UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards	**Docket No. EPA–HQ–OAR–2025–0194**
	FRL 12715–01–OAR
90 Fed. Reg. 36288 (August 1, 2025)	*Via regulations.gov*
	September 22, 2025

COMMENTS OF ENVIRONMENTAL AND PUBLIC HEALTH ORGANIZATIONS

The undersigned organizations respectfully submit these comments in response to the Environmental Protection Agency's (EPA) Proposed Rule titled Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards, 90 Fed. Reg. 36,288 (Aug. 1, 2025).

Our organizations strongly urge EPA to withdraw this proposed repeal. This comment addresses numerous legal deficiencies in EPA's decision-making and interpretation of the Clean Air Act with respect to its proposed repeal of greenhouse gas (GHG) standards for vehicles. Additionally, some of our organizations are filing comments under separate cover addressing deficiencies with EPA's proposed repeal of the endangerment finding.

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We incorporate by reference all sources cited in this comment. Most sources cited in this comment are being submitted via regulations.gov. Each set of sources uploaded will be accompanied by an index organizing files by comment section for ease of reference. Due to time and file size constraints, we have also submitted on a thumb drive delivered to the EPA Docket Center, attention to Alan Stout, via private courier (1) sources cited in this comment, (2) sources cited in separate comments from public health and environmental organizations on EPA's proposal to rescind the Endangerment Finding, and (2) sources cited in separate comments filed by Environmental Defense Fund. We are uploading via regulations.gov an index of the files contained on the thumb drive along with proof of delivery and receipt by Ken Powell on September 19, 2025 at 2:16 pm ET. The thumb drive also contains for inclusion in the record for this Proposal:

1. Comments submitted on EPA's Proposed Endangerment Finding for Greenhouse Gases under the Clean Air Act (CAA), 74 Fed. Reg. 18,886 (Apr. 24, 2009), Docket ID: EPA-HQ-OAR-2009-0171
2. Comments submitted on EPA's Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards, 86 Fed. Reg. 43,726 (Aug. 10, 2021), Docket ID: EPA-HQ-OAR-2021-0208
3. Comments submitted on EPA's Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, 88 Fed. Reg. 29, 184 (May 5, 2023), Docket ID: EPA-HQ-OAR-2022-0829
4. Comments submitted on EPA's Greenhouse Gas Emissions Standards for Heavy-Duty Engines and Vehicles-Phase 3, 88 Fed. Reg. 25, 926 (Apr. 27, 2023), Docket ID: EPA-HQ-OAR-2022-0985
5. Comments submitted on The Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks, 83 Fed. Reg, 42,986 (Aug. 24, 2018), Docket ID: EPA-HQ-OAR-2018-0283

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Glossary of Abbreviations

Term	Meaning
2024 HDP3 Rule	EPA, Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles-Phase 3, 89 FR 29440 (Apr. 22, 2024)
2024 HDP3 Rule RIA	Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles: Phase 3Regulatory Impact Analysis, EPA-420-R-24-006 (Mar. 2024), https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P101A93R.pdf
2024 HDP3 Rule RTC	EPA, Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles: Phase 3Response to Comments, EPA-420-R-24-007 (Mar. 2024), https://www.epa.gov/system/files/documents/2024-03/420r24007.pdf
2024 LMDV Rule	EPA, Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, 89 FR 27842 (Apr. 18, 2024)
2024 LMDV Rule RIA	EPA, Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles Regulatory Impact Analysis, EPA-420-R-24-004 (Mar. 2024), https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1019VPM.pdf
2024 LMDV Rule RTC	EPA, Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles Response to Comments, EPA-420-R-24-005 (Mar. 2024), https://nepis.epa.gov/Exe/ZyPdf.cgi?Dockey=P1019WE6.pdf
2024 Rules	2024 LMDV Rule and 2024 HDP3 Rule, collectively
CWG Report	Climate Working Group, A Critical Review of Impacts of Greenhouse Gas Emissions on the U.S. Climate (July 23, 2025), https://www.energy.gov/sites/default/files/2025-07/DOE_Critical_Review_of_Impacts_of_GHG_Emissions_on_the_US_Climate_July_2025.pdf
EF	Endangerment Finding
EF Comments	Comments of Environmental and Public Health Organizations addressing EPA's proposed repeal of the 2009 Endangerment Finding in EPA's Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards, 90 Fed. Reg. 36288
BEV	Battery electric vehicle
EREV	Extended range electric vehicle
EV	Electric vehicle
ICE	International combustion engine
PEV	Plug-in electric vehicle, including BEV and PHEV

PHEV	Plug-in hybrid electric vehicle
ZEV	Zero-emission vehicle

I. Introduction

EPA's proposal to rescind the vehicle greenhouse gas (GHG) standards has no basis in law, no basis in science, and is an attack on key protections for Americans against present and worsening climate-driven threats and health-harming pollution. Our organizations forcefully oppose EPA's unlawful proposal.

The environmental consequences of this proposal, if finalized, would be immediate and severe. Transportation is the largest source of carbon pollution in the United States, and strong vehicle emissions standards are one of the most effective tools for curbing these emissions. Reversing course would put less efficient, more polluting vehicles on our roads, driving up carbon dioxide emissions at the very moment scientists warn rapid reductions are necessary to avoid the most catastrophic impacts of climate change. This increase in emissions would worsen a range of climate-related impacts, from more frequent and intense extreme weather events to rising sea levels and threats to biodiversity. Beyond climate change, the rollback would lead to a surge in conventional air pollutants, including nitrogen oxides and particulate matter, which are known to cause respiratory illnesses, cardiovascular diseases, and premature deaths.

The proposal would also harm the U.S. economy. By revoking the vehicle standards, EPA would undermine one of the most important drivers of innovation and investment in the auto industry and force Americans to spend more money at the pump. Vehicle manufacturers have already committed billions of dollars to electrification, advanced engines, and clean energy infrastructure, creating hundreds of thousands of good-paying jobs across the country. Rolling back standards would jeopardize these investments and jobs, create regulatory uncertainty and undermine American competitiveness in the global automotive market, which is rapidly shifting toward electrification. At the same time, consumers would face higher maintenance and fuel costs, and fewer clean vehicle options. The long-term costs of increased air pollution and climate-related disasters, including healthcare expenses and property damage, would impose a heavy financial burden on the nation, far outweighing any perceived short-term savings.

As discussed more fully in our separate comments,[1] the repeal of the Endangerment Finding itself would be both contrary to law and arbitrary and capricious. But regardless of the validity of the Endangerment Finding repeal, EPA's separate decision to repeal the vehicle GHG standards is contrary to law for numerous legally independent reasons. Not only does EPA lack statutory authority to repeal the GHG standards, EPA's proposed repeal fails to comport with the requirements of reasoned decision making, thus making it arbitrary and capricious.

These actions, if finalized, would be a callous breach of our government's responsibility to protect the American people from devastating climate pollution. Rather than following the law and science, the proposal represents an attempt to unlawfully dismantle critical climate protections. Our organizations urge EPA to withdraw this proposal.

We note EPA's request that "commenters include the corresponding identifier when providing comments relevant to that comment solicitation" and "that commenters include the

[1] Throughout the document, we refer to this as the Endangerment Finding Comment, EF Comment, or with like formulations.

identifier either in a heading or within the text of each comment, to make clear which comment solicitation is being addressed." 90 Fed. Reg. 36288. In response to EPA's request, we note that this comment letter addresses many of EPA's comment solicitations, including but not limited to C-1 through C-27 (exclusive of C-17 and C-18 relating certain to NHTSA programs and C-22 relating to the Paperwork Reduction Act), as well as other germane comments.

II. Repeal of EPA Vehicle GHG Emission Standards Would Have Massive Environmental and Public Health Consequences.

A. History of EPA's motor vehicle GHG program

Since 2010, under the authority of Section 202(a) of the Clean Air Act (CAA), EPA has promulgated a suite of increasingly protective vehicle greenhouse gas (GHG) emission standards, for light-, medium- and heavy-duty vehicles. EPA's GHG emissions standards are designed to be technology-forcing, and spurred technological innovations including advanced transmissions, turbocharging, and gasoline direct injection, as well as system-level efficiencies that reduce fuel consumption. Congress deliberately chose a technology-based approach in the 1970 CAA amendments to require EPA to "press for the development and application of improved technology rather than be limited by that which exists today,"[2] and to force the industry "to develop pollution control devices that might at the time appear to be economically or technologically infeasible."[3] Over the years, a wide range of stakeholders including community organizations, individuals, vehicle and engine manufacturers, health organizations, and business voices have supported vehicle GHG regulations.

The transportation sector is responsible for an increasing percentage of U.S. GHG emissions and plays an outsized role in contributing to the climate crisis. When EPA made its Endangerment Finding for GHGs, the transportation sector was responsible for 23% of total annual U.S. GHG emissions.[4] Since then, transportation sector GHG emissions have only increased as a share of U.S. emissions (now at 28%), surpassing the electric power sector (25%) as the largest U.S. source of GHG emissions.[5] However, the vehicle GHG emission standards have slowed the rate of GHG emissions over time.[6] By EPA's own findings, in 2007 prior to GHG emissions standards, U.S. GHG emissions were 15.2% above 1990 levels and by 2022, U.S. GHG emissions were 3% below 1990 levels.[7] And since the first light-duty standards in model year 2012, fleet average light-duty CO2 emissions have declined from 377g/mi to

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[2] *Natural Resources Defense Council, Inc. v. U.S. EPA*, 655 F.2d 318, 328 (D.C. Cir. 1981) (quoting S.Rep. No. 1196, 91st Cong., 2d Sess. 24 (1970)).

[3] *Union Elec. Co. v. EPA*, 427 U.S. 246, 257, 96 S.Ct. 2518, 49 L.Ed.2d 474 (1976); *see also Int'l Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 621 (D.C.Cir.1973) ("Congress was aware that these 1975 standards were 'drastic medicine,' designed to 'force the state of the art.'").

[4] 74 Fed. Reg. 66496, 66499 (Dec. 15, 2009).

[5] EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2022*, at ES-21 (2024).

[6] EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2022*, at ES-10 (2024).

[7] EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2022*, at ES-4 (2024).

305g/mi in model year 2024, a decrease of nearly 20%.[8] This progress demonstrates that GHG standards work at reducing emissions over time—however there is still work to be done, and eliminating these standards would move the United States in the wrong direction.

i. Light-duty vehicle standards

On May 7, 2010, EPA and NHTSA issued a joint rulemaking for model year (MY) 2012-2016 light-duty vehicles to "reduce greenhouse gas emissions and improve fuel economy."[9] This rule set GHG emission targets for vehicles each year based on their footprint.[10] Footprint-attribute-based standards "enable manufacturers to produce a range of vehicle sizes rather than designing a lighter and smaller vehicle fleet overall to meet categorical targets."[11] These performance-based standards did not prescribe specific technologies for manufacturers, instead allowing for manufacturers to determine their preferred solution. By 2016, the light-duty program saved nearly one billion gallons of fuel and avoided over 10 million tons of carbon dioxide emissions from entering the atmosphere.[12]

In 2012, EPA and NHTSA issued increasingly stringent standards for MY 2017-2025 vehicles. The agencies projected the combined rules would decrease GHG emissions by approximately 2 billion metric tons[13] and the associated benefits, including reductions in criteria pollutants and particulate matter-related health benefits, were projected to total $126 billion through 2025.[14] For the average consumer, the joint rules were projected to save $8,000 in fuel costs over the lifetime of a vehicle.[15]

However, on April 30, 2020, EPA and NHTSA reversed course and issued weaker standards for MY 2021-2026 vehicles. This so-called "SAFE Vehicles Rule" was projected to result in higher fuel consumption and at least 867 million more tons of GHG emissions.[16]

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[8] EPA, The 2024 EPA Automotive Trends Report at 42, https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P101CUU6.pdf (hereinafter "2024 Trends Report").

[9] 75 Fed. Reg. 25324 (May 7, 2010).

[10] Richard Lattanzio, Automobiles, Air Pollution, and Climate Change, Congressional Review Service at 2 (Jun. 2024).

[11] *Id.*; *see also* 75 Fed. Reg. 25324, 25355 (May 7, 2010).

[12] 81 Fed. Reg. 73478, 73480 (Oct. 25, 2016).

[13] 77 Fed. Reg. 62624, 62629 (Oct. 15, 2012); *See also* EPA, Obama Administration Finalizes Historic 54.5 mpg Fuel Efficiency Standards (Aug. 2012).

[14] *Id* at 62629.

[15] EPA, Obama Administration Finalizes Historic 54.5 mpg Fuel Efficiency Standards (Aug. 2012).

[16] 85 Fed. Reg. 24174, 24176 (Apr. 30, 2020) ("these final standards are estimated to result in 1.9 to 2.0 additional billion barrels of fuel consumed and from 867 to 923 additional million metric tons of CO2"); *Id.* at 25111.

Following the change in administration, EPA revised the SAFE Vehicles Rule in December 2021, to make the standards more stringent beginning in MY 2023.[17] This rule had a GHG compliance target of 161 grams/mile in MY 2026 and later and continued to achieve the health and welfare benefits of GHG emission reductions under Section 202.[18] In its final rule, EPA concluded that: "[g]reater reductions in GHG emissions from light duty vehicles over these model years are both feasible and warranted as a step to reduce the impacts of climate change on public health and welfare."[19] The final rule was projected to reduce 3.1 billion tons of GHG emissions through 2050 and provide $190 billion in net benefits to consumers.[20]

Most recently, in 2024 EPA issued Multi-pollutant Emissions Standards for MY 2027-2032. These standards built on the 2021 standards and aimed to further reduce air pollutant emissions from light-duty and medium-duty vehicles, including both GHGs and criteria pollutants.[21] Prior to 2024, medium-duty vehicles were regulated under the heavy-duty GHG rules. The 2024 LMDV Rule contained EPA's assessment of its statutory authority to set vehicle emission standards that rely on the full spectrum of technologies to prevent and control tailpipe pollution, including diverse zero-emission, hybrid, and internal combustion engine and vehicle technologies.[22] The final rule strengthened light- and medium-duty vehicle standards each year from MY 2027 to 2032. The projected savings to the American consumer from the multi-pollutant standards were significant with $46 billion in reduced annual fuel costs and $16 billion in reduced annual maintenance and repair, and an average of $6,000 in savings per consumer over the lifetime of a new vehicle, from MY 2027 to 2032, due to reduced fuel and maintenance costs.[23] The projected emissions reductions likewise were substantial, with approximately 7.2 billion metric tons of CO2 reductions.[24] EPA's 2024 Automotive Trends Report demonstrates that since GHG emissions regulations were first implemented, all U.S. vehicle manufacturers have reduced overall tailpipe GHG emissions, with eleven manufacturers reducing tailpipe CO2 emissions by 10% or greater.[25]

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[17] 86 Fed. Reg. 74434 (Dec. 30, 2021).

[18] *Id.* at 74440, 74443.

[19] *Id.* at 74492-93.

[20] *Id.* at 74437; *see also* EPA, Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards: Regulatory Impact Analysis at xvii (Dec. 2021).

[21] 89 Fed. Reg. 27842 (Apr. 18, 2024); *see* 88 Fed. Reg. 29184 (May 5, 2023).

[22] 88 Fed. Reg. 29184 at 29232-29233 (May 5, 2023).

[23] 89 Fed. Reg. 27842 (Apr. 18, 2024); EPA, Regulatory Announcement: Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles: Final Rule at 2 (Mar. 2024), https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1019VP5.pdf/.

[24] 89 Fed. Reg. 27842, 28095 (Apr. 18, 2024)("we estimate the cumulative CO2 reductions through 2055 to be 7.2 billion metric tons under the final standards").

[25] EPA 2024 Trends Report at 99-100.

ii. Heavy-duty vehicle standards

Heavy-duty vehicles account for 23.4% of total U.S. transportation-related CO2 emissions as of 2023.[26] EPA's heavy-duty GHG standards have significantly reduced these emissions over the last 14 years. The 2011 EPA and NHTSA GHG Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles, for MY 2014-2018 established the first comprehensive program to reduce GHG emissions and fuel consumption in three categories of heavy-duty vehicles or engines: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles.[27] This rule was expected to save 530 million barrels of oil and mitigate about 270 million metric tons of CO2.[28] Within the Final Phase 1 EPA Heavy-Duty Vehicle and Engine Greenhouse Gas Emissions Compliance Report (Model Years 2014-20) ("EPA Heavy-Duty Report"), EPA found that industry not only complied but exceeded expectations, by improving vehicles and engines to lower GHG emissions and fuel consumption.[29]

In October 2016, EPA and NHTSA issued a joint Final Rule for Phase 2 Medium and Heavy-Duty Engines and Vehicles, to further improve fuel efficiency and cut carbon pollution in specific trailers for MY 2018-2027 and semi-trucks, large pickup trucks, vans and all models of buses and work trucks for MY 2021-2027. These Phase 2 emissions standards were projected to reduce CO2 emissions by approximately 1.1 billion metric tons over the lifetime of the new vehicles and engines sold under the program.[30]

Most recently, in April 2024, EPA promulgated Phase 3 GHG Emissions Standards for Heavy-Duty Vehicles for MY 2027 and beyond.[31] These standards built on "decades of EPA regulation of harmful pollution from HD vehicles,"[32] and were projected to reduce GHG emissions from heavy-duty vehicles up to 60% more than the Phase 2 regulations, depending on the vehicle type, for a total of 1 billion metric tons in net CO2-equivalent emissions reductions from 2027-2055.[33] These standards allowed compliance through a large array of technologies including low carbon fuel vehicles, hydrogen fuel cell electric vehicles, battery electric vehicles, and hybrid vehicles.[34] EPA estimated that the annual net benefits to society at a 2 percent discount rate would be approximately $13 billion through 2055.[35]

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[26] EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks:1990-2023*, at ES-9 (2025).

