles on the road longer) and additional adverse safety impacts (by keeping older vehicles without modern safety features on the road for longer). 85 Fed. Reg. at 24,186. SAFE II's fleet turnover modeling was highly contested in written comments, petitions for reconsideration, and litigation, and ultimately abandoned by EPA.[242]

In its 2024 Multipollutant Rule, rather than employing a separate "scrappage" model to analyze fleet turnover, EPA analyzed these effects within its GHG compliance and effects model OMEGA. 2024 Multipollutant Rule Resp. to Comments at 1845–46. While OMEGA did show that MY2027-32 standards would cause new vehicle sales to decline marginally, and thus cause some older vehicles to stay on the road longer than they would have otherwise, any impacts on vehicle emissions or safety were dwarfed by the overall emissions and safety benefits the Rule provided via cleaner and safer new vehicles. Similarly, in its Phase 3 Heavy-Duty Rule, EPA examined the potential impacts of MY2027–32 heavy-duty vehicle GHG standards and concluded that the standards were unlikely to have any impact on the overall rate of fleet turnover—or, if they did, that the impacts would occur in a limited way that would not significantly affect the GHG emissions reductions projected by the Rule. 89 Fed. Reg. at 29,698–700. Instead of acknowledging its prior modeling and analysis, EPA ignores them and forgoes particulars altogether, arguing only in the abstract that more expensive new vehicles are "cost prohibitive for some consumers," and such consumers "are likely to turn to the used vehicle market or continue using an older vehicle," which, in turn, will "keep less efficient vehicles on the road for longer." 90 Fed. Reg. at 36,312. As discussed *supra* in Part IV.B.2, EPA's premise of the GHG program causing cost-prohibitive increases in vehicle prices is unsupported, and the Proposal's reliance on that premise renders its fleet turnover rationale arbitrary out of the gate. But even assuming that premise, the fleet turnover rationale is arbitrary for multiple independent reasons.

First, EPA fails to model or otherwise analyze fleet turnover effects in concrete terms. By confining itself to abstract hypotheticals, EPA simply assumes that reduced fleet turnover makes

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[242] *See, e.g.*, Detailed Comments of California, et al. on EPA and NHTSA's Joint Proposed "SAFE" Vehicles Rule for MY2021-2026 Passenger Cars & Light Trucks, EPA-HQ-OAR-2018-0283 / NHTSA-2018-0067 (Oct. 26, 2018); Ken Gillingham, PhD, How Fuel Economy Standards Affect Fleet Turnover and Used Vehicle Scrappage: Comment on the Safer Affordable Fuel-Efficient (SAFE) Vehicles Proposed Rule for MY2021-2026 Passenger Cars & Light Trucks (Oct. 25, 2018); Ctr. for Biol. Diversity et al., Pet. for Reconsideration of EPA's Final Rule—The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for MY2021-2026 Passenger Cars & Light Trucks at 22-24, EPA-HQ-OAR-2018-0283 (June 29, 2020) (SAFE II Pet. for Recon.); Proof Brief of State & Local Govt. Petrs., ECF No. 1880213 at 51-57, *Competitive Enter. Inst. v. NHTSA*, No. 20-1145 (D.C. Cir. Jan. 14, 2021).

GHG standards net-harmful, 90 Fed. Reg. at 36,311, when its own models show exactly the opposite: the benefits of cleaner new vehicles vastly outweigh the negligible emissions from a handful of older vehicles being driven longer. The Clean Air Act's very design makes EPA's head-in-the-sand approach here all the more irrational: because all standards for any pollutant carry the potential for similar reduced fleet turnover, it is vital for EPA to weigh any such effects against the benefits of standards. *See Michigan v. EPA*, 576 U.S. at 753 (EPA must "pay[] attention to the advantages *and* the disadvantages of agency decisions.").

Second, to the extent EPA's three footnote citations to the SAFE II preamble signal that EPA is readopting the fleet turnover modeling it conducted for that 2020 rule, EPA fails to give adequate notice. Because EPA provides no explanation, it is unclear whether the EPA intends to rely on SAFE II's modeling or only the ideas described in SAFE II for the conceptual points noted in the Proposal's text. The Proposal's fleet turnover rationale thus lacks sufficient specificity regarding its technical basis to allow for meaningful comment—assuming EPA means to borrow that technical basis at all.

Third, to the extent EPA does rely on its prior SAFE II modeling and analysis, that reliance is arbitrary and capricious due to the flaws in the SAFE II modeling, data, and analysis, which EPA has made no attempt to cure. Nor does the Proposal explain why EPA would rely on an analysis it knows is defective, or why it is changing course from the sound approach it adopted in the 2024 Multipollutant Rule.

a. The Proposal's fleet turnover rationale is unsupported by any data and ignores prior modeling showing negligible turnover effects

EPA ignores an important aspect of the problem by raising only the abstract potential for delayed fleet turnover, without any attempt to evaluate the magnitude of any turnover effects or to compare them against the benefits of standards. The Proposal expresses concern that GHG standards may lead to increases in emissions from older cars staying on the road longer but fails to weigh those increases against the emissions reductions from new vehicle sales conforming to stricter emissions standards. Gillingham-Jenn at 33–34. Agencies may not "put a thumb on the scale by undervaluing the benefits and overvaluing the costs of more stringent standards" in this manner. *Ctr. for Biol. Diversity v. NHTSA*, 538 F.3d at 1198.

The Proposal also disregards EPA's own modeling in the 2024 Multipollutant Rule, and its analysis in the Phase 3 HD Rule, which confirm that any impact of delayed fleet turnover resulting from those standards will be minimal when compared to the rule's emissions benefits. In the 2024 Multipollutant Rule, EPA utilized its OMEGA model to consider the impact that its GHG standards would have on vehicle turnover. While OMEGA does not model scrappage directly, it models the factors that ultimately affect the rate of fleet turnover. Multipollutant Rule Resp. to Comments at 1845–46. Though EPA observed that the MY2027-32 multipollutant standards would cause a slight reduction in new vehicle sales compared to a "No Action" scenario, and, thus, projected some older vehicles to stay on the road longer, OMEGA showed that any emissions impact these older vehicles had on the overall fleet emissions would be

miniscule in light of the overall emissions benefits from the MY2027–32 standards. *Id.*; 89 Fed. Reg. at 28,097–98, 28,099, 28,102–4; Gillingham-Jenn at 30–34. EPA's modeling showed that new vehicle sales would decline only by 0.18% in 2027—in other words, for every one older vehicle that would remain on the road longer, over 550 new vehicles subject to more stringent standards would be sold. *Id.* at 33. Even if declines in sales were to reach the projected amount of 0.92% by 2032, the ratio would remain overwhelmingly in favor of lower pollution, with 108 new vehicles sold for every one older vehicle remaining in the fleet. *Id.* Similarly, EPA found that its MY2027–32 heavy-duty GHG standards were unlikely to significantly affect the turnover rate of the heavy-duty fleet. 89 Fed. Reg. at 29,698–700. While EPA lacked sufficient data to quantitatively model fleet turnover effects, its consideration of scientific literature, third-party analyses of the sales impacts from prior heavy-duty standards, and the favorable total cost of ownership of zero-emission vehicles led EPA to conclude that turnover effects would "not occur at all, or if they do, [would] occur in a limited way." *Id.* at 29,700; *see also* Phase 3 HD Rule Resp. to Comments at 1757; Phase 3 HD Rule RIA at 721–26.

Here, neither the Proposal nor the draft RIA disclose any analysis that updates or changes the assumptions or inputs employed by EPA in its prior modeling and analysis that would affect fleet turnover, such as technology costs, demand elasticity, or payback period. *See* Draft RIA at 26–27 (EPA cost-benefit analysis used "the same assumptions, methods, and tools as used in the analyses for the LMDV and HDP GHG Phase 3 rules"). But even if EPA were to substantially alter these values, it is difficult to envision a scenario where the emission increases from delayed fleet turnover could actually approach the same order of magnitude as the reductions brought about by stricter standards. Gillingham-Jenn at 33–34. Indeed, the only model runs that EPA does provide in the docket—without explanation of what it has modeled, with what assumptions and inputs—shows enormous GHG, criteria, and air toxics emissions *increases* associated with the Proposal. EPA Physical Effects at 2–13. To the extent that these represent runs of the OMEGA model, which accounts for fleet turnover effects endogenously, those runs flatly contradict EPA's claim to have "serious concerns that its GHG standards may be harming air quality by raising prices and reducing fleet turnover." 90 Fed. Reg. at 36,313. *See State Farm*, 463 U.S. at 43 (agency action is arbitrary where offered explanation runs counter to the evidence before the agency).

Nor does the Proposal explain why it departs from EPA's prior practice, or why EPA expects that the analysis would be materially different here—why, in other words, it would expect any increase in vehicle emissions from delayed scrappage to have anything but an insignificant impact on overall fleet vehicle emissions. *See Fox Television*, 556 U.S. at 515 (agency must provide more detailed justification when a change in policy contradicts prior factual findings).

EPA's failure to analyze fleet turnover effects in any detail is especially irrational in light of the Clean Air Act's "primary goal": "pollution prevention." 42 U.S.C. § 7401(c). In particular, to combat "the growth in the amount and complexity of air pollution brought about by," among other things, "the increasing use of motor vehicles," *id.* § 7401(a)(2), Section 202(a) requires EPA to prescribe emission standards for new vehicle classes, most or all of which are expected

to carry auto industry compliance costs to some extent. *Id.* § 7521(a)(2); *see MEMA I*, 627 F.2d at 1118 ("Every effort at pollution control exacts social costs. Congress, not the Administrator, made the decision to accept those costs."). If increasing new vehicle costs (with its attendant fleet turnover effects) were sufficient in the abstract to decline to regulate, Section 202(a) would no longer be mandatory. *But see* 42 U.S.C. § 7521(a)(1) (EPA "shall" prescribe standards for dangerous air pollutants); *County of Maui v. Hawaii Wildlife Fund*, 590 U.S. 165, 180 (2020) ("[T]o follow EPA's reading would open a loophole allowing easy evasion of the statutory provision's basic purposes. Such an interpretation is neither persuasive nor reasonable.").