[27] 76 Fed. Reg. 57106 (Sept. 15, 2011).

[28] 76 Fed. Reg. 57106 (Sept. 15, 2011).

[29] EPA Heavy-Duty Report at 2. https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P101A2VS.pdf.

[30] 81 Fed. Reg. 73478, 73482 (Oct. 25, 2016).

[31] 89 Fed. Reg. 29440 (Apr. 22, 2024).

[32] 89 Fed. Reg. 29440, 29443.

[33] 89 Fed. Reg. 29440, 29450, 29591.

[34] 89 Fed. Reg. 29440, 29462.

[35] 89 Fed. Reg. 29440, 29470.

Over time, due to EPA's heavy-duty emissions standards, vehicle and engine manufacturers have developed a wide range of technologies to control emissions such as electronically controlled fuel injection, idle reduction technology, high efficiency alternators, hybrid vehicles, and battery and fuel cell electric vehicles.[36]

B. Climate, health, and welfare impacts of greenhouse gas emissions

As discussed in more detail in our separate comments, the overwhelming evidence shows that greenhouses gas emissions from human activities are leading to higher global temperatures, resulting in various environmental changes, such as warmer oceans, glacier melt, sea level rise, flooding, and more extreme weather events like heatwaves and droughts. *See* EF Comment, Section VI. In North America alone, recent research indicates that multi-regional heatwaves are now seven times more likely than 40 years ago, are substantially hotter, and affect larger areas, primarily due to baseline global warming that is altering fundamental weather patterns across the United States.[37] There is also robust evidence that human-caused greenhouse gas emissions have increased the likelihood of intense, rapidly developing tropical storms in North America, and have contributed to increased frequency and severity of extreme precipitation events.[38]

Impacts on the climate from greenhouse gas emissions not only endanger the planet, but threaten the health and livelihood of people across the globe, including people living in the United States. For example, flooding caused by sea level rise has forced some U.S. coastal communities to relocate or spend billions of dollars on mitigation.[39] Increased disaster costs have driven up insurance costs for Americans, and in some areas, the rise in severe wildfires has made it difficult to retain and obtain coverage.[40] Extreme weather events such as droughts and

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[36] 89 Fed. Reg. 29440, 29463.

[37] Cassandra D.W. et al.,: Six-fold increase in historical Northern Hemisphere concurrent large heatwaves driven by warming and changing atmospheric circulations. J. Clim., 35 (3), 1063-1078 (2022), https://doi.org/10.1175/JCLI-D-21-0200.1; *see also* Nat'l Acads. of Scis., Eng'g, & Med., *Effects of Human-Caused Greenhouse Gas Emissions on U.S. Climate, Health, and Welfare*, at 22-24 (2025).

[38] Nat'l Acads. of Scis., Eng'g, & Med., *Effects of Human-Caused Greenhouse Gas Emissions on U.S. Climate, Health, and Welfare*, at 24-26, 117 (2025).

[39] A. Shrestha, et al., *A review of climate change-induced flood impacts and adaptation of coastal infrastructure systems in the United States,* Environ. Res. Infrastruct. Sustain. 3 042001 (2023),https://iopscience.iop.org/article/10.1088/2634-4505/ad097b; M. Oppenheimer et al., *Sea Level Rise and Implications for Low-Lying Islands, Coasts and Communities*, IPCC Special Report on the Ocean and Cryosphere in a Changing Climate [H.-O. Pörtner, D.C. Roberts, V. Masson-Delmotte, P. Zhai, M. Tignor, E. Poloczanska,... & N.M. Weyer (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 321-445 (2019) https://doi.org/10.1017/9781009157964.006.

[40] Nat'l Acads. of Scis., Eng'g, & Med., *Effects of Human-Caused Greenhouse Gas Emissions on U.S. Climate, Health, and Welfare*, at 68 (2025); Carolyn Kousky et al., *Insurance and climate risks: Policy lessons from three bounding scenarios*, *Proc. Natl. Acad. Sci. U.S.A.* 121 (48) e2317875121 (2024), https://doi.org/10.1073/pnas.2317875121.

thunderstorms have put stresses on infrastructure necessary to supply Americans with clean water and reliable electricity.[41]

In addition to making things more expensive and unsafe, climate change is costing Americans their lives. More frequent heatwaves are killing people,[42] as are more frequent and extreme storms. The recent devastation from Tropical Storm Helene and flash flooding in central Texas illustrate the human cost of climate change. In September 2024, Tropical Storm Helene made landfall in Florida, causing catastrophic inland flooding, extreme winds, deadly storm surge, and numerous tornadoes.[43] Helene was responsible for more than 250 fatalities, making it the deadliest hurricane in the United States since 2005.[44] More than 2,500 households in North Carolina alone were displaced.[45] And earlier this year, in July 2025, deadly flash floods swept through central Texas, killing more than 100 people.[46] Because of climate change, catastrophic storm events like these are becoming more common[47] and will likely cause similarly devastating impacts in communities across the country in the future.

The scientific evidence shows that climate change also worsens the quality of the air people breathe and increases the risk of disease.[48] For example, weather conditions caused by climate change are increasing the frequency and severity of wildfires in parts of the United States, increasing emissions of fine particulates and ozone precursors that in turn adversely impact human health.[49] Exposure to pollution from wildfire smoke is associated with premature death as well as a range of health problems, including respiratory disease, cardiac events, and negative pregnancy and birth outcomes.[50] Climate change also worsens ozone pollution.[51] Short-term and long-term exposure to ground-level ozone can cause respiratory illness, premature

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[41] Nat'l Acads. of Scis., Eng'g, & Med., *Effects of Human-Caused Greenhouse Gas Emissions on U.S. Climate, Health, and Welfare*, at 50, 53, 57, 68-69 (2025).

[42] *Id.* at 42.

[43] Andrew Hagen et al., *National Hurricane Center Tropical Cyclone Report: Hurricane Helene*, NOAA & National Weather Service,at 1 (Apr. 8, 2025), https://www.nhc.noaa.gov/data/tcr/AL092024_Helene.pdf.

[44] *Id.*

[45] FEMA, *FEMA Disaster Fact Sheet 080 – DR-4827-NC, North Carolina Helene Recovery* (Feb. 3, 2025), dr-4827-nc_disaster_fact_sheet_dfs080_feb_3_2025.pdf.

[46] Moore et al., *CW3E Event Summary: Central Texas Floods*, Center for Western Weather & Water Extremes (2025), https://cw3e.ucsd.edu/wp-content/uploads/2025/07/14Jul2025_TexasFloods_EventSummary/TexasFloods_EventSummary.pdf; Zhuang et el., *What We Know About the Floods in Central Texas*, N.Y. Times (July 20, 2025).

[47] Nat'l Acads. of Scis., Eng'g, & Med., Effects of Human-Caused Greenhouse Gas Emissions on U.S. Climate, Health, and Welfare, at 35 (2025).

[48] *Id.* at 44-45, 51-53.

[49] *Id.* at 46-48.

[50] *Id.*

[51] *Id.* at 45-46.

death, cardiopulmonary disease, decreased lung function and lung function growth among children, as well as other health harms.[52]

C. New emissions modeling and impacts assessments show significant increases in pollution and social costs associated with a repeal of vehicle GHG standards.

Some of our organizations have conducted quantitative modeling to assess the impact of EPA's proposed rescission of its Endangerment Finding and repeal of its vehicle GHG emission standards. The methodologies and full results of these modeling analyses can be found in separate comments submitted by EDF and NRDC, respectively. EDF and NRDC's modeling produce differing results due to varying assumptions and areas of emphasis, but they support the same overall conclusion: both analyses show that the MY2027+ standards deliver substantial greenhouse gas reductions, air quality improvements, and social and economic benefits. Together, the results demonstrate a consistent and robust case for the GHG standards' positive impact. We briefly summarize these results here.

i. EDF's modeling results

EDF modeled the impacts of EPA's proposal to repeal all light- and medium-duty vehicle GHG standards using EPA's OMEGA model and used tank-to-wheel emissions from ICCT's Roadmap and applied upstream emission factors to model the impacts of EPA's proposal to repeal all heavy-duty vehicle GHG standards. To capture the uncertainty caused by removing all GHG standards, EDF and ICCT modeled a low and high emitting fleet for light-duty, medium-duty, and heavy-duty vehicles that might result from the repeal of the GHG standards. EDF conservatively assumed there would be no backsliding in vehicle emissions.

EDF found that the repeal of all GHG standards would result in a significant increase in GHG, NOx, and PM emissions. Through 2055, cumulative emissions for GHGs would increase between 9.1 and 17.9 billion MT, NOx would increase between 2.4 and 4.7 million US Tons, PM would increase between 68,000 and 169,000 US Tons, and SOx would increase between 37,000 and 54,000 US Tons. The net societal costs from just the repeal of the standards for LMDVs would be between $1.7 and $4.7 trillion using a 3% discount rate. PM2.5-related health harms resulting from increases in emissions for all vehicles would be between $101 and $256 billion using a 3% discount rate. Climate harms, using a 2% discount rate, would be between $1.7 and $3.9 trillion.

For light-duty vehicles, the low-emitting fleet was modeled by setting the emission standard in OMEGA to 500 g/mi and allowing the model to select the resulting fleet. All IRA tax credits were removed and fuel prices were updated. The high-emitting fleet assumes 10% EVs in the fleet going forward and no changes in the ICEV fleet. For medium-duty vehicles, EDF assumed the level of EV growth from 2022 to 2025 of 1.2% points per year would continue. For the high emitting fleet, EDF assumed 3% EVs going forward and no changes to the ICEV fleet. For HDVs, the low emitting fleet used outputs from HD TRUCS without any of the IRA tax credits and assumed the outputs from HD TRUCS would be shifted by three years. For example, the projections from HD TRUCS on ZEV adoption in 2027 would occur in 2030. This is to

[52] *Id.*

account for the reduction in certainty removing the standards causes and for the negative pressure the current administration is putting on the ZEV market. The high emitting fleet assumes no change from the MY2024 fleet. For the low and high emitting fleets, they were compared against the No Action case of the 2024 final rules.

EDF updated the upstream emissions to use more recent electricity modeling from Energy Innovation and updated the upstream fossil emissions to better capture the full emissions associated with fossil fuel production. The upstream fossil emission factors were developed using GREET and AEO2025. EDF also used more realistic battery prices based on modeling done by Roush and used the fuel prices from AEO2025. A fuller discussion of the methodologies used can be found in EDF's technical comments.

ii. NRDC's modeling results

In addition, NRDC contracted with ERM to perform a rigorous cost-benefit analysis of the EPA proposal in order to provide an accurate assessment of the impact of EPA's proposed repeal, free of the agency's methodological errors and unsupported assumptions. That analysis addresses six categories of impacts: climate impacts, health impacts, vehicle fleet costs, utility cost and revenue impacts, charging impact analysis, and economic impacts. A full discussion of the results can be found in NRDC's technical comment. We summarize here the model results that illustrate the social, climate, and air quality costs associated with EPA's proposed elimination of the 2024 Rules' GHG standards.

ERM's modeling compared two scenarios. 1) The proposed repeal, which considers the impacts of no GHG standards after MY2026. This scenario is a modified version of the "action" case for EPA's scenario 2 in its DRIA, with updated fuel and electricity prices and the light-duty fleet updated to reflect the repeal of the rule and the loss of the IRA tax credits. And 2) Retaining the 2024 Rules' GHG standards but without relevant IRA tax credits: This is a modified version of the "no action" case for EPA's scenario 3 in its DRIA, but with more realistic gasoline prices, updated diesel and electricity prices, restoration of the 45X tax credits which EPA incorrectly removed from its analysis, and a light- and medium-duty vehicle fleet mix updated to reflect the loss of the remaining IRA tax credits. No changes are made to the heavy-duty fleet mix.

In modeling both scenarios, ERM made a range of updates to EPA's assumptions. For instance, ERM used updated vehicle technology costs from the National Renewable Energy Lab's 2024 Annual Technology Baseline; its analysis runs through 2050, rather than 2055; it used updated projected fuel prices from the EIA's Annual Energy Outlook; and it used 2024 dollars in their analysis instead of EPA's reliance on 2022 dollars. Based on this modeling, and using a 3% discount rate, ERM found that retaining the 2024 Rules' GHG standards, without the IRA tax credits, would result in significant cumulative net benefits, reaching $3.38 trillion by 2050. Further, ERM found that between 2025 and 2050, retaining the 2024 Rules' standards, even without the IRA tax credits, would result in a cumulative GHG reduction of 7.29 billion MT of CO2e compared to EPA's proposed repeal. That equates to $1.56 billion in savings in 2024 dollars. The following chart illustrates the significant increase in emissions if the GHG standards are repealed.

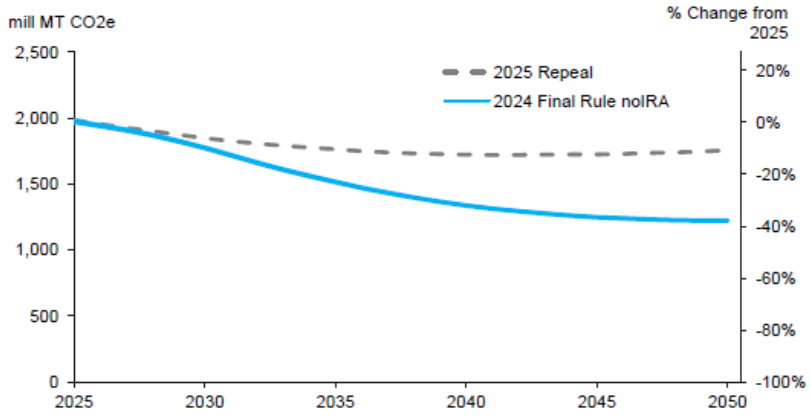

Figure 1: Million metric tons of CO2e emission reductions, over time and by scenario

The deadly NOx and PM air pollution that results from repealing the GHG standards will be responsible for approximately 5,800 deaths and 3,500 hospital visits, which has a monetized cost of 71 billion dollars over the next 25 years. The modeling results reflect the significant harm, in the form of increased criteria air pollution, that result from repealing the MY2027+ standards, even if criteria pollutant emission standards remain in effect.

Scenario	Cumulative Benefits Compared to 2025 Repeal (2025-2050)					
	Cumulative Reduction (metric tons)		Cumulative Reduced Incidents (counts)			Monetized Value (2024$ bill, 3% discount)
	NOx	PM	Mortality	Hospital	Minor Cases	
2024 Final Rule no IRA	1,974,034	72,408	5,847	3,514	3,408,102	71

Table 1: Air Quality and Health Costs of 2025 Repeal

III. Repeal of EPA Vehicle GHG Emission Standards Would Cause Significant Societal and Economic Harm.

In addition to massive environmental and public health consequences, repeal of EPA's vehicle GHG standards would cause significant additional harm across American society – to vehicle manufacturers and related industries; to consumers; to workers; and to America's standing as the world's chief technological innovator. EPA's Proposal fails to even consider these harms and the impacts they would have on the U.S. economy and Americans' everyday lives, in

stark contrast to the agency's previous rules, which gave significant consideration to these topics.[53]

For industry, having technology-neutral federal GHG emission standards in place since 2010 has provided predictability and regulatory certainty for vehicle manufacturers, as well as for related upstream and downstream industries, stimulating investment and innovation in all types of emission-reduction technologies, including but not limited to electric vehicles and supporting infrastructure.[54] Research shows that environmental regulations drive technological innovation, including in the motor vehicle industry.[55] And real world experience confirms that federal and state vehicle standards have indeed fostered the development of emission-reduction technologies.[56] Repealing the vehicle standards would unravel over a decade of expectation that the federal government would continue to keep pace with the rest of the world's prioritization of innovation in emission-reduction technologies, and that manufacturers could count on sellers and supporting infrastructure for the vehicles they manufacture.

For purchasers and drivers of light-, medium-, and heavy-duty vehicles, this would mean less choice, not more. The types of vehicles buyers can purchase will likely grow under the standards—from mild and strong hybrids, to PHEVs and BEVs, to fuel-cell electric vehicles (for

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[53] *See, e.g.*, 89 Fed. Reg. 27842, 28092-96 (LMDV Rule's consideration of consumer interests); EPA, *Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, Regulatory Impact Analysis*, at 2-85, 4-1, 4-5, 4-7, 4-8, 4-26, 4-37, 12-49 (Mar. 2024) ("2024 LMDV Rule RIA"); 89 Fed. Reg. 29440, at 29702-04 (Apr. 22, 2024) (HDV Rule discussion of purchaser acceptance); EPA, *Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles: Phase 3, Regulatory Impact Analysis*, at 729-736 (Mar. 2024) ("HDV Rule RIA"); 75 Fed. Reg. 25324, 25478 (May 7, 2010) (considering impacts of standards on automotive industry); *id.* at 25510-513 (considering consumer impacts and behavior); *id.* at 25328-329 (considering impacts on consumers); 76 Fed. Reg. 57106, 57353 (Sept. 15, 2011) (considering employment impacts); 77 Fed. Reg. 62624, 62917-918 (Oct. 15, 2012) (discussing consumer acceptance); 85 Fed. Reg. 24174, 25114-115 (Apr. 30, 2020) (considering consumer demand).

[54] *See, e.g.*, 89 Fed. Reg. 27842, 27851 ("The final standards will also provide regulatory certainty to support the many private automaker announcements and investments in PEVs…"); *id.* at 28017 ("[W]e find that the final rule provides regulatory certainty to support increasing development of supporting electricity infrastructure").

[55] R. Rozendaal & H. Vollebergh, *Policy-Induced Innovation in Clean Technologies: Evidence from the Car Market*, Journal of the Ass'n of Env't and Res. Economists (2024), https://doi.org/10.1086/731834; 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/; S. Naimoli et al., 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/; 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.

[56] *See, e.g.*, P.K. Amar, *Environmental Regulation and Technology Innovation: Controlling Mercury Emissions from Coal-Fired Boilers*, NESCAUM, at II-14 to II-17 (Sept. 2000), https://www.nescaum.org/documents/rpt000906mercury_innovative-technology.pdf.

the heavy-duty sector), to efficient ICE vehicles. Recent analysis by EDF suggests that more stringent vehicle emission standards do not negatively impact consumer choice.[57] This research shows that states that have adopted clean car standards actually have *more* vehicle models available than states without clean car standards, especially BEV and PHEV models, and have no decrease in gasoline model availability.[58] This is true with and without adjusting for state population.[59] And because the standards are likely to drive innovation in vehicle emission reduction technology of all types, including PHEV and BEV innovation and manufacturing, repealing them would deprive U.S. drivers of significant consumer savings, as well as the other benefits that drivers experience from owning and driving clean cars—factors that EPA has historically considered but did not address in this Proposal. *See infra* Section VII.C.

In fact, research reveals that U.S. consumers highly value environmental sustainability, including in vehicle purchases. Numerous consumer surveys have found that protecting the environment is a top consideration in purchasing a vehicle.[60] In one survey, over 60% of respondents said a car's "emissions are moderately or extremely important to them, while only 7.3% of people found emissions not at all important."[61] Another survey of 2,000 American car owners, conducted in November 2024, found that the majority of respondents (56%) "reported positive effects on the climate are a deciding factor when deliberating which car to buy."[62] A May 2024 PwC survey found that more than four-fifths of respondents (80%) "are willing to pay more for sustainable produced or sourced goods," with consumers including purchasing an electric vehicle among sustainable actions they may take.[63] Since promulgating the 2010 light-duty vehicle rule, EPA has recognized the existence of an "energy paradox," by which vehicle manufacturers under-provide emission-saving technologies because they believe consumers will

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[57] *See* EDF, Technical Comments re: Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards; 90 Fed. Reg. 36288 (Aug. 1, 2025) (submitted Sept. 22, 2025) ("EDF Technical Comments").

[58] *Id.* (showing increased BEV, PHEV, mild hybrid, strong hybrid, and gasoline model availability in states with clean car standards).

[59] *Id.*

[60] Jupiter Chevrolet. *Why More Consumers Are Prioritizing Environmental Impact When Buying Cars* (Mar. 28, 2025). https://www.jupiterchev.com/blogs/6872/why-more-consumers-are-prioritizing-environmental-impact-when-buying-cars; Janice Fernandez. *The green premium on cars: How much more are consumers willing to pay for eco-friendly vehicles?* YouGov (May 9, 2024). https://business.yougov.com/content/49364-the-green-premium-on-cars-how-much-more-are-consumers-willing-to-pay-for-eco-friendly-vehicles; CarMax, *Green-Conscious: Exploring Americans' Views on Hybrid and Electric Vehicles* (Aug. 23, 2021), https://www.carmax.com/articles/green-cars-trend.

[61] CarMax, *Green-Conscious: Exploring Americans' Views on Hybrid and Electric Vehicles* (Aug. 23, 2021), https://www.carmax.com/articles/green-cars-trend.

[62] Rivian, *Seeking a Sustainable Future* (Nov. 14, 2024), https://stories.rivian.com/american-drivers-climate-evs (survey conducted by Talker Research).

[63] PwC, *Consumers Willing to Pay 9.7% Sustainability Premium, Even as Cost-of-Living and Inflation Concerns Weigh: PwC 2024 Voice of the Consumer Survey* (May 15, 2024), https://www.pwc.com/gx/en/news-room/press-releases/2024/pwc-2024-voice-of-consumer-survey.html.

not buy these vehicles.[64] As EPA recognized then and in the 2024 Rules, in part because of this "energy paradox" or "energy efficiency gap," 89 Fed. Reg. 27842, 28136-137 (Apr. 18, 2024); 89 Fed. Reg. 29440, 29702 (Apr. 22, 2024), the standards will help ensure that zero- and low-emitting vehicles with lower operating costs are made available to the American drivers that want them, while still preserving a market that includes all types of vehicles - ICE vehicles, strong and mild hybrids, PHEVs, and BEVs. Repealing the 2024 Rules, by contrast, will very likely decrease the availability and options for U.S. consumers to satisfy their preferences—both for vehicle type and for environmental sustainability - lessening rather than increasing consumer choice.

American workers also stand to lose from a repeal of the vehicle GHG standards. EPA's Proposal purports to be at least in part in response to the President's January 20, 2025, "Unleashing American Energy" Executive Order, Exec. Order 14154, 90 Fed. Reg. 8353 (Jan. 29, 2025), which expressed concern about "the burdens placed by unnecessary regulations on … job creation," among other things. *See* 90 Fed. Reg. 36288, 36291 (Aug. 1, 2025). But, as explained *infra*, Section VII.C, and in EPA's 2024 Rules, "there is greater potential for overall job growth in the sectors included in the analysis for [the 2024 LMDV Rule] than potential job losses," and "the potential for positive employment impacts increases over time." 89 Fed. Reg. 27842, 28123 (Apr. 18, 2024). EPA's 2024 LMDV Rule estimated manufacturing sector job growth due to the standards of between 17,400 and 188,100 net jobs in 2032. 2024 LMDV Rule RIA at 4-81. And many of the new jobs created as a result of the standards are expected to be high-quality, high-paying jobs. Several analyses of the jobs created by state-level clean car standards, for example, found that average wages for the new jobs were between 33% and 100% higher than average wages for the jobs being replaced.[65]

Finally, global demand for clean vehicles is growing rapidly, with EVs expected to make up more than 25% of global new car sales in 2025 and over 40% by 2030.[66] Clear signals from the federal government will create industry confidence in expanding investments in emission reduction technologies, and without these investments Americans will lose out.

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[64] *See* 79 Fed. Reg. 25324, t 25510-25512 (May 7, 2010).

[65] Dave Seamonds et al., *New York Advanced Clean Cars II Program*, ERM 20 (Feb. 2023), https://www.erm.com/globalassets/documents/global-policies/new-york-advanced-clean-cars-program-report_2023.pdf (evaluating impacts of Advanced Clean Cars II adoption in New York); Sophie Tolomiczenko et al., *The Benefits of the Colorado Clean Car Standard*, ERM 19–20 (May 2023), https://www.erm.com/globalassets/foundation-annual-report-2023/co_acc_ii_final_report_15may2023.pdf (evaluating Colorado's Clean Car Standards); Sophie Tolomiczenko et al., *New Jersey Advanced Clean Cars II Program*, ERM 21 (April 2023), https://www.erm.com/contentassets/0ea3b193115448cd9dd5c7e3622373a0/new-jersey-advanced-clean-cars-ii-program.pdf (evaluating impacts of Advanced Clean Cars II adoption in New Jersey).

[66] 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.

IV. This Rulemaking Violates Clean Air Act Procedural Requirements

The Clean Air Act sets out clear procedures for rulemaking to ensure the public is given a meaningful opportunity to comment and engage in the rulemaking process. *See* 42 U.S.C. § 7607(d). Yet this rulemaking has been characterized by a host of procedural violations that, taken together, demonstrate a startling lack of adherence to proper procedures and require EPA to withdraw this proposal.

To start, given the breadth and magnitude of this proposal, the current comment period is woefully insufficient to provide the public a meaningful opportunity to comment. EPA proposes to rescind the 2009 Endangerment Finding as well as *eight* different regulations establishing vehicle emissions standards, yet it provides a mere *52 days* for public comment. Section 307(d) requires EPA to provide public notice and comment, and courts have held that a meaningful opportunity to comment requires "enough time" to comment. *See Prometheus Radio Project v. FCC*, 652 F.3d 431, 449-50 (3d Cir. 2011). EPA's failure to provide a meaningful comment period has already infected this rulemaking and thus requires a new proposal and comment period to cure this defect.

Additionally, whatever the length of the comment period, EPA is not providing an opportunity for meaningful comment because the agency has not remained open-minded before and during the comment process. Administrator Zeldin's conduct both before and after he announced the proposed rule provides strong evidence that EPA is engaged in pretextual rulemaking. And Administrator Zeldin improperly relies upon - and delegates responsibility to - Secretary Chris Wright, who also exhibits an unalterably closed mind. If this were not enough, the government's full-scale attack on climate science is further evidence of pretext, as it demonstrates an internal directive to reach a certain result irrespective of public input. Evidence of pretext taints the rulemaking process, as the very "purpose" of a rulemaking proceeding is "frustrated if [agency officials] had reached an irrevocable decision on whether a rule should be issued prior to … final action." *Ass'n of Nat'l Advertisers v. FTC*, 627 F.2d 1151, 1170 (D.C. Cir. 1979). And Administrator Zeldin's abdication of his responsibility to exercise his independent judgment is of "central relevance" to the rule, *see* 42 U.S.C. § 7607(d)(8), as the rule relies heavily on a DOE draft report that itself suffers from serious procedural and substantive flaws.

Finally, EPA flouts its normal process by failing to consult with relevant stakeholders, as well as the Science Advisory Board (SAB), before issuing the proposal. These omissions build on the many errors in this process and illustrate the agency's desire to rush this rulemaking and avoid meaningful public input.

Given the severity and cumulative nature of these procedural violations, EPA cannot cure these errors in a final rule. *Cf.* 42 U.S.C. § 7607(d)(8) (reviewing court may invalidate rule where procedural errors are "so serious and related to matters of such central relevance to the rule that there is a substantial likelihood that the rule would have been significantly changed if such errors had not been made."). These errors go to the heart of the rulemaking process. As a result, EPA must withdraw the current proposal and re-propose a new rule.

A. EPA failed to provide meaningful opportunity to comment on its proposal.

Under the APA and the CAA, EPA must provide the public with adequate notice of a proposed rule and a meaningful opportunity to comment on the substance of the rule. *See* 5 U.S.C. § 553(c); 42 U.S.C. § 7607(d); *see also, e.g.*, *Gerber v. Norton*, 294 F.3d 173 (D.C. Cir. 2002) ("Th[e] opportunity for comment must be a meaningful opportunity."). A meaningful opportunity to comment "means enough time with enough information to comment and for the agency to consider and respond to the comments." *Prometheus Radio Project v. FCC*, 652 F.3d 431, 449-50 (3d Cir. 2011). It also means the agency must remain open minded during the comment process. *Rural Cellular Ass'n v. FCC*, 588 F.3d 1095, 1101 (D.C. Cir. 2009). EPA has recognized the legal necessity of undertaking a process that allows for sufficient public engagement.[67] But EPA's provision of only 52 days for public comment on a proposal of this magnitude is woefully inadequate.[68] Additionally, EPA's proposal evinces a closed mind, thus further undermining the public's opportunity to meaningfully comment on the proposal.

i. The current comment period does not provide sufficient time given the magnitude of the proposal.

As explained by some of the commenters in a request to extend the public comment period,[69] the current comment period for this rulemaking is woefully inadequate, given the breadth of the proposal and extraordinary harms it will impose on Americans. Indeed, EPA's current "condensed comment period … seems to have been designed to elicit as few comments as possible," *Nat'l Ass'n of Manufacturers v. SEC*, 105 F.4th 802, 810 n.4 (5th Cir. 2024), contrary to the Clean Air Act's requirements. EPA should allow the public time to comment on the proposal that is at least comparable to what it allowed for the initial Endangerment Finding and GHG emission standards for vehicles. *See, e.g.*, *N. Carolina Growers' Ass'n, Inc. v. United Farm Workers*, 702 F.3d 755 (4th Cir. 2012) (holding that 10-day comment period was not "adequate opportunity for comment" when during the prior rulemaking the agency had allowed 60 days for public comment); *California v. Dep't of the Interior*, 381 F. Supp. 3d 1153, 1177–79 (N.D. Cal. 2019) (finding 30-day comment period inadequate because prior rulemaking included 120 days for comment and vacating final rule based on this and other APA violations). EPA's proposal is dramatically different from the analysis—both factual and legal—contained in the original Endangerment Finding and all prior light-, medium-, and heavy-duty vehicle GHG emission standards. The public is entitled to sufficient and meaningful time to respond to such a

[67] *See, e.g.*, *Zeldin Pledges Public Process to Revisit GHG Finding, Amid Skepticism*, Inside EPA (Apr. 22, 2025), https://insideepa.com/daily-news/zeldin-pledges-public-process-revisit-ghg-finding-amid-skepticism.

[68] EPA also cannot defend its truncated comment period on the basis that the public had an opportunity to review a pre-publication copy of the proposal. The proposed rule was published the day after EPA posted the signed pre-publication version.

[69] *See* Environmental Defense Fund, Alliance of Nurses for Healthy Environments, Clean Air Task Force, Earthjustice, Natural Resources Defense Council, and Sierra Club, Request for Extension of Public Comment Period, Docket ID No. EPA-HQ-OAR-2025-0194 (Aug. 13, 2025), https://www.regulations.gov/comment/EPA-HQ-OAR-2025-0194-0276.

sweeping and damaging proposal that seeks to reconsider and rescind so many separate rulemakings.[70]

As explained above, *supra* Section II, the proposal, if finalized, will increase greenhouse gas pollution and raise costs across society, severely harming Americans now and for generations to come. The lack of analysis and transparency paired with deeply faulty and at times incomprehensible methodologies in EPA's Draft Regulatory Impact Analysis hinder the public's ability to comment and necessitate time for additional technical analyses. The Proposed Reconsideration also advances novel and baseless legal interpretations that diverge dramatically from EPA's longstanding interpretations of the Clean Air Act and that conflict with judicial precedent. Because the proposal creates potentially highly significant legal and regulatory consequences, the public must have sufficient time to undertake detailed analysis of and comparison to precedent and past practice. Given such far-reaching and damaging consequences, the public needs more than only 52 days to consider the proposal and provide informed comment.

The repeal of EPA's vehicle GHG standards relies upon the rescission of the Endangerment Finding, and EPA provides one comment period for both the Endangerment Finding rescission and repeal of the vehicle GHG standards.[71] The Endangerment Finding was based on a vast and compelling record of scientific evidence demonstrating that "[w]arming of the climate system is unequivocal," "elevated concentrations of heat-trapping greenhouse gases are the root cause of recently observed climate change," "climate change can increase the risk of morbidity and mortality," and "greenhouse gas air pollution and resultant climate change affect climate-sensitive sectors," impacting public welfare. 74 Fed. Reg. at 66517-18, 66524, 66531. *See also id.* at 66497 ("The Administrator has determined that the body of scientific evidence compellingly supports th[e] [Endangerment] [F]inding."). In subsequent rulemakings, including the rulemakings promulgating light-, medium-, and heavy-duty vehicle GHG emission standards, EPA has ***reaffirmed the finding*** that greenhouse gas pollution endangers public health and welfare time and time again, based on longstanding legal precedent and the original scientific findings, as well as a large amount of updated scientific and technical information.[72] And in 2010

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[70] *See generally* Comments submitted by Environmental Defense Fund, Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards; 90 Fed. Reg. 36288 (August 1, 2025) and Comments submitted by Clean Air Task Force, Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards; 90 Fed. Reg. 36288 (August 1, 2025) on September 22, 2025 for examples of additional relevant analyses that could have been done with a longer comment period.

[71] Ironically, EPA recently sought judicial vacatur of PFAS regulations promulgated in 2024 under the theory that the Safe Drinking Water Act prohibits the concurrent issuance of a threshold determination to regulate and the regulations themselves, since doing so would (EPA claims) deprive the public of an adequate opportunity to comment on the agency's course of action. *See* Resp's. Mot. for Summary Vacatur, *Am. Water Works Assoc., et al., v. EPA,* No. 24-1188 and consolidated cases, Dkt. No. 2134523, 18-19 (D.C. Cir. Sept. 11, 2025). EPA raises no such concerns with regard to its newfound interpretation of section 202(a)(1).

[72] *See, e.g.*, EPA, *Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light- Duty and Medium-Duty Vehicles: Final Rule*, 89 Fed. Reg. 27842, 27843-44, 27861-64, 27888-89, 27901, 28131-32, 28141 (Apr. 18, 2024); EPA, *Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards: Final Rule*, 86 Fed. Reg. 74434, 74451, 74489, 74515, 74520 (Dec. 30, 2021);

and 2022, EPA denied petitions for reconsideration of the Endangerment Finding. 75 Fed. Reg. 49556 (Aug. 13, 2010) (calling the supporting science "robust, voluminous, and compelling"); 87 Fed. Reg. 25412 (Apr. 29, 2022).[73] The mountain of scientific evidence supporting the Endangerment Finding has only grown over time. Now, however, EPA seeks to reverse these repeated findings with little time for the public to comment.

EPA recognized the need for extensive public comment in its previous rulemakings on the endangerment finding and vehicle emissions standards. EPA's original Endangerment Finding proposal in 2009 allowed for a 60-day public comment period and two public hearings, during which the Agency received approximately 370,000 public comments. 74 Fed. Reg. at 66500. Although 60 days too is fairly short for a proposal of this magnitude, "a very large part of the information and analyses for the Proposed [Endangerment] Finding[] had been previously released [on] July 30, 2008," over half a year before the proposed findings were issued in April 2009, as part of EPA's *Advance Notice of Proposed Rulemaking: Regulating Greenhouse Gas Emissions under the Clean Air Act*, 73 Fed. Reg. 44354 (July 30, 2008) ("ANOPR"). 74 Fed. Reg. at 66503. The July 2008 ANOPR was accompanied by a Technical Support Document ("TSD") detailing the extensive scientific support upon which EPA planned to—and did—rely in making the Endangerment Finding, and allowed for its own 120-day comment period, preceding the Endangerment Finding proposal comment period. *See id.* at 66,500, 66,503. Between the ANOPR and the Endangerment Finding proposal, then, the public had two periods totaling 180 days during which to submit comments relevant to the Endangerment Finding. And the public effectively had *328 days* to consider much of EPA's justification for the Endangerment Finding and to prepare to submit final comments—from July 30, 2008 (the day the ANOPR was published and the TSD explaining the scientific findings was released), through June 23, 2009 (the date comments on the Endangerment Finding proposal were due).