Rather, EPA must conduct an analysis to determine if any negative fleet turnover effects caused by emission standards at issue are meaningful compared to the standards' improvement of new vehicles. Because the Proposal conducts no such analysis here, it is arbitrary.

b. To the extent the Proposal adopts SAFE II's technical analysis, EPA gives inadequate notice of that basis

To the extent EPA claims it *has* conducted the necessary analysis to support its fleet turnover rationale by referencing the SAFE II Rule, EPA has given insufficient notice of that technical basis to allow for meaningful comment. It is completely unclear from the three cryptic footnotes EPA has included in the Proposal how much, if any, of the SAFE II technical analysis it intends to incorporate into this rulemaking—and how it proposes to do so. *See* 90 Fed. Reg. at 36,312 n.108 ("For additional discussion on this topic, *see* 85 FR 24174 (Apr. 30, 2020)."); *id.* at n.109 ("A discussion of the impact of higher vehicle prices on slowing fleet turnover can be found at 85 FR 24626 (Apr. 30, 2020); *id.* at 36,313 n.111 ("A discussion of the impact of higher vehicle prices on slowing fleet turnover and thus increasing emissions can be found at 85 FR 24186 and 25039 (Apr. 30, 2020)."). On their face, those footnotes indicate that EPA references the SAFE II preamble only as general background citation for the broad economic concept articulated in the Proposal, i.e., that, in the abstract, higher vehicle prices can slow fleet turnover, with greater emissions from older vehicles staying on the road longer.

To the extent EPA attempts to incorporate specific portions of analysis or modeling data from the SAFE II Rule into the Proposal, EPA never explains how its modeling or analysis from 2019-2020 would apply to the present or future national fleet (if at all). EPA's failure to "reveal portions of the technical basis for a proposed rule in time to allow for meaningful commentary" is a "serious procedural error." *Conn. Light & Power Co. v. Nuclear Reg. Comm'n*, 673 F.2d 525, 530–31 (D.C. Cir. 1982); *see also* 42 U.S.C. § 7607(d)(3)(A), (B) (EPA must summarize "the factual data upon which the proposed rule is based; [and] the methodology used in obtaining and in analyzing the data").

In the SAFE II rulemaking, EPA and NHTSA purported to estimate the impact that various regulatory alternatives would have on vehicle turnover, new vehicle sales, and scrappage into its overall analysis of the feasibility of those regulatory alternatives. 85 Fed. Reg. at 24,216–17. To do so, EPA and NHTSA primarily relied on NHTSA's "CAFE Model," an integrated system of models that independently estimate manufacturers' responses to changing vehicle emission standards; changes in total vehicle sales that result from the manufacturers' responses,

the resultant changes in fleet turnover, and rates of vehicle scrappage in response to changing emission standards. *Id*. at 24,217, 24,271–72. Each of those individual sub-models relies on various inputs and assumptions selected by the agencies to determine the scrappage rate for vehicles of various ages: e.g., scrappage rate coefficients, panel data on model year cohorts, historical vehicle registration data, data on average vehicle miles traveled, new vehicle prices, fuel prices, cost per mile of driving, and GDP growth rate. *Id*. at 24,377, 24,626–71. Using those inputs and others, the agencies used the CAFE Model to estimate the impact of weakening existing emission standards on the rate of new vehicle sales, fleet turnover, and scrappage rates. Those results, in turn, were used to estimate the impacts of the SAFE II rule on GHG and smog-forming emissions, as well as safety. *Id.* at 24,742, 24,796–845, 25,038–51. Each of those analyses in turn incorporated additional assumptions, including fatality rates associated with vehicles of differing ages, the impact of recent technological developments on vehicle safety, and fuel consumption rates for vehicles of different model year cohorts. *Id.* In total, the technical discussions of fleet turnover spans hundreds of pages across the final rule's preamble and regulatory impact analysis. *See also id.* at 24,626-71; SAFE II RIA at 887–962.

Here, EPA has broadly cited to four of those pages, with no detail as to what of SAFE II's fleet turnover technical discussion on those four pages it means to incorporate. EPA does not indicate that it intends to use the same models to estimate the impacts of the Proposal, including the CAFE Model or vehicle scrappage sub-model. Were EPA to do so—and it has not provided notice of such—EPA has also not explained whether it would use the same inputs it applied in the 2020 rulemaking, or, if not, how it would update those inputs to reflect current market and environmental conditions; how EPA would use the results yielded by its quantitative analysis to estimate the overall impacts of the Proposal on overall vehicle miles traveled, rates of new vehicle sales, or scrappage rates, and, ultimately, the impacts of these factors on the overall costs and benefits of the Proposal. That failure is all the more acute because the period from 2020 to the present witnessed an extraordinary boom in EV, plug-in hybrid, and other clean vehicle sales, rendering SAFE II's inputs all the more outdated. *See supra* Part II.D.1. This "serious procedural error" renders the Proposal unlawful. *Conn. Light & Power*, 673 F.2d at 530–31.

c. The SAFE II fleet turnover technical analysis is also flawed

To the extent EPA does purport to incorporate some or all of SAFE II's fleet turnover technical analysis on the four cited pages, any reliance on the SAFE II modeling and analysis would also be arbitrary and capricious.

First, the Proposal makes no attempt to cure the flaws inherent in the SAFE II modeling, despite receiving public input pointing out these flaws. Among other things, commenters pointed out that EPA and NHTSA's scrappage model produced inaccurate results because it did not model new and used vehicles simultaneously. 85 Fed. Reg. at 24,629–31. EPA and NHTSA used the wrong vehicle miles traveled estimate in their sales and scrappage models, assuming that each vehicle would accrue 35,000 miles of use during the first 2.5 years of ownership, rather than using the vehicle miles traveled estimates the agencies generated and used in all other elements of their analysis. SAFE II Pet. for Recon. at 22–24. EPA and NHTSA also incorporated

into their sales model a flawed estimate of the "baseline sales trend" (what they claimed would have been the sales projected to occur under the prior, more stringent standards), the margin of error for which grossly outweighed the degree of sales change that the agencies projected would occur because of the final rule, as well as an arbitrarily high, unsupported assumption regarding sales elasticity. *Id.* at 35-45. And the agencies incorporated an arbitrarily low estimate of consumers' valuation of fuel savings into their sales and scrappage models, which, again, led the agencies to artificially estimate the reported net benefits of the final rule. *Id.* at 45–49.

These known errors render the Proposal defective to the extent it relies on EPA and NHTSA's SAFE II modeling, because relying on a model that an agency knows is full of errors is arbitrary and capricious. *Columbia Falls Aluminum Co. v. EPA,* 139 F.3d 914, 923 (D.C. Cir. 1998) ("EPA knows that 'key assumptions' underlying [its model] are wrong and yet has offered no defense of its continued reliance on it.").

Second, the Proposal fails to acknowledge or explain why it has departed from its prior, superior methodology in the 2024 Multipollutant Rule. In that rule, used the updated and peer-reviewed OMEGA model to estimate the likely impacts of its final rule on emissions, fuel consumption, and public health and welfare. 89 Fed. Reg. at 27,983. EPA found that its updated OMEGA model "better accounts for the significant evolution over the past decade in vehicle markets, technologies, and mobility services" and, through its "representation of consumer-producer interactions," allowed EPA to model consumer acceptance of EV technologies. *Id.* In contrast to its analysis using the CAFE Model, EPA treated vehicle scrappage as endogenous to the OMEGA model and did not employ a separate sub-model to specifically estimate scrappage rates. 2024 Multipollutant Rule Resp. to Comments at 1845–46. EPA noted that the model did show an increased number of older vehicles being driven longer (i.e., reduced scrappage) in the event that new vehicle sales decrease in response to a policy, and those vehicles will drive more total miles than driven by older vehicles in the No Action scenario—a shifting of vehicle miles traveled distribution that would have the same practical effect as changing the scrappage rates of older vehicles. *Id.* OMEGA therefore incorporates any reduced turnover effects in its final projections of air quality impacts, allowing EPA to judge turnover effects in concrete terms, not abstract hypotheticals.

To the extent the Proposal returns to an analysis that relies on an exogenously modeled scrappage rate for light-duty and medium-duty vehicles—or abandons modeling altogether—EPA fails to explain why it has departed from its methodology employed in the 2024 Multipollutant Rule or to even acknowledge that it has changed its position. *Fox Television*, 556 U.S. at 515 ("An agency may not . . . depart from a prior policy *sub silentio*" and must give a "more detailed justification" when it contradicts prior factual findings); *Encino Motorcars*, 579 U.S. at 222 (finding agency's "explanation fell short of [its] duty to explain why it deemed it necessary to overrule its previous position"). And EPA ignores that any reliance on its SAFE II analysis would inherently be flawed, given that the analysis was based on multiple assumptions (political, technological, economic, or otherwise) that are now outdated. Elsewhere in the Proposal, EPA itself argues that recent developments (e.g., the repeal of the IRA and shifts in EV sales figures) have rendered some of EPA's 2024 modeling inputs outdated. *See, e.g.*, 90 Fed.

Reg. at 36,326. By EPA's own logic, relying on a 2019–2020 analysis of fleet turnover is even more unreliable and ignores the fact that many of the assumptions underlying the prior analysis have little to no applicability here. *See State Farm*, 463 U.S. at 43 (agency rule is arbitrary where agency entirely failed to consider an important aspect of the problem).

5. Grid impacts

Although the Proposal does not identify electric grid impacts as a rationale for repealing the GHG program, the draft RIA's cost-benefit analysis provides a dollar estimate of "strained electric grid" costs that EPA asserts can be avoided by adopting the Proposal. It is unclear what role this analysis plays in EPA's rulemaking, given express disclaimer that it "has not relied upon any aspect of the draft RIA as justification for this proposed rulemaking." 90 Fed. Reg. at 36,326. To the extent electric grid impacts plays any role at all, the draft RIA's estimate is extraordinarily flawed and cannot provide a rational basis for the Proposal. Equally flawed is the draft RIA's conclusory and passing discussion of other power sector-related topics, including the outlook for thermal generation resources.

a. The draft RIA offers an extraordinarily flawed estimate of "strained electricity grid" costs

The draft RIA asserts that the Proposal avoids "strained electricity grid" costs of between $10 and $21 billion annually by producing a national fleet with fewer EVs requiring charging. Draft RIA at 37, 39, 58, 59. Notwithstanding this broad styling, EPA does not examine the traditional metrics of grid strain such as resource adequacy, operational reliability, or peak load, or related grid impacts like transmission and distribution capacity and congestion. *Compare* 89 Fed. Reg. at 28,017–26 (2024 Multipollutant Rule analysis of electric grid impacts). Rather, EPA purports only to monetize "annual savings of resources for generating electricity." Draft RIA at 40. That is, EPA claims to estimate the costs of the electricity that supposedly need not *be* generated if the GHG program were repealed.

It is difficult to overstate how irrational EPA's estimate is. EPA's analysis is set out principally in Figure RIA-2, and that figure, in turn, is lifted nearly wholesale from a 2023 paper by Fitzgerald & Mulligan.[243] The Fitzgerald & Mulligan paper analyzes a policy that bears little resemblance to the 2024 Multipollutant Rule, and it analyzes a power-grid that bears little resemblance to the current one. In particular, the paper—and thus, by extension, the draft RIA—attempts to analyze the costs of a nationwide fuel economy standard of 80 miles per gallon, not an emission standard like those in the 2024 Multipollutant Rule. The paper assumes that federal policy is the only reason EVs are ever purchased. And the paper assumes that electricity costs dramatically more than it actually does. Because the draft RIA incorporates and relies upon these assumptions—among many other incorrect ones—EPA's "strained electric grid" estimate is unusable.

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[243] T. Fitzgerald & C.B. Mulligan, "The Economic Opportunity Cost of Green Recovery Plans," *Nat'l Bureau of Econ. Rsch.* (Feb. 2023), https://www.nber.org/papers/w30956; *see* Draft RIA at 39–40.

Rather than estimate power-sector costs by using the Fitzgerald & Mulligan paper, EPA should use the same models that allowed it to produce a cogent analysis of power sector costs in the 2024 Multipollutant Rule RIA: the OMEGA model and the Integrated Planning Model.

1) EPA's analysis of the annual electricity required for the Multipollutant Rule is incoherent

In order to estimate the costs of electricity generation attributable to the GHG program, EPA must assign to its standards a share of the national population of EVs and plug-in hybrids and calculate the charging demand of those vehicles. EPA not only provides an incorrect estimate; it offers three. Citing Fitzgerald & Mulligan, the draft RIA asserts that the 2024 Multipollutant Rule and Phase 3 HD Rule "involve 1 TWh more electricity usage than under the proposed rule," i.e., the repeal of the GHG program. Draft RIA at 39–40. But the draft RIA also asserts that, in 2030 alone, EV and plug-in hybrid charging demand "from all vehicle categories will be reduced by approximately 64 terawatt-hour (TWh)" under the Proposal. Draft RIA at 12. Finally, Figure RIA-2 itself (Draft RIA at 40) purports to show that the 2024 rulemakings require *1,000 terawatt-hours* of additional generation per year—as the Fitzgerald & Mulligan paper claims.[244] This is roughly a fourth of the United States' entire annual electricity consumption.[245]

EPA's only source for this estimate is Fitzgerald & Mulligan, which provides no support for the figure.[246] *See also* Gillingham-Jenn 59 (observing this 1,000 TWh figure appears to be an informal "rule of thumb" for how much demand EV charging creates). Moreover, Fitzgerald & Mulligan's estimate is not itself traceable to the GHG standards adopted in EPA's 2024 rulemakings (or any other GHG standard), despite EPA's use of that paper to analyze the effects of the Proposal. Rather, Fitzgerald & Mulligan estimates the effect of a nationwide fuel economy standard of 80 miles per gallon (mpg).[247] But the 2024 Multipollutant Rule and Phase 3 HD Rule prescribed emissions standards, not fuel-economy standards. NHTSA's MY2027-31 fuel-economy standards, which were designed to align with the GHG program—such that a fleet that complies with the GHG standards would also feasibly comply with fuel-economy standards—"would require roughly 50.4 mpg in MY 2031" on average. 89 Fed. Reg. 52,540, 52,548, 52,824-25 (Jun. 24, 2024). An 80 mpg average fuel economy standard thus represents a far more stringent policy scenario than any GHG standard that EPA has ever adopted or proposed. The draft RIA provides no analysis or reason to believe that the vastly different policy modeled in Fitzgerald & Mulligan has substantially the same effects as the GHG standards EPA proposes to repeal.

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[244] Fitzgerald & Mulligan (2023), *supra* note 243, at 8.

[245] U.S. Energy Information Admin., *Electricity explained: Use of electricity* (Dec. 18, 2023), https://www.eia.gov/energyexplained/electricity/use-of-electricity.php (estimating 2022 U.S. electricity usage at 4,070 TWh, the highest amount then recorded).

[246] Fitzgerald & Mulligan (2023), *supra* note 243, at 8.

[247] *Id.* at 4.

Compounding these problems, Fitzgerald & Mulligan's estimate of 1,000 TWh assumes that federal policy is the only reason a consumer would buy an EV. EPA acknowledges this problem: the draft RIA admits that the initial dollar estimate it derives from Figure RIA-2 is inflated "[t]o the extent that the quantity of EVs increase even without regulatory incentives." Draft RIA at 40. Considering the myriad state incentives for EV adoption, as well as consumer demand, it is certainly the case that the quantity of EVs would "increase even without" the fictional 80 mpg fuel economy standard. *See supra* Part II.D.1. Even after acknowledging the problem, EPA does not correct for it. EPA reduces the cost estimate from Fitzgerald & Mulligan by a discount factor corresponding to "the change in the EV share from the year 2025 that is required to meet the year 2032 standards." Draft RIA at 60. But this discount factor still assumes that any increase in the share of EVs between 2025 and 2032 is the result of federal policy.

The attempt to estimate the incremental load attributable to current GHG standards has several additional problems. The analysis ignores the issue of peak demand, focusing exclusively on generation load over time. Peak demand is crucial to consider, especially for flexibly-charging assets like EVs. *See infra* Part IV.B.6.a. If an EV draws power from the grid at a time when there is surplus generation capacity—e.g., in a solar-heavy grid like California's, during a summer workday[248]—the EV can be charged at little cost, because available generation resources are already online and available.[249] EPA's analysis conflates energy (total annual electricity demand) with capacity (power available during peak periods), and simply assumes every increment of new EV energy demand requires new capacity.

EPA cannot rely on Fitzgerald & Mulligan to estimate additional demand attributable to its GHG program. Instead, EPA should use the same peer-reviewed models it relied upon in the 2024 rulemakings. In particular, EPA should rely on the peer-reviewed OMEGA model and the National Renewable Energy Laboratory's EVI-X models that it used in the 2024 Multipollutant Rule. *See* 2024 Multipollutant Rule RIA at 5-1 to 5-9. Given that different regions show widely different EV adoption and use rates, charging demand will also vary by region—as will a given region's readiness to meet new demand. *Id.* EPA should also continue to use the framework it developed in consultation with the Department of Energy for the "Multi-State Transportation Electrification Impact Study."[250] That study drew on expertise across the federal government,

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[248] California Indep. Sys. Operator, *What the Duck Curve Tells Us About Managing a Green Grid* at 3–4 (2016), https://www.caiso.com/Documents/FlexibleResourcesHelpRenewables_FastFacts.pdf.

[249] Jesse Jenkins, *Testimony to the Budget Committee of the United States Senate: The U.S. Electric Vehicle Transition: Recent Trends and Current Outlook* (July 31, 2024), at 10, https://www.budget.senate.gov/imo/media/doc/drjessejenkinstestimonysenatebudgetcommittee.pdf; C. Zhang et al., "Quantifying the Benefits of Electric Vehicles on the Future Electricity Grid in the Midwestern United States," *Applied Energy* 270 (2020), https://doi.org/10.1016/j.apenergy.2020.115174.

[250] U.S. Dept. of Energy, *Multi-State Transportation Electrification Impact Study: Preparing the Grid for Light-, Medium-, and Heavy-Duty Electric Vehicles* (Mar. 2024), https://www.energy.gov/sites/default/files/2024-

including national laboratories. If EPA believes it is no longer reasonable to use the modeling techniques developed in the Transportation Electrification Study, the agency should explain why.

2) EPA relies on unworkable estimates of the costs of renewables

EPA's estimate of "strained electricity grid" costs require a second input: the expense of generating the additional 1,000 TWh of load supposedly traceable to the GHG standards. To estimate this cost, EPA relies again on Fitzgerald & Mulligan. Draft RIA at 39–40. But Fitzgerald & Mulligan's analysis begins with the assumption that the current grid already consists of 80% renewable sources. *Id.*[251] This assumption is impossible to justify given the grid's current composition of 22.7% renewables.[252] EPA's analysis takes it further by mandating that the incremental 1,000 TWh of demand from EVs be served by 80% renewables, again relying on an entirely fictitious national 80% renewable mandate that Fitzgerald & Mulligan assumes as fact. No such policy has ever existed, and its inclusion in the analysis is unjustifiable. Gillingham-Jenn 58.