Here, by contrast, EPA did not publish official notice of the proposal or its justification for dismissing decades of established science and binding legal precedent until August 1, 2025,

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EPA, *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks: Final Rule*, 85 Fed. Reg. 24174, 24182, 24213, 24845-46, 25104, 25261-62 (Apr. 30, 2020); EPA, *2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards: Final Rule*, 77 Fed. Reg. 62624, 62627, 62633-34, 62669, 62672-73, 62770, 62894-98, 62960-61, 62964, 63018 (Oct. 15, 2012); EPA, *Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule*, 75 Fed. Reg. 25324, 25326, 25396-99, 25402, 25491-92, 25544-45, 25607 (May 7, 2010); EPA, *Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles—Phase 3: Final Rule*, 89 Fed. Reg. 29440, 29442, 29460, 29464, 29470, 29472, 29474-76, 29587, 29672-73; 29692-93; 29734 (Apr. 22, 2024); EPA, *Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2: Final Rule*, 81 Fed. Reg. 73478, 73486-87, 73512, 73833-34, 73966, 73968 (Oct. 25, 2016); EPA, *Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles: Final Rule*, 76 Fed. Reg. 57106, 57109, 57129, 57294-95, 57371 (Sept. 15, 2011).

[73] Courts have also upheld the Endangerment Finding, *Coalition for Responsible Regulation, Inc. v. EPA*, 684 F.3d 102 (D.C. Cir. 2012), and EPA's 2023 denial of petitions for reconsideration, *Concerned Household Electricity Consumers Council v. EPA*, No. 22-1139, 2023 WL 3643436 (D.C. Cir. May 25, 2023), *cert denied* 144 S. Ct. 497 (2023).

and has allowed only 52 days for the public to comment. And unlike with the Endangerment Finding, where EPA released the underlying scientific and technical basis for the rule along with the ANOPR well in advance of the actual proposal, EPA now references as support a draft CWG Report (which itself diverges dramatically from decades of scientific research and consensus) released simultaneously with the proposal.[74]

Moreover, EPA here seeks to undo *eight* completely separate sets of standards for light-, medium-, and heavy-duty vehicle GHG emission standards, almost all of which had their own comment periods of approximately 60 days, and each of which made its own separate, updated legal, scientific, and technical findings of support for the Endangerment Finding and the relevant standards.[75] In total, the eight vehicle rulemakings that EPA now seeks to undo had comment periods equaling 461 days.[76] Together with the Endangerment Finding, the public had over 600 days to consider and comment on the establishment of these standards. EPA's proposal to tear all of these protections down with a scant 52 days for public comment is plainly inadequate.

Indeed, EPA's past practice in major Clean Air Act rulemakings shows that "adequate" notice and a "meaningful" opportunity to comment have consistently been understood in such contexts to require much more substantial comment periods than that provided here. For example, the proposed *Carbon Pollution Standards for Modified and Reconstructed Stationary Sources: Electric Utility Generating Units* initially provided a 120-day comment period, 79 Fed. Reg. 34960 (June 18, 2014); the proposed *Review of New Source Performance Standards for Stationary Combustion Turbines and Stationary Gas Turbines*, 89 Fed. Reg. 101306 (Dec. 13, 2024), initially had a 90-day comment period; and numerous EPA proposed rules have set comment periods of 60 days, *see, e.g.*, *Mandatory Reporting of Greenhouse Gases, Proposed Rule*, 74 Fed. Reg. 16448 (Apr. 10, 2009); *Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, Proposed Rule*, 82 Fed. Reg.

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[74] *See* U.S. Dep't of Energy, *Notice of Availability: A Critical Review of Impacts of Greenhouse Gas Emission on the U.S. Climate*, 90 Fed. Reg. 36,150 (Aug. 1, 2025); U.S. Dep't of Energy, A Critical Review of Impacts of Greenhouse Gas Emissions on the U.S. Climate (July 23, 2025), https://www.energy.gov/sites/default/files/2025-07/DOE_Critical_Review_of_Impacts_of_GHG_Emissions_on_the_US_Climate_July_2025.pdf.

[75] *See* [1] 74 Fed. Reg. 49454 (Sept. 28, 2009) (light-duty standards proposal, providing for 60 days for public comment); [2] 75 Fed. Reg. 74152 (Nov. 30, 2011) (heavy-duty standards proposal, providing 62 days for public comment); [3] 76 Fed. Reg. 74,854 (Dec. 1, 2011) (light-duty standards proposal, providing 60 days for public comment); [4] 80 Fed. Reg. 40138 (July 13, 2015) (heavy-duty standards proposal, providing 60 days for public comment); [5] 83 Fed. Reg. 42986 (Aug. 24, 2018) (light-duty vehicles standards proposal, providing for 60 days for public comment); [6] 86 Fed. Reg. 43726 (August 10, 2021) (light-duty standards proposal, providing 48 days for public comment); [7] 88 Fed. Reg. 25926 (Apr. 27, 2023) (heavy-duty standards proposal, providing 50 days for public comment); [8] 88 Fed. Reg. 29184 (May 5, 2023) (light-duty standards proposal, providing 61 days for public comment).

[76] *See id.* Additionally, the 2012 light-duty rulemaking opened the comment period for the first notice of intent of rulemaking in October 2010. EPA then published two follow up supplemental notices in December 2010 and August 2011, and in both said the agency would leave the docket open for comment—resulting in comment periods related to the 2012 light-duty rule being open for almost two years. *See* 75 Fed. Reg. 62,739 (Oct. 13, 2010); 75 Fed. Reg. 76,337 (Dec. 8, 2010); 76 Fed. Reg. 48,758 (Aug. 9, 2011).

48035 (Oct. 16, 2017); *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks, Notice of Proposed Rulemaking*, 83 Fed. Reg. 42986 (Aug. 24, 2018). *See also Prometheus Radio Project v. F.C.C.*, 652 F.3d 431, 452 (3d Cir. 2011) (holding a comment period inadequate when it "gave only 28 days for response, not *the usual* 90 days") (emphasis added); *Petry v. Block*, 737 F.2d 1193, 1202 (D.C. Cir. 1984) (stating that a 30-day comment period "cuts the comment period to the bone"). And Executive Order 12866, as amended, provides that "a meaningful opportunity to comment on any proposed regulation … should include a comment period of not less than 60 days." 58 Fed. Reg. 51735, 51740 (Oct. 4, 1993).

B. EPA is acting with a closed mind.

Administrator Zeldin has demonstrated an "unalterably closed mind on matters critical to the disposition of th[is] proceeding." *Ass'n of Nat'l Advertisers v. FTC*, 627 F.2d 1151, 1170 (D.C. Cir. 1979). As a result, either the Administrator must be disqualified from the rulemaking—including from both the agency's reconsideration of the 2009 Endangerment Finding and the GHG standards—or EPA must withdraw the proposal and begin a new rulemaking process that is untainted by the Administrator's prejudgment. *See Nehemiah Corp. of Am. v. Jackson*, 546 F. Supp. 2d 830, 847 (E.D. Cal. 2008) (describing appropriate remedies when an agency official has prejudged the outcome of a particular matter).

"The whole rationale of notice and comment rests on the expectation that the final rules will be somewhat different and improved from the rules originally proposed by the agency." *Trans-Pacific Freight Conference v. Federal Maritime Com.*, 650 F.2d 1235, 1249 (D.C. Cir. 1980). Thus, regulators "violate the Due Process Clause and must be disqualified … when they act with an unalterably closed mind and are unwilling or unable to rationally consider arguments." *Miss. Comm'n on Envtl. Quality v. EPA*, 790 F.3d 138, 183 (D.C. Cir. 2015) (cleaned up). A regulator can "ma[ke] his intention known so that interested parties can contribute to the debate," provided that the regulator in question remains open to an alternative course of action despite their initial intention. *Housing Study Group v. Kemp*, 736 F. Supp. 321, 333 (D.D.C. 1990). But a regulator's statements and actions may show he is "unable to consider meaningfully" the evidence presented in a rulemaking. *Nat'l Advertisers*, 627 F.2d at 1170. In such cases, "[a]llowing the public to submit comments to an agency that has already made its decision is no different from prohibiting comments altogether." *Nehemiah Corp.*, 546 F. Supp. 2d at 847. Indeed, "[t]here is no doubt that the purpose of [rulemaking proceedings] would be frustrated if [agency officials] had reached an irrevocable decision on whether a rule should be issued prior to … final action." *Nat'l Advertisers*, 627 F.2d at 1170; *see also Nehemiah Corp.*, 546 F. Supp. 2d at 847 ("[I]f the public perceives that the agency will disregard its comments, there may be a chilling effect that causes the public to refrain from submitting comments as an initial matter.").

Several patterns of behavior or statements may indicate a regulator is unable to meaningfully consider the public's comments: (1) a senior political official's definitive and unequivocal announcement of a "dramatic change" in the agency's position, prior to the conclusion of administrative proceeding," *Int'l Snowmobile Mfrs. Ass'n v. Norton*, 340 F. Supp. 2d 1249, 1260–61 (D. Wyo. 2004); (2) an official's statement that his agency "would approve the new rule even in the face of critical comments," *Nehemiah Corp.*, 546 F. Supp. 2d at 847–48; or

(3) a preexisting internal directive to reach a particular result, *Nat'l Advertisers*, 627 F.2d at 1172. Administrator Zeldin's conduct, both before and after he announced the proposed rule, exemplifies each of these disqualifying courses of conduct.

i. Administrator Zeldin's statements demonstrate that he is acting with a closed mind.

Public statements can indicate that an official is acting with an unalterably closed mind. *See Int'l Snowmobile*, 340 F. Supp. 2d at 1260–61 (predetermined political decision to ban snowmobiles shown by statements that "there will be no future for these antiquated polluting vehicles in the National Park System"). Several types of statements by Administrator Zeldin demonstrate his predetermined conclusion for this rulemaking.

First, long before the publication of this proposal, Administrator Zeldin announced that he had already repealed the vehicle GHG emissions standards. Administrator Zeldin consistently mischaracterizes vehicle emissions regulations by referring to them as "EV mandates."[77] Having characterized vehicles emissions regulations as supposed "EV mandates," Administrator Zeldin published an opinion piece in the Wall Street Journal on March 12, 2025—*months* before publication of the EPA's proposal to rescind the emissions standards—in which he proclaimed, "Under President Trump's guidance, the EPA *also has ended* the electric-vehicle mandate that threatened to destroy America's auto industry and made cars cost more."[78] The use of the past tense in this opinion piece to refer to the repeal is strong evidence that Administrator Zeldin had already made up his mind in March 2025. And it is unsurprising that Administrator Zeldin had already made up his mind in March, given the President's executive orders directing the "eliminat[ion] [of] the 'electric vehicle (EV) mandate'" (again, seemingly referring to tailpipe emissions regulations that are not actually EV mandates). Executive Order 14154, *Unleashing American Energy*, 90 Fed. Reg. 8353 (Jan. 29, 2025).

Additionally, Administrator Zeldin has in other statements characterized *announcements* of deregulatory actions, rather than the completion of rulemaking, as marking his decision. For example, in announcing EPA's reconsideration of several climate change-related rules, including the tailpipe standards at issue in the proposal, Administrator Zeldin consistently characterized the *announcement itself* as marking a dramatic change in course, styling March 11, 2025, the date of that announcement, as "the Greatest Day of Deregulation in American History."[79] In

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[77] *See, e.g.*, July 29 EPA Endangerment Finding Press Release (announcing EPA's proposal to repeal the Endangerment Finding and vehicles standards and stating that the Endangerment finding had been "used to justify over $1 trillion in regulations, including the Biden-Harris Administration's electric vehicle (EV) mandate."); https://www.epa.gov/newsreleases/epa-announces-action-implement-potuss-termination-biden-harris-electric-vehicle (announcing EPA "will reconsider the Model Year 2027 and Later Light-Duty and Medium-Duty Vehicles regulation and Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles," which it claimed "provided the foundation for the Biden-Harris electric vehicle mandate.")

[78] Lee Zeldin, *EPA Ends the 'Green New Deal,'* Wall St. J.: Opinion (Mar. 12, 2025), https://www.wsj.com/opinion/lee-zeldin-epa-ends-the-green-new-deal-aa81de06 (emphasis added).

[79] EPA, *EPA Administrator Lee Zeldin Launches the Greatest Day of Deregulation in American History*, YouTube (Mar. 12, 2025), https://www.youtube.com/watch?v=qae9bhymH50 (emphasis added) [hereinafter March 12 Zeldin 'Deregulation Day' Speech].

Administrator Zeldin's press release accompanying the announced reconsideration proceedings, he once more asserted, "today is the greatest day of deregulation our nation has seen."[80] Multiple press releases reiterate that March 11th is "the greatest and most consequential *day* of deregulation in U.S. history."[81] On March 12, 2025, Administrator Zeldin's *Wall Street Journal* opinion piece declared, "*Yesterday was* the most consequential day of deregulation in American history."[82] Administrator Zeldin repeatedly identified the *announcement* of reconsideration proceedings as the operative action. *See, e.g.*, March 12 EPA "Deregulation Day" Press Release ("*As a result of these announcements*, the cost of living for American families will decrease.").[83] These statements, like the Administrator's comment in *Int'l Snowmobile* that snowmobiles have "no future," indicate that prior to receiving any comments, Administrator Zeldin has already made a definitive decision about whether he would repeal GHG emission regulations. *See Int'l Snowmobile*, 340 F. Supp. 2d at 1260–61.

Administrator Zeldin has also made other "gratuitous (but prejudicial)" statements, *id.* at 1260, demonstrating contempt for greenhouse gas regulations and motor vehicles regulations. Administrator Zeldin cast wild aspersions against the motive behind and nature of climate change regulations, claiming that the decision to promulgate GHG regulations was a "quest to destroy the American economy in the name of climate change."[84] In Administrator Zeldin's characterization, "the endangerment finding is considered the holy grail of the climate change religion."[85] Continuing that imagery, Administrator Zeldin referred to "overhauling massive rules on the endangerment finding" as "driving a dagger through the heart of climate-change religion."[86] Administrator Zeldin repeated that line on a podcast, saying this repeal "has

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[80] *Id*. (emphasis added).

[81] *See id*. (emphasis added); *see also* Press Release, EPA, 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 [hereinafter July 29 EPA Endangerment Finding Press Release].

[82] Lee Zeldin, *EPA Ends the 'Green New Deal,'* Wall St. J.: Opinion (Mar. 12, 2025), https://www.wsj.com/opinion/lee-zeldin-epa-ends-the-green-new-deal-aa81de06 (emphasis added) [hereinafter March 12 Zeldin WSJ Op-Ed].

[83] Press Release, EPA, EPA Launches Biggest Deregulatory Action in U.S. History (Mar. 12, 2025), https://www.epa.gov/newsreleases/epa-launches-biggest-deregulatory-action-us-history (emphasis added) [hereinafter March 12 EPA 'Deregulation Day' Press Release].

[84] Lisa Friedman, *How Lee Zeldin Went from Environmental Moderate to Dismantling the E.P.A.*, N.Y. Times (Mar. 30, 2025), https://www.nytimes.com/2025/03/29/climate/lee-zeldin-epa.html.

[85] Zach Coleman and Alex Guillén, *EPA launches attack on 'holy grail' of climate science — and dozens of enviro rules*, E&E News by Politico (Mar. 12, 2025), https://www.politico.com/news/2025/03/12/epa-launches-attack-on-holy-grail-of-climate-science-and-dozens-of-enviro-rules-00226731 (quoting twitter video). To the extent Administrator Zeldin truly believes that this rulemaking to repeal the Endangerment Finding is his attack on a religion practiced by Americans, the Administrator may be violating the Establishment and Free Exercise Clauses of the U.S. Constitution.

[86] March 12 Zeldin WSJ Op-Ed; *see also* Press Release, EPA, ICYMI: Administrator Zeldin in WSJ: "EPA Ends the 'Green New Deal'" (Mar. 17, 2025), https://www.epa.gov/newsreleases/icymi-administrator-zeldin-wsj-epa-ends-green-new-deal.

been referred to as basically driving a dagger into the heart of the climate change religion."[87] On that same appearance, Administrator Zeldin agreed with the characterization of the endangerment finding as "the left's tent pole to begin the whole climate grift."[88] EPA's news office also promoted a quote of a senator referencing a "climate cult" when covering reaction to this proposal.[89] Administrator Zeldin's statements and announcement clearly indicate that he "is unwilling or unable to consider rationally" contrary evidence and public comment. *Nat'l Advertisers*, 627 F.2d at 1173–74.

ii. EPA outsourced its assessment of climate change to a flawed report drafted by a working group personally selected by Secretary Chris Wright, who also exhibits an unalterably closed mind on climate change.

The proposal heavily and explicitly relies on a DOE working group report drafted by a secret, handpicked group, all members of which have a long history of rejecting well-established climate science.[90] As explained in detail in Endangerment Finding Comments Sections VI.B. and VIII., EPA should not rely on this report because the report was drafted in violation of the Federal Advisory Committee Act, contains deeply flawed scientific claims, and violates the norms of scientific integrity and the Administration's own policies. The report ignores well-settled science and is completely inconsistent with the scientific consensus, as described in a host of comments submitted to the CWG Report's separate docket.[91] Because of the centrality of that report to EPA's proposed findings and his personal involvement in selecting the report's authors, Secretary Wright's own long and well documented history of climate change denial and hostility toward vehicle regulations is further evidence that this rulemaking is tainted, as Secretary Wright

[87] Alex Guillén, *Zeldin confirms EPA will repeal the endangerment finding*, E&E News by Politico (Jul. 29, 2025), https://subscriber.politicopro.com/article/2025/07/zeldin-confirms-epa-will-repeal-the-endangerment-finding-00481043 (quoting Ruthless appearance)

[88] Maxine Joselow and Lisa Friedman, *In Game-Changing Climate Rollback, E.P.A. Aims to Kill a Bedrock Scientific Finding*, N.Y. Times (Jul. 29, 2025), https://www.nytimes.com/2025/07/29/climate/epa-endangerment-finding-repeal-proposal.html (quoting Ruthless appearance).

[89] Press Release, EPA, WHAT THEY ARE SAYING: Leaders Praise the EPA for Launching Largest Deregulatory Action in U.S. History with Proposal to Rescind Obama-Era Endangerment Finding (Aug. 1, 2025), https://www.epa.gov/newsreleases/what-they-are-saying-leaders-praise-epa-launching-largest-deregulatory-action-us (quoting Senator Cynthia Lummis).

[90] *See* Benjamin Storrow, *How Chris Wright recruited a team to upend climate science*, E&E News by Politico (Aug. 11, 2025), https://www.eenews.net/articles/how-chris-wright-recruited-a-team-to-upend-climate-science-2/; Ella Nilsen, *Energy chief suggests Trump administration is altering previously published climate reports*, CNN (Aug. 7, 2025), https://www.cnn.com/2025/08/07/climate/wright-national-climate-assessments-updating.

[91] *See, e.g.*, Comments of Andrew E. Dessler, Robert E. Kopp, et al (Aug. 30, 2025), and comments from Environmental Defense Fund, Union of Concerned Scientists, Clean Air Task Force in Docket #DOE-HQ-2025-0207. https://www.regulations.gov/docket/DOE-HQ-2025-0207.

has also acted with an unalterably closed mind. *See Miss. Comm'n on Envtl. Quality*, 790 F.3d 138 at 183.

Although the DOE working group report includes a "Secretary's Foreword" where Secretary Wright asserts he "exerted no control over [the authors'] conclusions,"[92] that assertion ignores that Secretary Wright convened this working group with the specific intention of challenging prevailing scientific consensus.[93] Indeed, each of the report's authors has long rejected the overwhelming scientific consensus that human activity causes climate change, which in turn results in destructive and harmful consequences for human health and welfare.[94] And the authors' perspectives were already well known by Secretary Wright, who, for instance, hosted one of the authors for a "fireside chat" in 2021.[95] By handpicking this group, Secretary Wright predetermined the report's conclusions.

That Secretary Wright selected this particular group to draft the report is of little surprise considering his own history of climate denial. While chair and CEO of Liberty Energy, Inc., Wright declared under penalty of perjury that "there are extraordinary benefits of fossil fuels," that although "increased emissions are generally associated with warmer temperatures, there remains scientific uncertainty around feedback effects," and that "global temperature rise is—by itself—not the concern."[96] He also denied climate change's role in extreme weather events and falsely asserted that "it is simply incorrect to suggest that increasing extreme weather is posing a risk to business. If anything, the opposite is the case."[97] And in a 2023 video, then-Liberty Energy-CEO Wright declared "there is no climate crisis" and declared "the term 'carbon dioxide' pollution outrageous."[98] According to Secretary Wright, "carbon pollution is the most shameful

[92] DOE working group report at viii.

[93] *See* Travis Fisher, *Why I Helped Organize the Department of Energy's Climate Report*, CATO at Liberty (Aug. 6, 2025, 10:25 AM), https://perma.cc/CQ87-WCYF *and* Benjamin Storrow, *How Chris Wright Recruited a Team to Upend Climate Science*, E&E News (Aug. 11, 2025, 6:15 AM), https://perma.cc/TNJ5-J4M4.

[94] *See, e.g.*, Maxine Joselow, *Trump Hires Scientists Who Doubt the Consensus on Climate Change*, N.Y. Times (Jul. 8, 2025), https://www.nytimes.com/2025/07/08/climate/trump-climate-energy-department.html; Scott Waldman, *Trump team readies more attacks on mainstream climate science*, E&E News by Politico (Aug. 18, 2025), https://www.eenews.net/articles/trump-team-readies-more-attacks-on-mainstream-climate-science/.

[95] Liberty Energy, *Energy and the Current Narrative: Fireside Chat with Chris Wright and Dr. Steven Koonin*, YouTube (Jun. 29, 2021), https://www.youtube.com/watch?v=nizA7hjZg9c.

[96] Liberty Energy Decl. ¶¶ 21-23

[97] *Id.* ¶¶ 25, 29.

[98] Chris Wright, *Let's be honest*, YouTube (Jan. 18, 2023), https://www.youtube.com/watch?v=iI6EksICMB0&t=2s.

marketing term that I've ever heard."[99] And on a 2021 podcast, Wright declared "it's questionable electric cars whether they do much at all" and that "electric cars are the worst."[100]

As Secretary of Energy, Wright declared at CERAWeek 2025 that the Trump administration plans "to reverse the destructive mandates, forcing everyone to buy EVs that have been wreaking havoc on our auto industry and forcing higher prices and reduced choices on consumers."[101] In February 2025, Secretary Wright decried the pledge to achieve net zero carbon emissions by 2050 as a "sinister" and "terrible" goal, and referred to the energy transition as "lunacy."[102] And in an April 2025 speech, he questioned the motives of those working on decarbonization, stating:

> The other side of the fork deprives citizens, consumers of choice. It is top-down imposition of mandates for the energy system. This top-down imposition of enforced "climate policies" is justified as necessary to save the world from climate change.
>
> Might the causation actually run in the opposite direction? Could it be instead that a desire to grow centralization and re-establish top-down control is best served by climate alarmism? Is it the chicken or the egg? I don't know
>
> But I can say that climate alarmism has clearly reduced energy freedom, and, hence, prosperity and national security across Western Europe. Let me say that again. Climate alarmism has reduced freedom, prosperity, and national security.[103]

He added that, "[w]hile climate change is a real physical phenomenon, nothing in the data indicates that climate change is even close to the world's most urgent problem. In fact, the clarion conclusion from economic studies of climate change is that Net Zero 2050 is absolutely the wrong goal. Not only is it unachievable, but the blind pursuit of it will cause, is causing, far more human damage than climate change itself."[104]

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[99] *Id.*

[100] PetroNerds, *Liberty Oilfield Services: Nerding Out with Chris Wright* (Sep 18, 2021), https://petronerds.com/liberty-oilfield-services-nerding-out-with-chris-wright/ at 34:50–35:00.

[101] Press Release, DOE, Secretary of Energy Chris Wright Delivers Keynote Remarks at CERAWeek 2025 (Mar. 10, 2025), https://www.energy.gov/articles/secretary-energy-chris-wright-delivers-keynote-remarks-ceraweek-2025.

[102] William James and Alex Lawler, *US Energy Secretary attacks 'sinister' net zero goals, singling out Britain*, Reuters (Feb. 17, 2025), https://www.reuters.com/world/us-energy-secretary-attacks-sinister-net-zero-goals-singling-out-britain-2025-02-17/.

[103] Press Release, DOE, Energy Secretary Chris Wright Delivers Keynote Remarks at the Three Seas Business Forum in Warsaw, Poland (Apr. 28, 2025), https://www.energy.gov/articles/energy-secretary-chris-wright-delivers-keynote-remarks-three-seas-business-forum-warsaw.

[104] *Id.*

More recently, Secretary Wright described the broad scientific consensus that human influences cause climate change as an "Orwellian cancel culture" that is "just wrong,"[105] and complained that "people treat [climate change] too often as a religious issue."[106] He also called the Paris Agreement "silly" and stated that "Climate change, for impacting the quality of your life, is not incredibly important."[107]

Similar to Administrator Zeldin's comments on climate change, electric vehicles, and the endangerment finding, *see supra* section IV.B.i, Secretary Wright's statements demonstrate an unalterably closed mind on the impacts of climate change, the effects of greenhouse gases, and electric vehicles, making it inappropriate for EPA to rely on DOE's report to repeal the vehicle GHG standards.

iii. The government's full-scale assault on climate science demonstrates a preexisting internal directive to reach a particular result.

EPA claims to engage in an open inquiry while the government shuts down the means of assessing endangerment. This attack on the collection, maintenance, and dissemination of core scientific information about greenhouse gas emissions and climate change is evidence of a preexisting internal directive for EPA to reach a particular result, demonstrating EPA is acting with a closed mind. *See Nat'l Advertisers*, 627 F.2d at 1172. And claiming to rely on scientific evidence while simultaneously erasing it is quintessentially arbitrary and capricious.

First, the administration has launched an unprecedented campaign to scrub critical information about climate change from its websites. For example, the Trump administration scrubbed all past National Climate Assessments from the U.S. Global Change Research Program's website and dismissed the 400 scientists and experts working on the next edition of the assessment.[108] The purpose of National Climate Assessments is to "integrate and summarize current and anticipated climate change impacts on the United States to help inform decision making that will impact America's' future."[109] These reports are also required by Congress: the 1990 Global Change Research Act requires publication of an updated National Climate Assessment every four years. Additionally, the entire website climate.gov—a valuable resource

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[105] Callie Patteson, "Chris Wright defends DOE report on climate change despite 'small mistakes,'" Washington Examiner (Aug. 22, 2025), https://www.msn.com/en-us/news/opinion/chris-wright-defends-doe-report-on-climate-change-despite-small-mistakes/ar-AA1L2tbX.

[106] Lisa Friedman and Sachi Kitajima Mulkey, "Scientists Denounce Trump Administration's Climate Report," New York Times (Sept. 2, 2025) https://www.nytimes.com/2025/09/02/climate/climate-science-report-energy-department.html.

[107] Lisa Friedman, "Energy Secretary Attacks Offshore Wind and Dismisses Climate Change," New York Times (Sept. 5, 2025), https://www.nytimes.com/2025/09/05/climate/wright-energy-offshore-wind-turbines.html.

[108] Kate Yoder, *Why the federal government is making climate data disappear*, Grist (Jul. 14, 2025), https://grist.org/language/trump-administration-climate-data-disappear-national-climate-assessment/.

[109] NOAA, The Assessments Program, https://cpo.noaa.gov/the-assessments-program/.

for the public that housed important information about the impacts of climate changes—has been deleted.[110]

In addition to scrubbing information on climate change from its websites, the government's recent proposals to close stations collecting this information further demonstrates an internal directive to repeal the endangerment finding and vehicle GHG standards. Recent announcements of such closures are staggering. For example, the proposed 2026 budget would close the Mauna Loa Observatory, which has collected measurements of greenhouse gases in the atmosphere since 1958[111] and is "indispensable to scientists around the world."[112] The same proposal would close down three other observatories in Barrow, Alaska, American Samoa, and the South Pole that collect data that allow scientists to document and study climate change and make predictions about extreme weather events like droughts and heat waves.[113] The closure of these stations would end "almost all the climate research being done by the National Oceanic and Atmospheric Administration."[114] Moreover, NOAA's Global Monitoring lab—which processes air samples taken from around the world—would also close.[115] Closing data collection stations and scrubbing data from the government's websites both deprives the public of the information needed to comment on this rulemaking and evinces a predetermined, whole-of-government attack on the Endangerment Finding.

Finally, EPA has failed to provide mandatory reports on U.S. contribution to greenhouse gas emissions. The U.S. is required to submit a national greenhouse gas emissions inventory report every year to fulfill its obligations as a member of the United Nations Framework Convention on Climate Change.[116] The inventory is critical information, as it allows government officials and the public to understand where emissions originate and make informed policy decisions. Yet EPA failed to publish the inventory this year, marking the first time the U.S. has

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[110] Cat Zakrzewski, David Ovalle, Scott Dance and Laura Meckler, *Trump's answer to numbers he doesn't like: Change them or throw them away*, The Washington Post (Aug. 14, 2025), https://www.washingtonpost.com/politics/2025/08/14/trump-data-misinformation/.

[111] National Oceanic and Atmospheric Administration, American Chemical Society Honors Measurement Set at NOAA Observatory (Dec. 23, 2015), available at https://www.noaa.gov/media-release/american-chemical-society-honors-measurement-set-at-noaa-observatory.

[112] Rebecca Dzombak, *After 7 Decades of Measurements From a Peak in Hawaii, Trump's Budget Would End Them*, N.Y. Times (July 17, 2025), https://www.nytimes.com/2025/07/17/climate/budget-cuts-climate-observatories.html.

[113] *Id*.

[114] *Id*.

[115] *Mauna Loa Observatory faces closure under Trump budget proposal*, The Daily Climate (July 21, 2025), https://www.dailyclimate.org/mauna-loa-climate-lab-faces-closure-under-trump-budget-proposal-2673534443.html.

[116] United Nations Climate Change, Reporting Requirements, https://unfccc.int/process-and-meetings/transparency-and-reporting/reporting-and-review-under-the-convention/greenhouse-gas-inventories-annex-i-parties/reporting-requirements.

ever failed to meet this annual obligation.[117] Failure to meet this obligation, which EPA has met for the last 30 years, demonstrates not only that EPA has already predetermined the result of this rulemaking but is actively engaged in eviscerating the scientific work Congress directs it to undertake. And on top of this, EPA just proposed to broadly repeal the Greenhouse Gas Reporting Program, which requires sources and suppliers across a range of industrial sectors to report their GHG emissions data.[118] This recent proposal further illustrates an internal directive to gut publicly available information about climate change and climate science.

C. The EPA Administrator has abdicated his responsibility to exercise his independent judgment.

Section 202 of the Clean Air Act requires the Administrator to prescribe regulations for "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 (emphasis added). Administrator Zeldin must, therefore, exercise his *own* judgment as to whether emissions of greenhouse gases may reasonably be anticipated to endanger public health or welfare; he "must not blindly adopt the conclusions of . . . [another] agency"—in this case, the Department of Energy. *City of Tacoma, Washington v. FERC*, 460 F.3d 53, 76 (D.C. Cir. 2006). Failure to exercise his own judgment violates the plain text of section 202 and is arbitrary and capricious. *See Ergon-West Va., Inc. v. United States EPA*, 980 F.3d 403, 411 (4th Cir. 2020).

As shown above, Administrator Zeldin has prejudged the ultimate outcome of this rulemaking. In addition, the Administrator has not exercised his own judgment—as required by section 202—in determining core elements needed to support the outcome, including a technical assessment of climate change. Instead, Administrator Zeldin has outsourced this judgment to the Department of Energy. *See Envtl. Health Trust v. FCC*, 9 F.4th 893, 907 (D.C. Cir. 2021) (holding FCC violated APA by failing to provide a reasoned explanation for its decision where it only cited FDA's conclusory statements, noting that "[w]hat the Commission may not do, however, is rely on an outside expert's … conclusory statements in lieu of some reasoned explanation for its decision").

In many parts of the proposal (particularly in the "Climate Science Discussion"), EPA cites the Draft Report written by the DOE Climate Working Group (CWG Report) as its only source. For example, EPA asserts in the proposal that "recent empirical data and analyses suggest that the Endangerment Finding was unduly pessimistic in attributing health risks from heat waves to increases in global temperature" and "[n]otwithstanding increased public attention to heat waves, the data suggest that domestic temperatures peaked in the 1930s and have remained more or less stable, in relative terms, since those highs." 90 Fed. Reg. 36288, 36308. Despite

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[117] Grace Manthey and Tracey J. Wholf, *CBS Evening News The EPA didn't release its annual U.S. greenhouse gas emissions report, but we got the data. Here's what we found*, CBS News (May 12, 2025), https://www.cbsnews.com/news/greenhouse-gas-emissions-inventory-report-2025/; Jean Chemnick, *Trump admin silent as UN deadline passes for reporting GHG emissions*, E&E News by Politico (Apr. 16, 2025), https://www.eenews.net/articles/trump-admin-silent-as-un-deadline-passes-for-reporting-ghg-emissions/.

[118] EPA, *Reconsideration of the Greenhouse Gas Reporting Program*, 90 FR 44591 (Sep. 16, 2025).

alluding to "recent empirical data and analyses," EPA cites only the CWG Report as evidence for these assertions. *Id*. EPA then relies on the report to claim that "increased urbanization trends contribute to localized changes in temperature, including because an urban footprint traps heat and frustrates natural heat-cycling capacity at a localized and low-atmospheric level." *Id.*

Administrator Zeldin's reliance solely on the CWG Report continues. EPA claims that "recent data and analyses suggest that aggregate sea level rise has been minimal, at least with respect to impacts on the United States, and that sea level has risen in some domestic localities while falling in others," then cites only the CWG Report for this assertion. *Id.* at 36309. EPA claims that "the models relied upon by the Endangerment Finding may be incorrect with regard to warming in the U.S. Corn Belt given the divergence of recent empirical data from projected trends," citing only the CWG Report. *Id.* The proposal states that "the *Administrator* is concerned that the Endangerment Finding did not adequately balance the projected adverse impacts attributed to global climate change with the potential benefits to the United States of increased GHG concentrations, and increased CO_2 concentrations in particular," but then cites extensively and solely to the CWG Report for the proposition that "Recent data and analysis show that even marginal increases in CO_2 concentrations have substantial beneficial impacts on plant growth and agricultural productivity, and that this benefit has been significantly greater than previously believed." *Id*. 36309-10.