Even putting aside these wildly unrealistic baseline assumptions, Fitzgerald & Mulligan's estimates of the cost of incremental new renewable resources are much too high as well. Fitzgerald & Mulligan calculate the cost of renewables as approximately $136 per MWh.[253] But in 2025, the unsubsidized levelized cost of electricity was estimated to be $38–$78 per MWh for solar and $37–$86 for wind.[254] Gillingham-Jenn 58–59.

EPA's reliance on Fitzgerald & Mulligan is especially arbitrary given the availability of the Integrated Planning Model (IPM) for estimating energy costs. As EPA explained in the 2024 Multipollutant Rule, the IPM is "a state-of-the-art, peer-reviewed, multi-regional, dynamic, deterministic linear programming model of the contiguous U.S. electric power sector," which it

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03/2024.03.18%20NREL%20LBNL%20Kevala%20DOE%20Multi-State%20Transportation%20Electrification%20Impact%20Study%20FINAL%20DOCKET.pdf.

[251] Fitzgerald & Mulligan (2023), *supra* note 243, at 5 ("[W]e quantify the effects of . . . 80 percent of generation to come from emissions-free sources."); *id.* at 27, Figure 2 (right-most red line, on which analysis depends, reflecting 80% renewable energy and expanded fleet).

[252] The sum of 2024 utility-scale solar generation (218.5 TWh), hydropower generation (242.2 TWh), and renewable sources excluding hydroelectric and solar (515.8 TWh) is 976.5 TWh, divided by total 2024 generation of 4,304 TWh = 22.7%. U.S. Energy Information Admin., *Electric Power Monthly* (Table 1.1) (Jul. 2025), https://www.eia.gov/electricity/monthly/epm_table_grapher.php?t=table_1_01.

[253] Fitzgerald & Mulligan (2023), *supra* note 243, at 8, 22 (Table 2), 27 (Figure 2). Fitzgerald & Mulligan indicate this $136 per MWh projection is a consequence of its (equally untenable) assumption of an 80 mpg average fuel-economy standard that adds 1,000 TWh of charging demand. *Id.* at 8.

[254] Lazard, *Levelized Cost of Electricity+* (Jun. 2025), at 8, https://www.lazard.com/media/uounhon4/lazards-lcoeplus-june-2025.pdf.

has used "for over two decades." 89 Fed. Reg. at 28,020. *See also* Gillingham-Jenn 57. Although EPA objects in passing that the "IPM does not account for difficulties in permitting," Draft RIA at 11, the Fitzgerald & Mulligan paper does not appear to account for permitting "difficulties" either. In any case, the fact that the IPM might—in EPA's view—understate one ancillary element of the costs is not a sufficient reason instead to rely on a single paper with grossly inaccurate assumptions instead.

b. The draft RIA's remaining commentary on grid impacts is arbitrary

The draft RIA also discusses "grid burden," the "outlook for thermal resources," and the "opportunity costs" of EVs for other industrial production. Draft RIA at 12, 39, 59. Importantly, the dollar estimate of "strained electric grid" costs quantifies none of these things—the only cost that Fitzgerald & Mulligan even purports to estimate is the costs of generating enough renewable electricity to power the EVs that result from an 80 mpg fuel-economy standard. Nor has EPA cited grid reliability as a justification in the Proposal. *Cf.* 90 Fed. Reg. at 36,326 (EPA did not rely on "any aspect" of draft RIA as justification for Proposal). EPA fails to give adequate notice for any such rationale for the Proposal.

In any case, the little that the draft RIA says about these non-quantified costs is wrong.

First, the draft RIA acknowledges that the 2024 Multipollutant Rule was expected to lead to "a trend of reduced electricity rates through 2050." Draft RIA at 11. The draft RIA suggests that the reduced retail price trends reflected "a shift towards renewables and increased grid battery storage from power sector tax incentives," such as the Inflation Reduction Act. *Id.* The implication is that, in the face of the OBBBA, which repeals many of these incentives, the 2024 Multipollutant Rule RIA would not have shown decreased rates. *Id.* at 11-12. But the draft RIA's insinuation misunderstands the mechanism by which more EVs reduce retail rates. As transportation electrification expands, higher demand provides scale economies that reduce per-unit retail prices, even when additional capacity is required. EPA has failed to consider this aspect of the problem. *See infra* Part IV.B.6.b.

Second, the draft RIA falsely suggests that significant new growth in electricity demand driven by "artificial intelligence" data centers was not taken into account during development of the 2024 rules. In fact, in the 2024 Multipollutant and Phase 3 HD Rules, EPA assessed the reliability of the power system across various scenarios, including scenarios with higher demand growth, and determined they were feasible. In particular, EPA performed scenario analyses which specifically assessed the combined impact of increasing electricity demand from data centers and other sources alongside the demand from EVs produced in response to current GHG standards, and it found that the power sector could meet all resource adequacy requirements.[255] Gillingham-Jenn 51–53.[256]

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[255] EPA, *IPM Sensitivity Runs Memo* (April 2024), at 27–28, EPA-HQ-OAR-2018-0794-6972 ("Under the high demand sensitivity, power sector demand was updated to account for the EV electricity demand associated with the LDV, MDV and HDV rulemakings (Vehicle Rules) as well as the non-

Relatedly, the draft RIA contends that eliminating the GHG standards would materially improve reliability, stating only that this "would reduce the overall demand for electricity, which in turn may incrementally improve the reliability outlook for the sector." Draft RIA at 12. However, EPA fails to provide any new analysis, data, or modeling to justify this assertion. EPA appears to base this assessment only on annual energy demand. *See id.* (comparing estimated EV charging demand of 64 TWh and data center demand of 600 TWh in 2030). But grid reliability depends far more on peak demand—i.e., whether the power generation supply can cover demand at the time when demand is at its highest—than annual energy demand, and EV charging's inherent flexibility provides powerful benefits for reducing peak demand. *See infra* Part IV.B.6.a. Focusing on annual energy depend is simply the wrong metric for "improv[ing] the reliability outlook" of the power sector. Gillingham-Jenn 51.

Grid reliability also depends on transmission, and in the 2024 rulemakings, EPA found that the GHG standards would have a very small impact on transmission needs, equivalent to approximately 1% of transmission needs between now and 2050. 89 Fed. Reg. at 28,020–21. EPA outlined pathways to meet transmission needs that are already being used in the industry without building new lines, including re-using existing transmission rights of ways (avoiding the need to secure and permit a new route), reconductoring existing transmission lines with advanced conductors capable of carrying more power, and use of grid enhancing technologies and storage as a transmission asset to more effectively use existing lines. *Id.* at 28,021. EPA ultimately concluded that "it is reasonable to anticipate that transmission capacity will not constrain the increased demand for electricity projected in our central case modeling." *Id.* at 28,022. The Proposal provides no evidence that would support reaching a different conclusion.

Third, the draft RIA argues that rescinding the Multipollutant Rule would be a "net improvement to energy and capacity markets for thermal resources." Draft RIA at 12. This claim is wrong, *see* Gillingham-Jenn 55, as is the unexplained assumption that the "outlook for thermal resources" is a standalone value the agency is entitled to pursue under Clean Air Act section 202. *See supra* Part IV.A.2.[257]

EV load from the AEO 23 High Economic Growth Case … . IPM includes various constraints that model resource adequacy requirements – even under the higher demand environment, EPA projects that these requirements can be met, and the cost of compliance cited here is fully inclusive of the costs of meeting these constraints.").

[256] Nor can EPA belatedly invoke the U.S. Department of Energy's July 2025 Resource Adequacy Report to justify any final rule based on a reliability rationale. *See* 42 U.S.C. § 7607(d)(3)(A), (B); *Conn. Light & Power*, 673 F.2d at 530 (agency must "identify and make available technical studies and data that it has employed in reaching the decisions to propose particular rules" in time for public comment). Moreover, that report is subject to numerous defects that render it wholly unreliable. Gillingham-Jenn 53–54.

[257] If this statement indicates EPA's true motives in taking the present action—improving the outlook for fossil-fuel resources—EPA must disclose that rationale clearly. *See* EF Comment Section VI.D.2 (discussing the Proposal's pretextual nature).

Fourth, the draft RIA wrongly cites a 2022 emergency action in California to suggest that EVs imperil the reliability of the grid. That grid reliability event was the result of an "extreme heat wave" and "record-breaking electricity demand as consumers turned up their air conditioning to keep cool."[258] To the extent EPA wishes to protect the public welfare against such grid incidents, EPA should adopt policies that reduce climate-warming pollution rather than repeal them.

In any case, in the three years since that emergency grid action, rates of EV use in California have continued to surge, and California has nonetheless not experienced a single grid emergency.[259] The state's reliable grid is a credit to the embrace of grid-scale battery storage,[260] not policy that aims to shut out cleaner cars. Indeed, EVs contribute to grid reliability because they can charge at low-demand times and even store energy that can be sent back to help the grid during high-demand times. *See infra* Part IV.B.6.a. Because of the ongoing statewide build-out of new battery storage and renewable generation resources, the California Energy Commission projects that California will meet grid reliability standards through 2035, even with the recent addition of 3 GW of previously unplanned-for data center load to the state demand forecast.[261]

Fifth, the draft RIA argues that electricity devoted to EVs comes with an "opportunity cost," namely, less capital devoted to "alternative uses such as industrial expansion, data-center growth," and less money "earmarked for schools." Draft RIA at 39. This baffling claim is presented without citation. In fact, money for grid upgrades typically is raised through regulated electricity rates, utility bonds, or project-specific investors, not from general public funds such as education budgets. Nor does the draft RIA provide any basis to believe that electricity rates draw on the same pool of capital that fund private industry or data-center growth.