As explained in EF comments VIII, the draft CWG Report suffers from serious procedural and substantive flaws. The Administrator's unquestioning adoption of another agency's "clearly flawed" analysis is inappropriate. *See Ergon-W. Virginia, Inc. v. EPA*, 896 F.3d 600, 611 (4th Cir. 2018); *see also id.* (EPA "may not turn a blind eye to errors and omissions apparent on the face of the [DOE] report"); *U.S. Telecom Ass'n v. FCC*, 359 F.3d 554, 565-66 (D.C. Cir. 2004) (recognizing risks in agency "delegation to outside entities"); *Ergon-West Va., Inc. v. United States EPA*, 980 F.3d 403, 411 (4th Cir. 2020) ("an action agency's reliance on a facially-flawed report is arbitrary and capricious."); *Envtl. Health Trust v. FCC*, 9 F.4th 893, 907 (D.C. Cir. 2021) ("One agency's unexplained adoption of an unreasoned analysis just compounds rather than vitiates the analytical void. Said another way, two wrongs do not make a right.").

Not only did the Administrator abdicate his responsibility under CAA section 202, but there is also evidence that EPA failed to utilize its own internal expertise and that career staff were excluded from the process. For example, the Proposal lacks supportive citations to EPA's own technical work. In contrast, the 2009 Endangerment Finding was accompanied with lengthy and in-depth technical support documents[119] and multiple appendices.[120] The absence of any

[119] EPA, Draft Technical Support Document - Endangerment Analysis for Greenhouse Gas Emissions under the Clean Air Act, Docket ID EPA-HQ-OAR-2008-0318-0082 (Jul. 14, 2008), https://www.regulations.gov/document/EPA-HQ-OAR-2008-0318-0082; EPA, Technical Support Document - Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act (Dec. 7, 2009), https://www.epa.gov/sites/default/files/2021-05/documents/endangerment_tsd.pdf.

[120] EPA, Appendices and PDF Versions of EPA's Response to Public Comments on the Proposed Endangerment and Cause or Contribute Findings for Greenhouse Gases: Volumes 1–11, https://www.epa.gov/climate-change/appendices-and-pdf-versions-epas-response-public-comments-proposed-endangerment-and.

similar supporting material for this Proposal is noteworthy. Additionally, EPA staff was absent from all posted pre-proposal OMB meetings *before* July 23, 2025,[121] which is unprecedented. Politico then ran a story about EPA's absence from those OMB meetings on July 23, 2025.[122] Only after the publication of that article did EPA staff begin joining meetings.[123] This bypassing of EPA's technical staff is highly irregular.

D. EPA failed to consult with relevant stakeholders.

As further evidence of the lack of normal process in this rulemaking, the proposal shows a surprising lack of consultation with important stakeholders. This is in stark contrast with previous vehicle standards rulemakings, where EPA consulted with a wide variety of stakeholders both before and during the rulemaking process.

For example, in previous rulemakings for vehicles regulations, EPA consulted with Tribal stakeholders by offering a Tribal workshop, information sessions to Tribal organizations, and government-to-government consultation upon request. *See, e.g.*, 89 Fed. Reg. 27842, 28141 (Apr. 18, 2024) (light-duty vehicle regulations for MYs 2027 and later); 86 Fed. Reg. 74434, 74520 (Dec. 30, 2021) (light-duty vehicle regulations for MYs 2023 and later); 89 Fed. Reg. 29440, 29734 (Apr. 22, 2024) (heavy-duty vehicle Phase 3 regulations); 81 Fed. Reg. 73478, 73966 (Oct. 25, 2016) (heavy-duty vehicle Phase 3 regulations). In addition to Tribal engagement, in previous rulemakings EPA coordinated with state partners, including the California Air Resources Board on technical issues, as well as members of the National

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[121] *See, e.g.*, https://www.reginfo.gov/public/do/viewEO12866Meeting?viewRule=false&rin=2060-AW71&meetingId=1023923&acronym=2060-EPA/OAR (July 10, 2025 meeting attended only by one OMB employee); https://www.reginfo.gov/public/do/viewEO12866Meeting?viewRule=false&rin=2060-AW71&meetingId=1023973&acronym=2060-EPA/OAR (same); https://www.reginfo.gov/public/do/viewEO12866Meeting?viewRule=false&rin=2060-AW71&meetingId=1024073&acronym=2060-EPA/OAR (July 14, 2025 meeting attended only by one OMB employee); https://www.reginfo.gov/public/do/viewEO12866Meeting?viewRule=false&rin=2060-AW71&meetingId=1024023&acronym=2060-EPA/OAR (same); https://www.reginfo.gov/public/do/viewEO12866Meeting?viewRule=false&rin=2060-AW71&meetingId=1024173&acronym=2060-EPA/OAR (July 15, 2025 meeting attended only by one OMB employee); https://www.reginfo.gov/public/do/viewEO12866Meeting?viewRule=false&rin=2060-AW71&meetingId=1024723&acronym=2060-EPA/OAR (same); https://www.reginfo.gov/public/do/viewEO12866Meeting?viewRule=false&rin=2060-AW71&meetingId=1024223&acronym=2060-EPA/OAR (July 16, 2025 meeting attended only by one OMB employee); https://www.reginfo.gov/public/do/viewEO12866Meeting?viewRule=false&rin=2060-AW71&meetingId=1024523&acronym=2060-EPA/OAR (same).

[122] Jean Chemnick *EPA a no-show at endangerment finding meetings*, E&E News by Politico (Jul. 23, 2025), https://subscriber.politicopro.com/article/eenews/2025/07/23/epa-a-no-show-at-endangerment-finding-meetings-00468752.

[123] *See, e.g.*, https://www.reginfo.gov/public/do/viewEO12866Meeting?viewRule=false&rin=2060-AW76&meetingId=1031523&acronym=2060-EPA/OAR (July 25, 2025 meeting attended by staff at EPA and OMB); https://www.reginfo.gov/public/do/viewEO12866Meeting?viewRule=false&rin=2060-AW71&meetingId=1026423&acronym=2060-EPA/OAR (July 28, 2025 meeting attended by staff at EPA and OMB); https://www.reginfo.gov/public/do/viewEO12866Meeting?viewRule=false&rin=2060-AW71&meetingId=1033923&acronym=2060-EPA/OAR (same).

Association of Clean Air Agencies, Northeast States for Coordinated Air Use Management, and the Ozone Transport Commission. *See* 89 Fed. Reg. at 27982; 89 Fed. Reg. at 29458-59; 86 Fed. Reg. at 74456; 77 Fed. Reg. 62624, 62634 (Oct. 15, 2012) (GHG emissions and CAFE standards for MYs 2027 and later). EPA also took the time prior to and during these rulemakings to engage with many other stakeholders, including labor unions, public health experts, environmental justice organizations, NGOs, vehicle manufacturers, suppliers, dealers, utilities, charging providers, local governments, alternative fuels industries, and consumer groups. Prior to issuing its proposal for the heavy-duty vehicle Phase 3 rule, for example, EPA held a series of engagement sessions with all of these groups to get early input as it developed its proposal. *See* 89 Fed. Reg. at 29459.

Despite its past practice of engaging with these stakeholders, there is no evidence from the proposal that EPA has engaged with even a fraction of these stakeholders in this rulemaking. And the proposal offers no explanation for this change in course.

E. EPA failed to consult with the SAB and violated multiple policies ensuring that the agency engages in scientifically-sound decision-making.

i. EPA has not shown that it complied with SAB consultation requirements.

Under the Environmental Research, Development, and Demonstration Authorization Act of 1978 (ERDDAA), "[t]he Administrator, at the time any proposed criteria document, standard, limitation, or regulation under the [CAA] … is provided to any other Federal agency for formal review and comment, shall make available to the [SAB] [that proposed action], together with relevant scientific and technical information in the possession of the [EPA] on which the proposed action is based." 42 U.S.C. § 4365(c)(1).

In the Proposal, EPA concedes that vehicle emissions standards are subject to this requirement. Specifically, the Proposal asserts that, "as a result of the approach taken in the Endangerment Finding, the Administrator's conclusions with respect to new motor vehicles and engines were never subject to SAB review *as required* by the CAA." 90 Fed. Reg. at 36310 (emphasis added). Although that statement is incorrect as to the Endangerment Finding, which was not a "criteria document, standard, limitation, or regulation," *see* EF Comments V., it applies directly to the Proposal, which "proposes to rescind all greenhouse gas (GHG) emission standards for light-duty, medium-duty, and heavy-duty vehicles and engines under CAA section 202(a)." *Id.* at 36289. As a result, under EPA's own interpretation of when "SAB review [i]s required by the CAA," EPA was required to submit the proposed repeal of the vehicle emissions standards to the SAB.

Consistent with this interpretation, EPA has for at least the past decade consistently notified the SAB of vehicle emissions standards rulemakings and provided them to the SAB for review when requested. Thus, for example, the SAB reviewed and prepared a report on the 2022 proposed update to heavy-duty emissions standards.[124] The SAB also considered whether to

[124] SAB Draft Regulatory Review Report of Science Supporting EPA Decisions for the Proposed Rule: Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards (Sept. 27, 2022), https://www.regulations.gov/document/EPA-HQ-OAR-2019-0055-2960.

review the Phase 2 GHG standards for heavy-duty vehicles in 2014 and the Phase 3 standards in 2023, in each case concluding that review was unnecessary because the science underlying those rules was already undergoing peer review by other bodies.[125] Similarly, the SAB prepared a report in 2020 on the SAFE Vehicles Rule,[126] while considering but declining to review the 2027 and later multi-pollutant standards for light-duty vehicles,[127] and received a briefing from EPA staff in 2021 on the proposed revisions to the 2023-2026 light-duty vehicle GHG standards.[128]

Although the Proposal does not address whether EPA provided it to the SAB, the agency clearly did not.[129] The SAB does not currently exist. EPA Acting Administrator James Payne dismissed all members of the SAB on January 28, 2025.[130] The webpage that would normally list the members of the SAB is blank, except for the name of the designated federal officer.[131] EPA requested nominations for the board on May 1, 2025,[132] and posted a list of candidates on August 14, 2025, with comments due by September 4, 2025.[133] The EPA cannot have "made available" the Proposal to a nonexistent body.

ii. EPA violated Information Quality Act requirements by, among other things, failing to subject the proposal's scientific analysis to peer review.

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[125] SAB Meeting Minutes (June 11, 2014), https://www.regulations.gov/document/EPA-HQ-OAR-2014-0827-0749; Memorandum from Alison Cullen, Chair, SAB, to Members of the Chartered SAB and SAB Liaisons (June 5, 2023), https://www.regulations.gov/document/EPA-HQ-OAR-2022-0985-2762.

[126] Science Advisory Board Report, "Science Advisory Board (SAB) Consideration of the Scientific and Technical Basis of the EPA's Proposed Rule titled, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks," (Feb. 27, 2020), https://www.regulations.gov/document/EPA-HQ-OAR-2018-0283-7659.

[127] Memorandum from Alison Cullen, Chair, SAB, to Members of the Chartered SAB and SAB Liaisons (June 5, 2023), https://www.regulations.gov/document/EPA-HQ-OAR-2022-0829-5136.

[128] EPA's Proposed Rule for Light-duty Vehicle Greenhouse Gas Emissions Standards for Model Years 2023-2026, Briefing for the EPA Science Advisory Board, U.S. EPA, Office of Transportation and Air Quality, December 13, 2021, https://www.regulations.gov/document/EPA-HQ-OAR-2021-0208-0829.

[129] There are no documents in the docket for this rulemaking mentioning the SAB. *See* https://www.regulations.gov/docket/EPA-HQ-OAR-2025-0194/document?filter=%22science%20advisory%20board%22 (search of docket documents for "science advisory board" produces no results) (last visited Sept. 11, 2025).

[130] Sean Reilly, *'Do what y'all need to do': How EPA fired its science advisers*, Greenwire (July 24, 2025), https://subscriber.politicopro.com/article/eenews/2025/07/24/do-what-yall-need-to-do-how-epa-fired-its-science-advisers-00469549.

[131] EPA, *Board*, https://sab.epa.gov/ords/sab/r/sab_apex/sab/tier-1-members?p29_committeeon=Board&clear=29&session=15316316897552 (last visited Aug. 15, 2025).

[132] Request for Nominations of Candidates to the EPA Science Advisory Board, 90 Fed. Reg. 18657 (May 1, 2025).

[133] EPA, May 2025 Nominations for Science Advisory Board (SAB) Membership, https://sab.epa.gov/ords/sab/r/sab_apex/sab/advisoryactivitydetail?p18_id=2662&clear=18&session=34555462226353 (last visited Aug. 15, 2025).

The Information Quality Act (IQA), section 515 of Public Law 106-554, directs the White House Office of Management and Budget (OMB), to "issue guidelines … that provide policy and procedural guidance to Federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies." Pub. L. No. 106-554, § 515(a), 114 Stat. 2763A-154 (2000). OMB's IQA guidelines are "binding" on federal agencies. *Prime Time Int'l Co. v. Vilsack*, 599 F.3d 678, 685 (D.C. Cir. 2010).

Under OMB's Final Information Quality Bulletin for Peer Review, which it issued pursuant to the IQA in 2004, agencies must subject any "influential scientific information" to peer review before disseminating it. Final Information Quality Bulletin for Peer Review, 70 Fed. Reg. 2664, 2667-68 (Jan. 14, 2005). Such peer review must include opportunities for public participation, including providing the public with the charge questions to the peer review panel and holding a public meeting where members of the public can make presentations to the peer review panel. *Id.* at 2665, 2676.

For a subset of influential scientific information referred to as "highly influential scientific assessments," the Bulletin "requires a more rigorous form of peer review," under which "agencies typically will have to devote greater resources and attention to … issues" such as "individual versus panel review; timing; scope of the review; selection of reviewers; disclosure and attribution; public participation; and disposition of reviewer comments." *Id*. at 2671. The Bulletin defines highly influential scientific assessments based on two characteristics. First, "[a] scientific assessment is an evaluation of a body of scientific or technical knowledge that typically synthesizes multiple inputs, data, models, assumptions, and/or applies best professional judgment to bridge uncertainties in the available information." *Id*. at 2665. Second, a scientific assessment is "highly influential" "if the agency or the OIRA Administrator determines that the dissemination could have a potential impact of more than $500 million in any one year on either the public or private sector or that the dissemination is novel, controversial, or precedent-setting, or has significant interagency interest." *Id.* at 2671. Given the significance of this rulemaking, and the weight that EPA attaches to the CWG report, that report clearly constitutes a highly influential scientific assessment.

Nothing in the DOE CWG report—which as explained above, EPA relies on substantially—suggests that it has undergone *any* sort of standard independent peer review, instead being subject only to a minimal review by undisclosed individuals at DOE. *See* EF comments VIII. for more detail on problems with CWG report. Nor does EPA identify any peer review, by the SAB or otherwise, of the other scientific information in the Proposal. This contrasts with prior vehicle standards rulemakings, which, as noted above, have been presented to the SAB for review. *See* Comment III.E., *supra*. Moreover, peer review of those earlier rules was not limited to SAB review. For example, when promulgating the multi-pollutant emissions standards MY2027 and later light-duty vehicles, EPA explained that it had conducted the following peer review:

> This regulatory action was supported by influential scientific information. EPA therefore conducted peer review in accordance with OMB's Final Information Quality Bulletin for Peer Review. Specifically, we conducted peer review on six analyses: (1) Optimization Model for reducing Emissions of Greenhouse gases

> from Automobiles (OMEGA 2.0), (2) Advanced Light-duty Powertrain and Hybrid Analysis (ALPHA3), (3) Motor Vehicle Emission Simulator (MOVES), (4) The Effects of New-Vehicle Price Changes on New- and Used-Vehicle Markets and Scrappage; (5) Literature Review on U.S. Consumer Acceptance of New Personally Owned Light-Duty Plug-in Electric Vehicles; (6) Cost and Technology Evaluation, Conventional Powertrain Vehicle Compared to an Electrified Powertrain Vehicle, Same Vehicle Class and OEM. All peer reviews were in the form of letter reviews conducted by a contractor. The peer review reports for each analysis are in the docket for this action and at EPA's Science Inventory (*https://cfpub.epa.gov/si/*).

89 Fed. Reg. at 27842. Given the highly influential nature of the information in the CWG report and in EPA's Proposal, not to mention their departures from decades of well-settled scientific understandings, the information therein should have undergone rigorous, independent peer review, and EPA's failure to provide such peer review is "of central relevance to the rule." 42 U.S.C. § 7607(d)(8), (d)(9)(D)(iii). The Proposal thus failed to comply with the IQA and CAA and EPA should therefore withdraw the Proposal and undertake the required peer review.[134]

iii. The proposal is inconsistent with the Gold Science Executive Order

Although the Proposal purports to discount the value of National Climate Assessments and IPCC Assessment Reports because of alleged inconsistencies with "the transparency and reliability requirements of Executive Order 14303, 'Restoring Gold Standard Science,'" the Proposal itself is inconsistent with that EO. (As explained in EF Comments VIII.A., the NCAs and IPCC reports are not in fact inconsistent with the EO.)

EO 14303 establishes nine requirements for federal government science: it must be (1) reproducible; (2) transparent; (3) communicative of error and uncertainty; (4) collaborative and interdisciplinary; (5) skeptical of its findings and assumptions; (6) structured for falsifiability of hypotheses; (7) subject to unbiased peer review; (8) accepting of negative results as positive outcomes; and (9) without conflicts of interest. Exec. Order No. 14303, § 3, 90 Fed. Reg. 22601 (May 29, 2025). As explained in EF Comments VIII., the CWG Report is inconsistent with all nine requirements. The Proposal, in relying on the CWG Report, is also inconsistent with the executive order for that reason.

In addition, there are multiple instances in the preamble and RIA where EPA does not make publicly available "the data, analyses, and conclusions associated with scientific and technological information produced or used by the agency that the agency reasonably assesses will have a clear and substantial effect on important public policies," as well as "the models and analyses (including, as applicable, the source code for such models) the agency used to generate such influential scientific information," in violation of section 4(b)(i) of the EO. For example, the RIA includes a figure, Figure RIA-1, that purports to present the percentage of light-duty vehicle sales made up of EVs, comparing EPA's 2021 projection and actual sales. RIA at 35. Yet it cites no source for the actual sales numbers, includes no gridlines in the figure to make the

[134] *See also* EF Comments, which describes multiple other ways that the CWG Report violates the IQA and DOE's and EPA's IQA guidelines.

numbers legible, and even claims to have "actual" numbers for 2025 even though the year is not over. (It does not specify which months in 2025 are covered.) Similarly, the Proposal asserts that "global warming trends from 1979 to 2023 … were determined to a precision (or margin of error) of plus or minus 15 percent total." 90 Fed. Reg. at 36311. EPA cites only the CWG Report for the 15 percent figure, and that report in turn provides no citations or analysis for the number. CWG Report at 130.

More fundamentally, the basic approach of the Proposal is inconsistent with section 4(f) of the EO, which states that "[w]hen scientific or technological information is used to inform agency evaluations and subsequent decision-making, employees shall apply a 'weight of scientific evidence' approach." As the EO defines it, "weight of scientific evidence" "means an approach to scientific evaluation in which each piece of relevant information is considered based on its quality and relevance, and then transparently integrated with other relevant information to inform the scientific evaluation prior to making a judgment about the scientific evaluation." Sec. 2(e). In other words, agencies must weigh the scientific evidence before them and reach a "judgment" based on it. Instead of doing this, however, the Proposal repeatedly adopts a "just asking questions" approach in which it raises doubts about the factfinding underlying the Endangerment Finding without actually weighing the evidence for and against it.[135]

F. To the extent that EPA has relied on, or intends to rely on, artificial intelligence tools, the failure to disclose that use or intention in this proposal violates applicable procedural requirements.

EPA must disclose whether and how it has used artificial intelligence ("AI") in this rulemaking. While EPA provides a general disclosure on its website explaining that it may use AI to sort and process comments during rulemakings,[136] EPA should provide a more detailed disclosure about how it used AI in this particular rulemaking. Specifically, if AI has been used, EPA must describe the AI tools employed and explain how the agency has used them, including EPA's inputs and the AI tool's outputs.[137] AI can be used appropriately to improve agency efficiency, but its use must be properly moderated and disclosed.

Under the Administrative Procedure Act and the Clean Air Act, EPA is required to accompany its proposed rule with a statement of the rule's basis and purpose. 5 U.S.C. § 553(c);

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[135] *See, e.g.,* 90 Fed. Reg. 36288, 36296 ("There may also be as-yet-unidentified issues or discrepancies present in the underlying TSD and scientific justifications offered in the Endangerment Finding."); *id.* at 36309 ("The Administrator also questions whether it was appropriate for the Endangerment Finding to exclude any analysis of adaptation with respect to sea level rise in particular. . . . The lack of analysis of adaptation generally, and particularly with respect to sea level rise, reduces confidence in the reasonableness, accuracy, and reliability of the assumptions and conclusions in the Endangerment Finding."); *id.* at 36310 (noting that the "Administrator also questions the decision in the Endangerment Finding to consider together all six 'well-mixed' GHGs rather than analyzing the properties and impacts of each on an individual basis" but not actually analyzing the properties of these six greenhouse gases).

[136] EPA, Commenting on EPA Dockets, https://www.epa.gov/dockets/commenting-epa-dockets.

[137] For a more fulsome list of questions EPA should answer in disclosing its AI use, see *AI in Agency Rulemaking: Legal Guardrails Issue Brief*, Governing for Impact (July 2025) at 16,

42 U.S.C. § 7607(d)(3). The Clean Air Act's procedural requirements for rulemaking, 42 U.S.C. § 7607(d), clarify that the statement of the rule's basis and purpose must include a summary of "the factual data on which the proposed rule is based" and "the methodology used in obtaining the data and in analyzing the data." *Id.*§ 7607(d)(3)(A)-(B). If artificial intelligence is used to generate data, analyze data, or otherwise execute data-processing tasks in the course of Agency rulemaking, it constitutes a "methodology" used to generate the proposed rule. Therefore, any use of AI to construct the proposed rule must be disclosed. *Id.* § 7607(d)(3). If the rule is promulgated, the final rule will similarly be required to disclose any use of AI in the methodology behind the rule. *Id.* § 7607(d)(6)(A). These requirements safeguard against potential errors that can occur during rulemaking by providing the public an opportunity to identify and correct such errors. To the extent that EPA has used AI in this proposed rulemaking––or intends to use it in the final rulemaking—and failed to disclose that use or intention in the rule's statement of basis and purpose, it removes those safeguards in violation of its statutory obligations.

Additionally, reliance on AI for information or data in any part of the rulemaking must be disclosed under the docket requirements of 42 U.S.C. § 7607(d)(6)(C), and a failure to disclose AI use would result in an incomplete record for judicial review. *Id.* § 7607(d)(7)(A). Courts have declared that these mandatory disclosures are "the safety valves in the use of… sophisticated methodology." *Sierra Club v. Costle*, 657 F.2d 298, 334 (D.C. Cir. 1981). These disclosure requirements are necessary to ensure that agency AI adoption remains open to both public inspection and judicial review. If EPA has used AI in this rulemaking and fails to disclose it in the docket, it hides potential errors and biases from public view, again in violation of the Clean Air Act's procedural requirements.

Moreover, any undisclosed use of AI could render EPA's rule unlawful. When an agency uses computer models to formulate a proposed rule, the agency "must explain the assumptions and methodology used in preparing the model." *Owner-Operator Ind. Drivers Ass'n, Inc. v. Fed. Motor Carrier Safety Admin.*, 494 F.3d 188, 204 (D.C. Cir. 2007). These explanations ensure that the "ultimate responsibility for the policy decision remains with the agency rather than the computer." *Sierra Club*, 657 F.2d at 334-35. Therefore, agencies using AI should disclose, at a minimum, "algorithmic specifications, including the objective function being optimized, the method used for that optimization, and the algorithm's input variables."[138]

In addition to statutory requirements, recent executive branch directives require AI-use disclosure. The executive actions reflect the Administration's understanding that agency AI disclosure is necessary for correcting agency errors and shortcomings, in addition to building public trust. For example, the Office of Management and Budget requires in OMB Memo M-25-21 that when an agency uses AI, the agency must "publicly release a summary describing"

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https://governingforimpact.org/wp-content/uploads/2025/07/AI-in-Agency-Rulemaking_Legal-Guardrails.pdf.

[138] Cary Coglianese and David Lehr, *Regulating by Robot: Administrative Decision Making in the Machine-Learning Era*, 105 GEO. L. J. 1147, 1208 (2017).

whether its use is "high-impact."[139] If EPA's rule uses potentially high-impact AI, EPA must follow several additional requirements outlined in OMB Memo M-25-21, Appendix 4. These requirements include, but are not limited to, ensuring that "individuals affected by AI-enabled decisions have access to a timely human review and a chance to appeal any negative impacts, when appropriate."[140] Even if EPA does not use high-impact AI, the Memo recommends that EPA maintain a "transparent process that seeks public input, comments, or feedback from the affected groups in a meaningful, accessible, and effective manner" regarding AI use.[141]

These OMB guidelines are consistent with key executive action from the first Trump administration. In his December 2020 Executive Order, "Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government," President Trump acknowledged that "the ongoing adoption and acceptance of AI will depend significantly on public trust," and required agencies to "design, develop, acquire, and use AI in a manner that fosters public trust." Exec. Order No. 13960, 85 Fed. Reg. 78,939 (Dec. 8, 2020). The Order specified that "the design, development, acquisition, and use of AI, as well as relevant inputs and outputs of particular AI applications, should be well documented and traceable." Exec. Order No. 13960. Like the Administrative Procedure Act and Clean Air Act's procedural requirements, this Order compels disclosure in the interest of avoiding hidden errors and biases in agency decision-making and providing the public a meaningful opportunity to comment on agency practice.

For all of these reasons, to the extent EPA used or plans to use AI tools in this rulemaking, it should document its use and any relevant inputs and outputs for the public.

G. The EPA Proposal Violates the Endangered Species Act.

The EPA has ignored its duty of consultation under the Endangered Species Act ("ESA"), 16 U.S.C. § 1531 in promulgating the Proposal. Before finalizing the Proposal or the

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[139] Office of Mgmt. & Budget, Exec. Office of the President, Memorandum M-25-21, Accelerating Federal Use of AI through Innovation, Governance, and Public Trust (2025). This document defines "high-impact" as follows: "AI is considered high-impact when its output serves as a principal basis for decisions or actions that have a legal, material, binding, or significant effect on rights or safety."

[140] *Id.* at 17.

[141] *Id.* at 24. These OMB guidelines for federal agencies also reflect country-wide efforts to increase AI oversight and disclosure in government. In 2024 alone, 12 laws regulating public sector uses of AI were passed by state legislatures and over 40 bills were introduced. Quinn Anex-Ries, *Regulating Public Sector AI: Emerging Trends in State Legislation*, CTR. FOR DEMOCRACY & TECH. (Jan. 10, 2025), https://cdt.org/insights/regulating-public-sector-ai-emerging-trends-in-state-legislation/. *See also* OMB Circular A-4 (asking for transparency in regulatory analysis, "[agencies] should clearly set out the basic assumptions, methods, and data underlying the analysis")

accompanying Draft Regulatory Impact Analysis,[142] EPA must comply with the ESA's consultation provisions.

i. The proposed repeal is a non-ministerial action that triggers the ESA's duty to consult.

The Proposal is a discretionary and thus non-ministerial action for a number of reasons. EPA used its discretion to decide whether to review the endangerment finding at all; whether to review the EPA vehicle GHG rules in addition to the endangerment finding; whether to propose revoking the endangerment finding; and whether to propose revoking the EPA vehicle GHG rules whether the endangerment finding is revoked or not. The agency also used its discretion in deciding which factors to analyze in its review of the endangerment finding and vehicle GHG rules, how to analyze and weigh the significance of those factors, and how to analyze and weigh the factual and legal bases for its conclusions as described in its Proposal.[143]

EPA's own views on its exercise of discretion are apparent from the August 1, 2025 Proposed Rule.[144] For example:

> In proposing this alternative, we note that the Supreme Court has continued to emphasize that agencies have significant discretion when making complex judgments within the bounds of an authorizing statute. We propose that the Administrator may now exercise the discretion expressly delegated to him by Congress in the text of CAA section 202(a) by rescinding the Endangerment Finding.[145]
>
> The EPA proposes that nothing in the language of the statute prohibits or conditions our general authority to rescind prior actions. CAA section 202(a)(1) grants the Administrator discretion to ''revise'' standards prescribed ''in accordance with the provisions of this section'' and does not require retaining the same level of stringency when revising or rescinding existing standards.[146] ***
>
> In the alternative, the EPA proposes that even if CAA section 202(a) could be read to authorize prescribing GHG emission standards for new motor vehicles and engines, the Endangerment Finding unreasonably applied the statutory standard for regulation to the scientific record and should be rescinded on that basis. This subsection proposes several reasons that the Administrator would exercise his discretionary judgment differently today in light of intervening legal and scientific

[142] EPA, Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards, Docket No. EPA-HQ-OAR-2025-0194-0086 (Aug. 1, 2025), https://www.regulations.gov/document/EPA-HQ-OAR-2025-0194-0093.

[143] *See, e.g.*, the factors described in Sections I, IV, V, and VI of the Proposal.

[144] Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicles Standard, 90 Fed. Reg. 36288 (Aug. 1, 2025) (amending 40 C.F.R. §§ 85, 86, 600, 1036, 1037, 1039).

[145] *Id*. at 36291.

[146] *Id*. at 36296.

> developments that appear to undermine the assumptions, methodologies, and conclusions of the Endangerment Finding.[147] ***
>
> Based on this review of the Endangerment Finding and the most recently available scientific information, data, and studies, the Administrator proposes to find, in an exercise in discretionary judgment, that there is insufficient reliable information to retain the conclusion that GHG emissions from new motor vehicles and engines in the United States cause or contribute to endangerment to public health and welfare in the form of global climate change.[148] ***
>
> As explained above, the Administrator previously asserted in the Endangerment Finding that CAA section 202(a) grants ''procedural discretion'' to sever the findings that trigger regulation from consideration of the resulting regulations and to sever the endangerment analysis from the causation or contribution analysis. We propose that the Administrator would now exercise such discretion differently to ensure greater reliability, transparency, and public accountability in the EPA's invocation of regulatory authority.[149]

Accordingly, the Proposal is a discretionary, non-ministerial action by EPA and subject to the requirements of the ESA.[150]

ii. EPA must complete ESA consultation because the proposal may affect listed species or critical habitats.

Section 7 of the ESA requires a federal agency (here, EPA) to complete formal consultation with the United States Fish and Wildlife Service or the National Oceanic and Atmospheric Administration (depending on the location of the species) if the agency determines that any action on its part "may affect" any listed species or critical habitat. 50 C.F.R. Section 402.14(a) provides in part:

> Each Federal agency shall review its actions at the earliest possible time to determine whether any action may affect listed species or critical habitat. If such a determination is made, formal consultation is required, except as noted in paragraph (b) of this section.

In *Ctr. for Biological Diversity v. United States BLM*, 141 F.4th 976, 1011 (9th Cir. 2025), the Court explained:

> If listed species "may be present" in an agency's project area, the agency must conduct a "biological assessment" to identify listed species "likely to be affected"

[147] *Id*. at 36307.

[148] *Id*. at 36310.

[149] *Id*.

[150] *See also infra*Sec. VII.A explaining that EPA's action in promulgating the Proposal is subject to reasoned decision making and is largely discretionary.

> by the project. Id. § 1536(c)(1). If the agency determines that its proposed action "may affect" any listed species or its critical habitat, then consultation—either formal or informal—is required. *Karuk Tribe*, 681 F.3d at 1027. An agency can only avoid consultation if its action will have "no effect" on a listed species or critical habitat. *Id*.

See also West Watershed Project v. Kraayenbrink, 632 F.3d 472, 495 (9th Cir. 2011) (Section 7 requires formal consultation if the agency determines that any action on its part "may affect" any listed species or critical habitat.)

"'May affect' purposefully sets a low bar: 'Any possible effect, whether beneficial, benign, adverse or of an undetermined character, triggers the formal consultation requirement.'" *Growth Energy v. EPA*, 5 F.4th 1, 30 (D.C. Cir. 2021), (citing 51 Fed. Reg. 19,926, 19,949 (June 3, 1986); *see also Karuk Tribe of Cal. v. United States Forest Serv*., 681 F,3d 1006, 1027 (9th Cir. 2012); *Northern Plains Res. Council v. United States Army Corps of Eng'rs*, 454 F.Supp.3d 985 (D. Mont. 2020).[151] In carrying out the consultation process, agencies must use the "best scientific and commercial data available" to fulfill the requirements of the ESA. 16 U.S.C. § 1536(a)(2). Only if the federal agency finds that its proposed action "will not affect any listed species or critical habitat in any way"—i.e., makes a "no effect" determination—can it skip the consultation process. *In re Ctr. for Biological Diversity & Ctr. for Food Safety*, 53 F.4th 665, 668 (D.C. Cir. 2022).

Once a finding is made that a proposed federal agency action may affect any listed species or critical habitat, consultation is required. During that consultation, pursuant to 50 CFR § 402.02 the Fish and Wildlife Service will determine the effects of the action, defined in 50 CFR § 402.02 as:

> [A]ll consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action but that are not part of the action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action.

If the agency determines that the proposed action may affect and is likely to adversely affect a listed species, then formal consultation with EPA is required.[152]

Here, because EPA has not initiated any consultation with the Fish and Wildlife Service or the National Marine Fisheries Service (collectively the "Services"), formal or informal, the

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[151] *See also* U.S. Fish & Wildlife Serv. & Nat'l Marine Fisheries Serv., *Endangered Species Consultation Handbook* 3 (Mar. 1998), https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf (last visited Sept. 15, 2025) (defining "may affect" as "the appropriate conclusion when a proposed action may pose any effects on listed species or designated critical habitat").

[152] EPA, *Endangered Species Act Overview* (2023), https://www.epa.gov/system/files/documents/2023-07/ESA-Overview.pdf (last visited Sept. 16, 2025).

evidence in this letter that the Proposal[153] "may affect" an endangered species or its habitat is enough to require the initiation of consultation by EPA. During consultation, there is more than sufficient evidence in the record to show that adverse effects described in that evidence are "consequences" of the Proposal in that they meet both the "but for" and "reasonably likely to occur" provisions of 50 CFR § 402.02 quoted above, thus requiring a full Biological Opinion from the Services.

iii. The scientific evidence clearly shows that the proposal will adversely affect federally listed species, including causing adverse modification of critical habitat and jeopardy for some species.