6. Broader social benefits of the GHG program

As discussed *supra* in Part IV.A.2, EPA's proposal to evaluate GHG standards' impact on vehicle retail economics as its sole public health and welfare analysis is unsupportable under the statutory text. But even under EPA's proposed reading, it would be arbitrary and irrational

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[258] U.S. Energy Information Admin., "California Consumers Respond to Appeals for Electricity Conservation During Heatwave," *Today in Energy* (Sept. 28, 2022), https://www.eia.gov/todayinenergy/detail.php?id=54039.

[259] Cal. Indep. Sys. Operator, *Summary of Restricted Maintenance Operations, Flex Alerts, Transmission and Energy Emergencies Issued from May 2022 to Present* (June 12, 2025), at 1-2, https://www.caiso.com/documents/grid-emergencies-history-report-1998-to-present.pdf.

[260] Cliff Rose & Laura Fletcher, "The CAISO Energy Storage Revolution: Meeting California's Climate and Load Challenges," *Yes Energy* (2025), https://blog.yesenergy.com/yeblog/the-caiso-energy-storage-revolution.

[261] Cal. Energy Comm'n, *California Energy Resource and Reliability Outlook, 2025*, CEC-200-2025-011 (Jul. 1, 2025), at 5, https://www.energy.ca.gov/publications/2025/california-energy-resource-and-reliability-outlook-2025.

for EPA to examine vehicle affordability, consumer choice, and fleet turnover as part of a "public welfare" analysis while excluding consideration of other broader social benefits of GHG standards. In past rulemakings, EPA conducted significant analyses of grid reliability benefits, impacts on auto sector employment, impacts on auto sector manufacturing and supply chains, and energy security, identifying significant economic benefits from GHG standards that encourage and reward investments in the production of cleaner vehicles. *See, e.g.*, 89 Fed. Reg. at 28,113–15, 28,123–25; 89 Fed. Reg. at 29,705–08, 29,713–15. While those prior rulemakings correctly did not style such benefits as part of the "public welfare" analysis, they are as much "effects on economic values and on personal comfort and well-being" as the purported disbenefits EPA cites in the Proposal. 90 Fed. Reg. at 36,313 (quoting 42 U.S.C. § 7602(h)). EPA has failed to give sufficient notice of its reasons for considering *some* "economic values" while giving no consideration to others it has previously evaluated; has failed to give any notice of how it believes the proposed repeal would impact these previously considered economic benefits; and has offered no reason for its change in position—or indeed, displayed awareness that it *is* changing its position on the broader social benefits of cleaner vehicles. *See Fox Television*, 556 U.S. at 515.

a. Grid reliability benefits

EVs and plug-in hybrid vehicles provide a unique benefit for electrical grids through managed charging, sometimes called "smart charging." As a large body of scientific literature recognizes, and an increasing number of American jurisdictions are demonstrating in practice, EVs that charge in managed fashion offer many benefits to the grid. These benefits include reductions in peak load and smoothed voltage. EPA has acted irrationally in excluding such benefits from its consideration of GHG standards' social impacts.

From the "grid point-of-view," EVs are effectively ready-made "mobile storage assets that can be used in a similar manner to stationary batteries."[262] That is because EVs "travel for only 4–5% of the time, [while] the rest of the day, they are parked in home garages or parking lots."[263] As mobile storage assets, the grid benefits of EVs are many. Managed charging allows EVs to provide back-up emergency power.[264] EVs integrated with the grid also provide "voltage

[262] Smart Electric Power Alliance, *The State of Bidirectional Charging in 2023* (Sept. 2023), at 9, https://perma.cc/V3DF-H726.

[263] O. Sadeghian, et al., "A Comprehensive Review on Electric Vehicles Smart Charging: Solutions, Strategies, Technologies, and Challenges," *J. of Energy Storage* 54:105241 (Oct. 2022), https://www.sciencedirect.com/science/article/pii/S2352152X22012403.

[264] M. Brown & A. Soni, "Expert Perceptions of Enhancing Grid Resilience with Electric Vehicles in the United States," *Energy Rsch. & Soc. Sci.* 57:101241 (2019), https://www.ourenergypolicy.org/wp-content/uploads/2021/01/BrownSoni-Grid-ResilienceEVs-ERSS.pdf.

control and frequency regulation,"[265] which serves to protect grid infrastructure from damaging fluctuations in voltage.[266]

Managed charging allows EVs to provide valuable "demand-smoothing" benefits to grid reliability by both reducing peak loads and increasing off-peak demand. One study concluded that over a seven year period, EVs could contribute demand-smoothing benefits "equivalent to between $12.8 to $15.4 billion of stationary storage."[267] EVs can reduce peak loads across the entire grid.[268] According to one study, if EVs were in widespread use in the Midwest and took part in managed charging, peak loads would decline by an "astonishing extent" relative to a scenario with fewer EVs on the road: in particular, EVs would reduce the annual average peak demand by 14.7 GW.[269] In that scenario, there only were modest increases in maximum peak demand of 1.2 GW, and in annual average peak demand of 355 MW (.35 GW).[270] Another study—focused on New York City—showed that managed charging could provide "10% of the peak load of New York City" at a value of "$110 million per year."[271] In a scenario where the IRA credits and the 2024 Multipollutant Rule were fully implemented and EVs used simple technology to focus their charging at off-peak times, the entire EV sector would account for just 41 GW of peak demand by 2030, and 66 GW by 2035.[272]

Many jurisdictions and utilities have already employed managed charging technologies. For example, in 2023, the New York Public Service Commission approved managed charging programs for commercial electric vehicle customers,[273] building on the residential managed charging programs established in 2022.[274] In one California pilot program, the use of technology

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[265] *Id*.

[266] N. Panossian et al. (2022), *supra* note 104, at 27–40.

[267] J. Coignard et al., "Clean Vehicles as an Enabler for a Clean Electricity Grid," *Env't Research Letters* 13:054031 (2018), at 6, https://iopscience.iop.org/article/10.1088/1748-9326/aabe97/pdf.

[268] D.B. Richardson, "Electric Vehicles and the Electric Grid: A Review of Modeling Approaches, Impacts, and Renewable Energy Integration," *Renewable & Sustainable Energy Reviews* 19 (2013), at 247–254.

[269] Zhang et al. (2020), *supra* note 249, at 8.

[270] *Id.* at 11.

[271] Sadeghian et al. (2022), *supra* note 263, at 9.

[272] Jesse Jenkins, *Testimony to the Budget Committee of the U.S. Senate*, *supra* note 249, at 10.

[273] N.Y. Pub. Serv. Comm'n, Case No. 22-E-0236, Proceeding to Establish Alternatives to Traditional Demand-Based Rate Structures for Commercial Electric Vehicle Charging, Order Implementing Immediate Solutions Programs (Nov. 20, 2023), https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7b0018EE8B-0000-C41B-9FEB-329746D54BE6%7d.

[274] N.Y. Pub. Serv. Comm'n, Case No. 18-E-0138, Proceeding on Motion of the Commission Regarding Electric Vehicle Supply Equipment and Infrastructure, Order Approving Managing Charging

equipping EVs to respond to grid price signals had the effect of shifting 98% of EV charging to off-peak times, and reducing monthly utility bills by $10–$20.[275] In a second, the use of price signals moved 93% of charging out of high-electricity demand windows.[276] The very same 2022 California heatwave and grid event that the draft RIA cites to justify reliability concerns is, in fact, a reliability success story. *See* Draft RIA at 59. When California grid operators and officials urged residents to delay electricity consumption, including EV charging, until off-peak hours, Californians did so in high numbers, reducing demand by more than 2,100 MW within five minutes of the alert and averting rolling blackouts.[277] In general, EV charging is far more flexible a category of electricity demand than, say, air conditioning during a heatwave, such that EVs' increased share of peak demand means more of that peak demand is dependably flexible—a benefit for reliability, not a detriment.

EPA is not unaware of the benefits of managed charging. In the 2024 Multipollutant Rule and accompanying regulatory impact analysis, EPA stated a national-level study "also found that the Action case, with managed charging, provides significant distribution system benefits relative to unmanaged charging both financially and in terms of the ability to defer necessary distribution system upgrades… [and] requires significantly less electricity at peak times . . . illustrating the electricity system benefits of employing grid integration technologies and techniques." 89 Fed. Reg. at 28,025.

Beyond managed charging, bidirectional charging, in which EVs can return stored power to the grid, provides further benefits. Several popular EVs on the current market are already equipped for bidirectional charging, including the F-150 Lightning and the Hyundai Ioniq.[278] Manufacturers are already offering many brands of bidirectional charging equipment and software.[279] PG&E has established a partnership with GM to "leverage GM's bidirectional EV charging technology, which allows compatible GM EVs to supply power back to homes during outages."[280] As part of this pilot program, PG&E has developed incentives of upwards of $2,500

Programs with Modifications (July 14, 2022), https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7bA1E3F84E-0710-4073-865F-FE7D4816B76B%7d.

[275] P. Ciampoli, Am. Pub. Power Ass'n, "Dynamic Pricing Outperforms Time-of-Use in Calif. CCA EV Charging Pilot" (Jun. 25, 2025), https://www.publicpower.org/periodical/article/dynamic-pricing-outperforms-time-use-calif-cca-ev-charging-pilot.

[276] D. Black et al., Lawrence Berkeley Nat'l Lab'y: Grid Integration Group, *Survey and Gap Prioritization of U.S. Electric Vehicle Charge Management Deployments* (Jun. 2024), at 11, https://eta-publications.lbl.gov/sites/default/files/scm_gap_analysis_.pdf.

[277] U.S. EIA, "California Consumers Respond to Appeals for Electricity Conservation During Heatwave," *supra* note 258.

[278] *The State of Bidirectional Charging in 2023*, *supra* note 262, at 46.

[279] *Id.* at 49.

[280] PG&E Corp., "GM and PG&E Paving the Way to Turn Electric Vehicles into Home Energy Assets," (Mar. 13, 2025), https://investor.pgecorp.com/news-events/press-releases/press-release-

for residential and customers who incorporate bidirectional charging, and $5,000 for groups of users who incorporate EVs into microgrids.[281] Since 2019, Dominion Energy in Virginia has invested in bidirectional charging programs for school buses.[282] Xcel Energy in Boulder, Colorado has deployed bidirectional chargers and infrastructure as part of a program to examine "how EVs can be efficiently integrated onto its electric grid."[283] Massachusetts and the state's National Grid utility have similarly deployed 100 bidirectional vehicle chargers around the state.[284] New York City is home to at least two V2G pilot projects. In August 2022, Revel— a Brooklyn-based electric mobility and infrastructure company—launched the city's first V2G system at its Red Hook warehouse in Brooklyn.[285] The three bidirectional chargers at the facility can export 45 kW back to the grid during peak demand hours, supporting grid resilience.[286] Likewise, the New York City School Bus Umbrella Services is electrifying the buses at its Bronx Zerega depot, where it is also deploying a pilot program for V2G technology.[287] One can find successful programs as well in Georgia, Michigan, Oregon, and Tennessee.[288] In San Diego, California, seven electric school buses at Cajon Valley Union School District used bidirectional

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details/2025/GM-and-PGE-Paving-the-Way-to-Turn-Electric-Vehicles-into-Home-Energy-Assets/default.aspx.

[281] PG&E Corp., *Vehicle-to-Everything (V2X) Pilot Program*, https://www.pge.com/en/clean-energy/electric-vehicles/getting-started-with-electric-vehicles/vehicle-to-everything-v2x-pilot-programs.html.

[282] Smart Electric Power Alliance, *Case Study: Dominion Energy—Electric School Bus Fleet V2G: The State of Bidirectional Charging in 2023* (Sept. 2023), https://perma.cc/9LYU-E576.

[283] Robert Walton, "Fermata, Xcel Energy Launch 'Transformative' V2X Bidirectional Charging Pilot in Colorado," *Utility Dive* (May 29, 2024), https://www.utilitydive.com/news/fermata-xcel-energy-launch-v2x-bidirectional-charging-pilot/717321/.

[284] Brian Martucci, "Massachusetts to Deploy 100 Bidirectional EV Chargers in First-of-Its-Kind 'V2X' Pilot," *Utility Dive* (Mar. 4, 2025), https://www.utilitydive.com/news/massachusetts-bidirectional-ev-chargers-v2g-v2x/741525/.

[285] *See* Fermata Energy, "Revel, Fermata Energy, NineDot Energy Launch First V2G System on NYC's Grid" (Aug. 22, 2022), https://fermataenergy.com/article/revel-fermata-energy-ninedot-energy-launch-first-v2g-system-on-nycs-grid.

[286] *Id*.

[287] NYSERDA, "Electrifying School Buses in the Bronx and Beyond (ESB3)," https://www.nyserda.ny.gov/All-Programs/New-York-Clean-Transportation-Prizes-Initiative/Clean-Transportation-in-Action/Electrifying-School-Buses-in-the-Bronx-ESBB; NYC School Bus Umbrella Servs., *Electric Vehicle Activity Report*, https://www.nycsbus.com/evar.

[288] S.D. Wong et al., "Do Incentives Make a Difference? Understanding Smart Charging Program Adoption for Electric Vehicles," *Transp. Research Part C: Emerging Technologies* 151:104123 (June 2023), https://www.sciencedirect.com/science/article/abs/pii/S0968090X23001122.

charging capabilities to supply electricity to the overwhelmed grid during the same historic 2022 heatwave mentioned above, powering 452 homes each day.[289]

The benefits of EVs to the grid are substantial, on the order of billions of dollars a year. EPA's failure to consider these benefits is irrational and arbitrary.

b. Downward pressure on retail electricity rates

EPA also irrationally excludes EVs' potential to lower retail electricity rates from its evaluation of the social impacts of GHG standards that encourage EV production. "As the cost[s] of providing electric service . . . are recovered across more units of electricity sold, electrification may cause downward pressure on electricity rates."[290] Utility revenue requirements include a substantial portion of non-marginal costs that do not increase with load, such as the fixed costs of transmission and distribution systems (including wildfire risk mitigation) and public purpose programs.[291] Increased electrification spreads these fixed costs across a larger demand load (i.e., more units of electricity), lowering per-unit costs through improved utilization of existing and new infrastructure.[292]

That is in part why EPA previously found, in the Multipollutant Rule RIA, that the Rule would bring about a "trend of reduced electricity rates through 2050 despite an increase in electricity demand through 2050." Multipollutant Rule RIA at 5-19 (Table 5-4); *see* Draft RIA at 11. Other studies have confirmed the point. A study by Synapse assessed that over the last 11 years, EV drivers have "contributed approximately $3.12 billion more than their associated costs [to the grid], driving rates down for all customers."[293] EVs "have increased utility revenues more

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[289] Alejandro Lazo, "How California's Electric Cars Could Feed the Grid and Power People's Homes" *KQED* (July 20, 2023, updated July 16, 2024), https://www.kqed.org/news/11956089/how-californias-electric-cars-could-feed-the-grid-and-power-peoples-homes.

[290] The Pub. Advocates Office, Cal. Pub. Utils. Comm'n, *Distribution Grid Electrification Model: Fact Sheet* (Aug. 2023), at 1, https://www.publicadvocates.cpuc.ca.gov/-/media/cal-advocates-website/files/press-room/reports-and-analyses/230824-public-advocates-distribution-grid-electrification-model-fact-sheet.pdf.

[291] Cal. Pub. Utils. Comm'n, *Utility Costs and Affordability of the Grid of The Future: An Evaluation of Electric Costs, Rates, and Equity Issues Pursuant to P.U. Code Section 913.1* (May 2021), https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/office-of-governmental-affairs-division/reports/2021/senate-bill-695-report-2021-and-en-banc-whitepaper_final_04302021.pdf.

[292] *Id.*; Kevala, *Electrification Impacts Study Research Plan*, Proceeding R.21-06-017 (Mar. 29, 2022), https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M508/K422/508422368.PDF; S. Elmallah, et al., "Can Distribution Grid Infrastructure Accommodate Residential Electrification and Electric Vehicle Adoption in Northern California?" *Env't Rsch: Infrastructure & Sustainability* 2:045005 (Nov. 9, 2022), https://iopscience.iop.org/article/10.1088/2634-4505/ac949c/meta; Li & Jenn (2024), *supra* note 105.

[293] S. Shenstone-Harris et al., Synapse Energy Economics, Inc., *Electric Vehicles are Driving Rates Down for All Customers* (Jan. 2024), at 1, https://www.synapse-

than they have increased utility costs."[294] Another recent study likewise found that, in California, the costs of building infrastructure to accommodate high volumes of EVs is "offset by downward pressure on electricity rates due to the overall growth in electricity consumption, leading to an overall rate reduction between $0.01 and $0.06/kWh."[295]

EPA irrationally fails to acknowledge and model EVs' downward pressure on retail electricity rates when evaluating the broader social impacts of GHG standards.

c. Employment impacts

Historically, EPA has analyzed the impact of its GHG standards on employment in various sectors, primarily automotive manufacturing; yet the Proposal never attempts such an analysis here. When EPA adopted the 2024 Multipollutant Rule, it concluded that there is a greater potential for overall job growth in the sectors analyzed than potential job losses, and that the potential for positive employment impacts would increase over time. 89 Fed. Reg. at 28,123. Similarly, when EPA adopted the Phase 3 HD Rule, it cited a study indicating that the growth of the EV sector would lead to a net increase in jobs. 89 Fed. Reg. at 29,705, 29,706. These prior findings, which the Proposal does not reanalyze or repudiate, strongly suggest the repeal of those standards will have negative employment impacts. Indeed, common sense suggests that such a dramatic and abrupt termination of the GHG program, which has been the regulatory backdrop for billions of dollars in public and private investment, *supra* Parts II.E, III.B.2, is all but certain to kill jobs, making EPA's silence on this issue all the more telling.

In adopting the 2024 Multipollutant Rule, EPA cited positive growth in job development from the expansion of EV manufacturing. 89 Fed. Reg. at 28,123-24. EPA observed that while EVs have fewer parts than ICE vehicles, EVs require more labor-hours to build than ICE vehicles when battery-pack assembly time is included, supporting greater employment. 2024 Multipollutant Rule RIA at 4-71 to 4-72; Phase 3 HD Standards RIA at 741. EPA projected net automotive sector job increases in 2032 ranging from 17,400 to 188,100 from the light- and medium-duty standards, with the loss of jobs in ICE vehicles' production and assembly more than offset by an increase in jobs in EV and battery production. 2024 Multipollutant Rule RIA at 4-81.

EPA cited evidence from the U.S. Department of Energy showing "more than 80,000 potential jobs in U.S. battery manufacturing and supply chain, and more than 50,000 potential jobs in U.S. EV component and assembly have been announced since 2020." 89 Fed. Reg. at 28,124. An Environmental Defense Fund report showed that national job growth in the EV sector

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energy.com/sites/default/files/Electric%20Vehicles%20Are%20Driving%20Rates%20Down%20for%20All%20Customer%20Update%20Jan%202024%2021-032.pdf.

[294] *Id.*

[295] Li & Jenn (2024), *supra* note 105, at 1.

would continue, citing announcements of over 140,000 new jobs in the U.S. since 2015, with 60,000 of those being in battery manufacturing. *Id*. The U.S. Energy and Employment Report showed an increase in jobs related to the energy sector from 2020 to 2021, at faster rate than the workforce overall, with jobs in clean-energy vehicles increasing by almost 21 percent. *Id*. EPA additionally stated that employment in the electrical equipment manufacturing sector (involved in production of EV components) increased from 3.3 employees per million dollars in sales to 4.1 employees per million dollars in sales from 2007 to 2022. 89 Fed. Reg. at 29,705. EPA highlighted comments it received on the Phase 3 HD Rule that showed significant job creation in response to battery production demand, with an expectation that many more jobs would be created by the need for battery and charging infrastructure. 89 Fed. Reg. at 29,706. For example, the Environmental Defense Fund noted that more than 70,000 jobs have been created in U.S. battery and battery component production since 2015. Phase 3 HD Rule RIA at 742.

EPA also found that jobs in ICE vehicle sectors are also likely to be transferrable to the EV sector. It cited U.S. Department of Energy research finding that a wide range of jobs in the ICE sector have a relatively high similarity in the needed skill sets to jobs in the EV sector. 89 Fed. Reg. at 28,123. EPA also cited to projects focused on training new and existing employees for jobs in EV production, maintenance and repair, and charging infrastructure. 89 Fed. Reg. at 29,706. EPA found that, as of 2023, about 20,000 people had been certified to install EV charging stations through a national Electric Vehicle Infrastructure Training Program. Phase 3 HD Rule RIA at 116.

EPA also concluded that the growth of charging infrastructure in the U.S. was expected to create jobs in sectors including electrical installation, maintenance and repair, charger assembly, general construction, software maintenance and repair, planning and design, and administration and legal. 2024 Multipollutant Rule RIA at 4-83; Phase 3 HD Rule RIA at 747.

EPA noted a significant amount of funding had already been invested into supporting employment development in the electric vehicle sectors. In January 2024, the Joint Office of Energy and Transportation announced $46.5 million in federal funding to support various projects, including some related to workforce development. 89 Fed. Reg. at 28,013. EPA cited a White House estimate that over $25 billon in commitments to expand the U.S. charging network had been announced as of January 2024. Phase 3 HD Rule RIA at 115.

On the state level, the EPA identified multiple states that have committed to investments in the development of EV infrastructure, specifically regarding employment. Since 2021, California's Workforce Development Board has been focused on furthering the development of an equitable ZEV industry by ensuring access to high quality jobs. 89 Fed. Reg. at 28,127. Michigan's Department of Labor and Economic Opportunity created the Electric Vehicle Jobs Academy to support those training to be in the advanced automotive mobility and electrification industry. *Id.* The University of Michigan also contracted with the state to open the Electric Vehicle Center, which focuses on research and development of a highly skilled workforce. *Id.* Tennessee is co-locating a new Tennessee College of Applied Technology which will house an EV manufacturing facility built by Ford to provide specialized technical training. *Id.* Illinois has invested in EV training programs and in workforce development and community support in the

clean energy sector. *Id.* A study from Ohio estimated that there would be 25,000 new jobs in EV manufacturing and maintenance, battery development, and charging station installation and operations in the state by 2030. *Id.*

The Proposal itself never examines employment effects; the draft RIA asserts only, and without citation, that "[i]nterference with vehicle markets … has the potential to reduce employment, in some of the same ways that a tax on employment would." Draft RIA at 40. This conclusory statement is no substitute for the detailed analysis of employment effects that EPA performed in the 2024 rulemakings. Its failure to do so here is arbitrary.

d. Domestic manufacturing

Similarly, the Proposal never attempts to analyze its impact on domestic manufacturing, as EPA did in adopting the current GHG standards. That omission is particularly irrational given Congress's focus on clean vehicle technologies like EVs as an industrial policy to return or "on-shore" manufacturing to the United States and keep the U.S. automotive sector competitive in a global market. *See supra* Part II.C.3.

In the 2024 Multipollutant Rule, EPA concluded that there is "a tremendous opportunity for increases in domestic manufacturing" due to the increased production of EVs anticipated under the GHG program. 89 Fed. Reg. at 28,123. These increases in domestic manufacturing have been strongly supported by Congress through the IIJA, IRA, and CHIPS Act, among others. *Id.*; *see also supra* Part II.C. EPA also noted that major auto manufacturers were significantly expanding assembly plant manufacturing capacity, as well as battery and cell manufacturing facilities, to meet global demand for EVs. 2024 Multipollutant Rule RIA at 2-90. In response to comments on vehicle manufacturing in the Phase 3 HD rulemaking, EPA observed that domestic manufacturing capacity is increasing, and that evidence continues to support the previous assessment that domestic and global battery manufacturing is well positioned to deliver sufficient battery production to allow manufacturers to meet the standards. Phase 3 HD Rule RIA at 63, 115, 269.

EPA also identified strong auto industry momentum toward electrification. 89 Fed. Reg. at 27,992. A Center for Automotive Research analysis showed that $36 billion of $38 billion in total auto manufacturing facility investments were marked for electrification-manufacturing in 2021. *Id.* at 27,993. EPA highlighted examples of electrification investments by industry, including Hyundai's investment of $5.5 billion to fund new battery and electric vehicle manufacturing facilities in Georgia, Toyota's 2021 announcement of new investment in battery production to focus on electrification, and a new joint venture between Daimler Trucks, Cummins, and PACCAR for a new battery factory in the U.S. *Id.* at 27,993–94, 27,999, 29,705. As of January 2024, more than 600 U.S. facilities across the battery supply chain were in various stages of development. *Id.* at 28,047–48. EPA noted that private companies have begun to enter the battery recycling market, reaching agreements with manufacturers to use the recycled materials for domestic battery manufacturing. *Id.* at 28,056. As for the EV charging industry, the Department of Energy estimated there would be over $500 million in investments for domestic

manufacturing of charging equipment from companies planning to produce over one million EV chargers in the U.S. each year. Phase 3 HD Rule RIA at 115.

The Proposal does not address the impacts on domestic manufacturing of repealing GHG standards after these massive investments in electrification. *See also supra* Part III.B.2. Nor does EPA consider the potential impacts of the U.S. automotive sector losing its competitive edge against global rivals. Considering Congress's keen interest in EVs' role in both domestic manufacturing and global competitiveness, that omission from EPA's evaluation of GHG standards' social impacts is particularly arbitrary.

e. Energy security

Finally, EPA's evaluation of the broader social benefits of GHG standards has historically included the effects of reduced petroleum dependence on energy security, including reduced exposure to oil market shocks and the national security risks associated with oil imports and infrastructure. 89 Fed. Reg. at 27,842, 28,092-93; 89 Fed. Reg. at 29,493, 29,593, 29,713-15. As President George W. Bush observed in signing the Energy Independence and Security Act of 2007: "One of the most serious long-term challenges facing our country is dependence on oil—especially oil from foreign lands. It's a serious challenge. . . . Because this dependence harms us economically through high and volatile prices at the gas pump; dependence creates pollution and contributes to greenhouse gas [e]missions. It threatens our national security by making us vulnerable to hostile regimes in unstable regions of the world. It makes us vulnerable to terrorists who might attack oil infrastructure." 89 Fed. Reg. at 28,092 n.1337 (citing 2007 U.S.C.C.A.N. S25, 2007 WL 4984165). *See also supra* Part III.B.2.c.

In its 2024 rulemakings, EPA concluded that the greater use of electricity for EVs anticipated under the GHG standards would improve the U.S.'s energy security and energy independence position, estimating annual benefits from the 2024 Multipollutant Rule through 2055 at $1.5 billion to $2.1 billion. 89 Fed. Reg. at 28,114, 28,093. The Phase 3 HD Rule estimated benefits from reductions in energy security externalities of petroleum consumption at about $0.45 billion. 89 Fed. Reg. at 29,593. In adopting revised MY2023–26 light-duty GHG standards, EPA estimated energy security benefits at $7 billion to $14 billion, primarily due to reductions in U.S. petroleum imports. 86 Fed. Reg. at 74,443, 74,498–99, 74,508. EPA also found that, by supporting the expansion of domestic supply chains for critical minerals and batteries, the GHG standards could improve the U.S.'s mineral security against global competitors like China. 89 Fed. Reg. at 29,495.

Here again, the Proposal contains no analysis of energy security, energy independence, national security, or mineral security to counter any of its prior findings. Rather, EPA arbitrarily excludes any consideration of energy independence benefits from its evaluation of the broader social impacts of the GHG program.

V. EPA'S REPEAL IS PROCEDURALLY DEFECTIVE AND MUST BE WITHDRAWN

A. EPA Administrator Zeldin Has Prejudged the Outcome of the Proposed Repeal

As discussed in the States and Local Governments' Endangerment Finding Comment, EF Comment Section VI.D.1, Administrator Zeldin's intemperate, unequivocal denunciations of the 2009 Endangerment Finding and vehicle GHG standards based on such findings show an "unalterably closed mind on matters critical to the disposition of th[is] proceeding," requiring either disqualification of the Administrator or withdrawal of the Proposal. *Ass'n of Nat'l Advertisers v. FTC*, 627 F.2d 1151, 1170 (D.C. Cir. 1979); *Nehemiah Corp. of Am. v. Jackson*, 546 F. Supp. 2d 830, 847 (E.D. Cal. 2008) (describing the appropriate remedies when an agency official has prejudged the outcome of a particular matter). All of the evidence discussed in that comment likewise satisfies the high bar for prejudgment as to the proposed repeal of the GHG program.

In addition to prejudging the withdrawal of the 2009 Endangerment Finding and the repeal of the GHG program, Administrator Zeldin has also prejudged two narrower factual and legal issues by consistently characterizing the GHG standards as an "electric vehicle mandate," and by zeroing out the social cost of carbon metric. A preexisting internal directive to reach a particular result is strong evidence that the official is not "free, both in theory and in reality, to change his mind" in the agency proceedings. *Nat'l Advertisers*, 627 F.2d at 1172; *see Int'l Snowmobile Mfrs. Ass'n v. Norton*, 340 F. Supp. 2d 1249, 1260 (D. Wyo. 2004) (citing Assistant Secretary's memorandum, prior to the conclusion of environmental review, "directing the agency to prohibit snowmobile access in national park units" and providing "a sweeping condemnation of all recreational snowmobile use in the National Park System"). Here, President Trump's *Unleashing American Energy* executive order, Administrator Zeldin's commentary on this order, and the White House Office of Management and Budget (OMB) memorandum on the social cost of carbon evidence such an internal directive and show the Administrator has already made up his mind on critical legal and factual issues.

1. Administrator Zeldin predetermined that GHG standards function as an electric vehicle mandate without notice or comment

Although general political or ideological stances, either on Administrator Zeldin's part individually or on the administration's part generally, are not enough to show prejudgment, *Ass'n of Nat'l Advertisers*, 627 F.2d at 1170, President Trump's executive orders on climate policy and vehicle regulations are specific and binding on the Administrator. President Trump's directives in the *Unleashing American Energy* executive order and Administrator Zeldin's embrace of those directives go far beyond a simple ideological preference for gas-fueled vehicles, and reflect an unshakable, predetermined commitment to the specific policy actions Administrator Zeldin proposed here.

President Trump's *Unleashing American Energy* executive order required the Administrator to preemptively determine specific, contested factual matters, without first seeking public input. Section 2 of that order declared it "the policy of the United States" to "eliminate the 'electric vehicle (EV) mandate' … by [*inter alia*] considering the elimination of … ill-conceived government-imposed market distortions that favor EVs over other technologies and effectively mandate their purchase by individuals, private businesses, and government entities alike by rendering other types of vehicles unaffordable." Exec. Order No. 14,154, § 2, 90 Fed. Reg. 8353 (Jan. 29, 2025) (*Unleashing* EO). The next section then required EPA, within 30 days, to "identify those agency actions that impose an undue burden on the identification, development, or use of domestic energy resources—with particular attention to oil, natural gas, [and] coal … resources—or that are otherwise inconsistent with the policy set forth in section 2" and "develop and begin implementing action plans to suspend, revise, or rescind all agency actions identified as unduly burdensome." *Unleashing* EO § 3(a), (b), 90 Fed. Reg. at 8354.

Neither EPA's identification of regulations contrary to the *Unleashing* EO's policy against "EV mandates" nor its action plan to suspend, revise, or rescind such regulations were disclosed to the public (even now) or open for public comment. As discussed *supra* in Part IV.B.3, EPA previously undertook detailed modeling of alternative compliance pathways to demonstrate and conclude that the GHG standards did not "effectively mandate" the purchase of EVs. 89 Fed. Reg. at 28,057, 28,076–80. At the very least, EPA must conduct rigorous analysis and solicit public comment on whether the existing GHG standards function as an "effective mandate" for EVs, contrary to its previous findings. EPA has done nothing of the sort.

Instead, Administrator Zeldin has simply declared that the MY2027–32 Multipollutant Rule and the Phase 3 HD Rule *are* EV mandates.[296,297] He has baldly characterized them as such since at least March 12, 2025, indicating that the Administrator did, in fact, identify these rules as regulations imposing EV mandates pursuant to the *Unleashing* EO. That internal identification of these GHG standards as EV mandates predetermined disputed factual and legal issues important to the Proposal—indeed, the Proposal cites this predetermined concept as a rationale for the proposed repeal, 90 Fed. Reg. at 36,306–07—and committed EPA to an internal directive to suspend, revise, or rescind the GHG standards prior to notice-and-comment or other opportunities for public participation.

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[296] EPA Press Office, "EPA Announces Action to Implement POTUS's Termination of Biden-Harris Electric Vehicle Mandate," *supra* note 221.

[297] EPA Press Office, "EPA Releases Proposal to Rescind Obama-Era Endangerment Finding, Regulations that Paved the Way for Electric Vehicle Mandates" (July 29, 2025), https://www.epa.gov/newsreleases/epa-releases-proposal-rescind-obama-era-endangerment-finding-regulations-paved-way.

2. Administrator Zeldin has predetermined the social cost of carbon as zero dollars-per-ton

Section 6 of the *Unleashing* EO declares the Trump administration's antipathy to the social cost of carbon, a metric used to monetize the value of GHG reductions used under Republican and Democratic administrations alike, attacking the metric for unnamed "logical deficiencies, a poor basis in empirical science," and undisclosed negative effects on U.S. competitiveness and global environmental impacts. 90 Fed. Reg. at 8356. It directs the EPA Administrator to "issue guidance to address these harmful and detrimental inadequacies," including "consideration of eliminating" the metric from federal rulemakings. *Id.* Subsequently, the White House OMB elaborated on the President's order, asserting that agencies "should not monetize the impacts from [carbon] emissions" because, allegedly, "the uncertainties in performing monetized impacts qualifications are too great."[298]

Together, these Executive Branch directives, neither of which were open to public comment, effectively ordered the EPA to zero out the social cost of carbon, and Administrator Zeldin has done precisely that in the Proposal and draft RIA, assigning no value at all to the billions of tons of climate-warming carbon pollution the Proposal will generate. President Trump and OMB explicitly instructed the EPA to "eliminat[e] the 'social cost of carbon' calculation" where feasible. 90 Fed. Reg. at 8353; OMB M-25-27. Although a directive to reconsider a finding or policy would not, standing alone, constitute an internal directive to predetermine any issue, the instructions in the *Unleashing* EO and OMB M-25-27, read in conjunction with the President's unequivocal denunciation of the social cost of carbon, effectively instructs EPA to reach only one conclusion: to discard the social cost of carbon, just as Administrator Zeldin has done in the Proposal.

B. EPA's Publicly Stated Rationale Is Pretextual

As explained in the Endangerment Finding Comment, the Proposal is a pretextual effort to further the administration's policy support for fossil fuels, not a good faith effort to carry out EPA's duties under the Clean Air Act. EF Comment Section VI.D.2.

C. EPA Has Provided the Public an Insufficient Comment Period

As explained in the Endangerment Finding Comment, EPA has not afforded the public adequate time for comment. EF Comment Section VII.A.

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[298] OMB, *Guidance Implementing Section 6 of Executive Order 14154 Entitled "Unleashing American Energy"* (May 5, 2025), https://www.whitehouse.gov/wp-content/uploads/2025/02/M-25-27-Guidance-Implementing-Section-6-of-Executive-Order-14154-Entitled-Unleashing-American-Energy.pdf (OMB M-25-27).

D. EPA Improperly Outsourced a Major Portion of its Regulatory Impact Analysis to the White House Office of Management and Budget

EPA improperly failed to exercise its independent judgment and analysis in Appendix B of the draft RIA: those pages, comprising roughly half of the regulatory impact analysis, appear to have been authored solely by OMB. *See* EPA-HQ-OAR-2025-0194-0090 (July 21, 2025 email from EPA sending working draft to OMB with Appendix B completely blank, with the comment "awaiting updated analysis from OMB to be inserted into this section"). EPA further obscured its wholesale outsourcing by labeling those pages as authored by its own Office of Transportation and Air Quality, despite the Appendix B pages arriving fully written from OMB. *Id.*

EPA's uncritical reliance on analysis performed by another agency cannot be reconciled with EPA's duty to exercise its own technical and scientific expertise and to base its decision on the record before it. *City of Tacoma, Wash. v. FERC*, 460 F.3d 53, 76 (D.C. Cir. 2006) (action agency "must not blindly adopt the conclusions of [a] consultant agency"); *see also State Farm*, 463 U.S. at 43 (it is "the agency" that "must examine the relevant data"); *U.S. Telecomm Ass'n v. FCC*, 359 F.3d 554, 565–66 (D.C. Cir. 2004) (recognizing risks in agency "delegation to outside entities"). EPA's outsourcing is all the more concerning in light of EPA's superior expertise on several matters treated in Appendix B, including the health impacts of $PM_{2.5}$ emissions, *supra* Part IV.B.1.b.2, modeling grid impacts of EV charging, *supra* Part IV.B.5.a, and understanding how vehicle emission standards impact purchase prices, fuel and maintenance costs, and other consumer costs and benefits, *see* Gillingham-Jenn 46–50. Some of the most outlandish analytical missteps in Appendix B are traceable to OMB's embrace of simplistic linear curves in non-peer-reviewed working papers over EPA's own powerful, peer-reviewed transportation and power sector modeling. *See* Gillingham-Jenn 47–49 (discussing 2020 CEA Report); *id.* at 58–61 (discussing Fitzgerald & Mulligan report on grid impacts)

If the Proposal is finalized, the analysis in Appendix B would not merit any deference because it would not reflect EPA's expert technical judgment. Moreover, to the extent that any of the supporting factual data, technical basis, or methodologies used by OMB to draft Appendix B were not included in the rulemaking docket or disclosed to the public, such a failure would constitute a "serious procedural error" and violate the Clean Air Act. *Conn. Light & Power*, 673 F.2d at 530–31; 42 U.S.C. § 7607(d)(3).

VI. CONCLUSION

For the foregoing reasons and those contained in the States and Local Governments' Endangerment Finding Comment and CWG Comment, the Proposal cannot be finalized and must be withdrawn.

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