As detailed below, the Proposal clearly crosses the "may affect" threshold because the resulting large increases in GHGs and criteria air pollutant emissions would unquestionably affect hundreds of federally listed species that are threatened by GHG-driven climate change and NOx and SO_2 emissions. For example, the enormous increase in GHG emissions resulting from the Proposal will not only adversely affect sea ice-dependent polar bears, ringed seals, and bearded seals, but it will also adversely modify their critical habitat and cause jeopardy for polar bears by appreciably diminishing the species' likelihood of survival and recovery. The Proposal's increases in GHG emissions will also adversely affect many other climate-sensitive listed species and their critical habitat such as corals and coastal and island species. The Proposal's resulting increases in NOx criteria air pollutants will likewise adversely affect listed species such as the endangered bay checkerspot butterfly which was listed specifically due to the harms from nitrogen deposition from vehicle exhaust. The scientific evidence detailed below clearly shows that the Proposal "may affect," and is likely to adversely affect, numerous listed species, including, but not limited to, the species described in these comments. The scientific evidence further shows that the Proposal would cause jeopardy and adverse modification to critical habitat for some sensitive species such as the polar bear.

a. The proposal will result in significant emissions of greenhouse gases and criteria pollutants.

While the Draft Regulatory Impact Analysis carefully avoids quantitative predictions of emissions of future GHG and other pollutants, the clear and obvious result of the Proposal will be a large increase both in mobile source GHGs and fossil fuel combustion products as internal combustion engines increase and zero emissions vehicles decrease, including nitrogen oxide (NOx) air pollutants such as nitrous oxide (N_2O), nitric acid (HNO_3), nitrate (NO_3-), and ammonia (NH_3) (collectively, "NOx"), sulfur dioxide (SO_2), and particulate matter (PM). *See* supra Comment I.C. These actions would also significantly increase stationary GHG and criteria pollutant emissions, including NOx, SO_2, and PM, from petroleum refineries due to increased domestic gasoline refining and also from increased domestic oil production to supply internal combustion engines, above the level that would have occurred if the rules were left unchanged.

The National Climate Assessments and Intergovernmental Panel on Climate Change reports make clear that every ton of additional CO_2 emissions matters: "[e]very ton of CO_2 adds

[153] The promulgation of Federal Regulations are actions subject to the ESA (50 CFR § 402.2 (2025)).

to global warming"[154] and its harms. The reports underscore that the damages of climate change are long-lived and the choices governments make now on reducing greenhouse gas pollution will affect the severity of the harms that will be suffered in the coming decades and centuries: "[t]he more the planet warms, the greater the impacts. Without rapid and deep reductions in global greenhouse gas emissions from human activities, the risks of accelerating sea level rise, intensifying extreme weather, and other harmful climate impacts will continue to grow. Each additional increment of warming is expected to lead to more damage and greater economic losses compared to previous increments of warming, while the risk of catastrophic or unforeseen consequences also increases."[155] These reports find that the U.S. must make immediate, deep reductions in CO_2 and other greenhouse gas emissions such that global GHG emissions peak by 2025, fall 48% below 2019 levels by 2030, and reach net zero by early 2050s to meet Paris Agreement climate targets and avoid devastating damages, including to species and ecosystems.[156] The Fifth National Climate Assessment states that "U.S. net greenhouse gas emissions remain substantial and would have to decline by more than 6% per year on average, reaching net zero around midcentury, to meet current national climate targets and international temperature goals (*very high confidence*),"[157] and that national GHG reductions would include decarbonization of the transportation sector including "widespread electrification of transportation (*high confidence*)."[158]

b. Anthropogenic greenhouse gas emissions and resulting climate change have well-documented adverse impacts on species and ecosystems.

An enormous body of scientific research has documented the growing harms of greenhouse gas emissions and resulting anthropogenic climate change on species and ecosystems, as rising temperatures, more extreme weather events, coastal flooding, sea ice loss and glacier melt, and other climate hazards make conditions more inhospitable.[159] Emissions-

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[154] Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, at 83 (IPCC, Geneva, Switzerland 2023); *see also* Nat'l Academies of Sciences, Eng'g, & Med., *Effects of Human-Caused Greenhouse Gas Emissions on U.S. Climate, Health, and Welfare*, at 38 (2025), https://doi.org/10.17226/29239 ("As long as global emissions of CO2 stay above zero, concentrations and radiative forcing will continue to increase and global temperature will increase roughly in proportion to cumulative CO2 (i.e., each additional ton emitted adds an increment more to temperature increase) with small contributions from other long-lived gases including N2O and F-gases. As global emissions of GHGs are spread across all nations, a collective effort at reducing emissions is required to limit future warming."

[155] U.S. Global Change Research Program, *Fifth National Climate Assessment* (2023), Overview, at 5.

[156]Intergovernmental Panel on Climate Change, *Summary for Policymakers*, in *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (2022), at SPM-21, SPM-22, SPM-30.

[157]C.W. Avery, et al., U.S. Global Change Research Program, *Fifth National Climate Assessment* 32-6 (2023).

[158] *Id.* at 32-13.

[159] William J. Ripple, et al., *Climate change threats to Earth's wild animals,* 75 BioScience 519 (2025); Shaye G. Wolf,. et al., *Scientists' warning on fossil fuels*, 5 Oxford Open Climate Change kgaf011 (2025).

driven climate change is disrupting species' distributions, timing of breeding and migration, physiology, vital rates, and genetics. [160] It is promoting the spread of diseases and invasive species; increasing mortality and localized extinctions; and deteriorating ecosystem processes.[161] Worldwide an estimated one million animal and plant species are threatened with extinction, with climate change as a primary driver, alongside habitat destruction and exploitation.[162] Climate change-related local extinctions are already widespread.[163]

Every increase in greenhouse gas pollution and resulting climate change stress increases extinction risk. At 2°C compared with 1.5°C of temperature rise, species' extinction risk will increase substantially,[164] leading to a doubling of the number of vertebrate and plant species losing more than half their range, and a tripling for invertebrate species.[165] Studies have projected catastrophic species extinction during this century if greenhouse gas emissions continue unabated: 15 to 37% of the world's plants and animals committed to extinction by 2050

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[160] Camille Parmesan & Gary Yohe, *A globally coherent fingerprint of climate change impacts across natural systems*, 421 Nature 37 (2003); Root, et al., *Fingerprints of global warming on wild animals and plants*, 421 Nature 57 (2003); Camille Parmesan, *Ecological and evolutionary responses to recent climate change*, 37 Annu. Rev. Ecol. Evol. Syst. 637 (2006); I-Ching Chen, et al., *Rapid range shifts of species associated with high levels of climate warming*, 333 Science 1024 (2011); Ilya M. D Maclean,. & Robert J. Wilson, *Recent ecological responses to climate change support predictions of high extinction risk*, 108 PNAS 12337 (2011); Rachel Warren, et al., *Increasing impacts of climate change upon ecosystems with increasing global mean temperature rise*, 106 Climatic Change 141 (2011); Abigail E Cahill, et al., *How does climate change cause extinction?*, 280 Proceedings of the Royal Society B 20121890 (2012); Michela Pacifici et al., *Species' Traits Influenced Their Response to Recent Climate Change*, 7 Nat. Clim. Change 205 (2017); Fiona E.B. Spooner et al., *Rapid Warming Is Associated with Population Decline Among Terrestrial Birds and Mammals Globally*, 24 Glob. Change Biol. 4521 (2018); P.D. McElwee et al., *Chapter 8: Ecosystems, Ecosystem Services, and Biodiversity*, in *Fifth National Climate Assessment* (U.S. Global Change Research Program 2023).

[161] Brett R. Scheffers et al., *The Broad Footprint of Climate Change from Genes to Biomes to People*, 354 Science 719 (2016).

[162]E.S. Brondizio et al. (eds.), *Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (IPBES Secretariat, Bonn, Germany 2019); Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, *Summary for Policymakers of the Thematic Assessment Report on the Underlying Causes of Biodiversity Loss and the Determinants of Transformative Change and Options for Achieving the 2050 Vision for Biodiversity of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (IPBES Secretariat, Bonn, Germany 2024).

[163] John J. Wiens, *Climate-Related Local Extinctions Are Already Widespread Among Plant and Animal Species*, 14 PLoS Biol. e2001104 (2016).

[164] Mark C. Urban, *Climate Change Extinctions*, 386 Science 1123 (2024).

[165] Intergovernmental Panel on Climate Change, *Global Warming of 1.5°C: An IPCC Special Report on the Impacts of Global Warming of 1.5°C Above Pre-Industrial Levels and Related Global Greenhouse Gas Emission Pathways, in the Context of Strengthening the Global Response to the Threat of Climate Change, Sustainable Development, and Efforts to Eradicate Poverty* [V. Masson-Delmotte et al., (eds.)] 37 (2018).

under a mid-level emissions scenario[166]; the potential extinction of 10 to 14% of species by 2100[167]; global extinction of 5% of species with 2°C of warming and 16% of species with business-as-usual warming[168]; the loss of more than half of the present climatic range for 58% of plants and 35% of animals by the 2080s under a mid-level emissions pathway[169]; and the extinction of a third or more of animals and plant species in the next 50 years.[170]

The Fifth National Climate Assessment confirmed that "species changes and biodiversity loss are accelerating," concluding that "[t]he interaction of climate change with other stressors is causing biodiversity loss, changes in species distributions and life cycles, and increasing impacts from invasive species and diseases, all of which have economic and social consequences (*very likely, high confidence*). Future responses of species and populations will depend on the magnitude and timing of changes, coupled with the differential sensitivity of organisms; species that cannot easily relocate or are highly temperature sensitive may face heightened extinction risks (*very likely, high confidence*)."[171]

c. Anthropogenic greenhouse gas emissions and resulting climate change have well-documented adverse impacts on federally protected species.

The harms from greenhouse gas emissions, and resulting climate change, to federally listed species have been extensively documented in the published scientific literature[172] and in federal listing determinations, 5-year reviews, critical habitat designations, and recovery plans under the Endangered Species Act. A 2025 study identified climate change as the leading threat to species protected under the ESA.[173] The study found that 91% of the 1,602 ESA-listed species

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[166] Chris D. Thomas et al., *Extinction Risk from Climate Change*, 427 Nature 145 (2004).

[167] Ilya M. D. Maclean & Robert J. Wilson, *Recent Ecological Responses to Climate Change Support Predictions of High Extinction Risk*, 108 Proc. Nat'l Acad. Sci. U.S.A. 12337 (2011).

[168] Mark C. Urban, *Accelerating Extinction Risk from Climate Change*, 348 Science 571 (2015).

[169] Rachel Warren et al., *Quantifying the Benefit of Early Climate Change Mitigation in Avoiding Biodiversity Loss*, 3 Nat. Clim. Change 678 (2013).

[170] Cristian Román-Palacios & John J. Wiens, *Recent Responses to Climate Change Reveal the Drivers of Species Extinction and Survival*, 117 Proc. Nat'l Acad. Sci. U.S.A. 4211 (2020).

[171] P.D. McElwee et al., *Chapter 8: Ecosystems, Ecosystem Services, and Biodiversity*, in *Fifth National Climate Assessment*, U.S. Global Change Research Program (2023), at 8–16.

[172] A. Povilitis & K. Suckling, *Addressing Climate Change Threats to Endangered Species in U.S. Recovery Plans*, 24 Conserv. Biol. 372 (2010); Aimee Delach et al., *Agency Plans Are Inadequate to Conserve US Endangered Species Under Climate Change*, 9 Nat. Clim. Change 999 (2019); Stephanie Jenouvrier et al., *The Call of the Emperor Penguin: Legal Responses to Species Threatened by Climate Change*, 27 Glob. Change Biol. 5008 (2021); A. Wrobleski et al., *The Impact of Climate Change on Endangered Plants and Lichen*, 2 PLOS Climate e0000225 (2023); Theodore Weber et al., *Agency Management Plans Also Fail to Address Threatened Species Vulnerability to Climate Change in the US*, 284 Biol. Conserv. 110184 (2023).

[173] Talia Niederman et al., *US Imperiled Species and the Five Drivers of Biodiversity Loss*, 75 BioScience 524 (2025).

analyzed, all within the U.S. or U.S. territories and listed as of 2023, are threatened by climate change.

Greenhouse gas emissions harm federally listed species in ways that are not only measurable but also causally understood. GHG-driven climate change impacts such as sea ice loss, ocean heat stress and ocean acidification, sea level rise, the increasing frequency of extreme weather events, decreasing snowpack, and elevational and latitudinal shifts in habitat are several of the ways that greenhouse gas emissions harm federally protected species, all of which must be assessed prior to finalizing the Proposal.

Loss of sea ice and harms to listed sea-ice dependent species. In 2008, the U.S. Fish and Wildlife Service (hereafter "FWS") listed the polar bear (*Ursus maritimus*) as a threatened species due to greenhouse gas emissions-driven climate change and the resulting loss of Arctic sea ice on which the species depends for survival.[174] The loss of sea ice also jeopardizes the polar bear's sea-ice dependent prey species—ringed and bearded seals—which were listed as federally threatened in 2012 due to sea ice loss from climate change.[175]

Alaska and the Arctic have experienced some of the most severe and rapid heating due to greenhouse gas emissions, with temperatures increasing two to four times faster than the global average.[176] Arctic summer sea ice extent and thickness have decreased by 40% during the past several decades,[177] with each metric ton of CO_2 emissions estimated to lead to an average sustained loss of three square meters of summer sea ice area.[178] The Arctic lost 95% of its oldest and thickest sea ice over three decades, and the remaining thinner, younger ice is more vulnerable to melting.[179] Sea ice loss has accelerated since 2000, with Alaska's coasts suffering

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[174]U.S. Fish & Wildlife Serv., *Determination of Threatened Status for the Polar Bear (Ursus maritimus) Throughout Its Range*, Final Rule, 73 Fed. Reg. 28212, 28293 (2008); *See also In re Polar Bear Endangered Species Act Listing*, 709 F.3d 1 (D.C. Cir. 2013) (affirming FWS's decision to federally list the polar bear as threatened due to the effects of global climate change on polar bear habitat).

[175]Nat'l Marine Fisheries Serv., *Threatened Status for the Arctic, Okhotsk, and Baltic Subspecies of the Ringed Seal and Endangered Status for the Ladoga Subspecies of the Ringed Seal*, 77 Fed. Reg. 76706 (Dec. 28, 2012); Nat'l Marine Fisheries Serv., *Threatened Status for the Beringia and Okhotsk Distinct Population Segments of the Erignathus barbatus nauticus Subspecies of the Bearded Seal*, 77 Fed. Reg. 76740 (Dec. 28, 2012).

[176] U.S. Global Change Research Program, *Fifth National Climate Assessment* (2023), at 29-5; M. Rantanen et al., *The Arctic Has Warmed Nearly Four Times Faster Than the Globe Since 1979*, 3 Commun. Earth & Environ. 168 (2022).)

[177] Walter N. Meier et al., *Arctic Sea Ice in Transformation: A Review of Recent Observed Changes and Impacts on Biology and Human Activity*, 51 Rev. Geophys. 185 (2014); U.S. Global Change Research Program, *Fourth National Climate Assessment*, Vol. I (2017), at 29, 57, 303; U.S. Global Change Research Program, *Fourth National Climate Assessment*, Vol. II (2018), at 1192–1193; Intergovernmental Panel on Climate Change, *Climate Change 2021: Summary for Policymakers* (2021), at SPM-6.

[178] Dirk Notz & Julienne Stroeve, *Observed Arctic sea ice loss directly follows anthropogenic CO_2 emission*, 354 Science 747 (2016)

[179] Emily Osborne et al. (eds.), *Arctic Report Card 2018*, NOAA (2018), at 2.

some of the fastest declines.[180] The length of the sea ice season is shortening as ice melts earlier in spring and forms later in autumn.[181] Along Alaska's northern and western coasts, the sea ice season has already shortened by more than 90 days.[182] As summarized by the Fourth National Climate Assessment:

> Since the early 1980s, annual average arctic sea ice has decreased in extent between 3.5% and 4.1% per decade, become thinner by between 4.3 and 7.5 feet, and began melting at least 15 more days each year. September sea ice extent has decreased between 10.7% and 15.9% per decade (*very high confidence*). Arctic-wide ice loss is expected to continue through the 21st century, *very likely* resulting in nearly sea ice-free late summers by the 2040s (*very high confidence*)."[183]

It is precisely this sea ice loss, and the lack of adequate regulatory mechanisms addressing greenhouse gas pollution, that led the FWS to list the polar bear as a threatened species in 2008[184] and to designate sea ice habitat off Alaska as critical habitat in 2010.[185] As a top Arctic predator, the polar bear relies on sea ice for all its essential activities, including hunting for prey, moving long distances, finding mates, and building dens to rear cubs. Federal documents acknowledge that shrinkage and premature breakup of sea ice due to climate change is the primary threat to the species, leaving polar bears with vastly diminished hunting grounds, less time to hunt, and a shortage of sea ice for other essential activities such as finding mates and resting.[186] As summarized in the FWS's 5-year reviews, sea ice loss and a shorter sea ice season makes hunting calorie-rich seals more difficult for polar bears, leading to nutritional stress,

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[180] U.S. Global Change Research Program, *Fourth National Climate Assessment*, Vol. I (2017), at 305; U.S. Global Change Research Program, *Fifth National Climate Assessment* (2023), at 29–6.

[181] Claire L. Parkinson, *Spatially mapped reductions in the length of the Arctic sea ice season*, 41 Geophysical Research Letters 4316 (2014).

[182] U.S. Global Change Research Program, *Fourth National Climate Assessment*, Vol. I (2017), at 307.

[183] *Id.* at 29, 303.

[184] U.S. Fish and Wildlife Serv., *Determination of Threatened Status for the Polar Bear (Ursus maritimus) Throughout Its Range*, Final Rule, 73 Fed. Reg. 28212, 28293 ("On the basis of our thorough evaluation of the best available scientific and commercial information regarding present and future threats to the polar bear posed by the five listing factors under the Act, we have determined that the polar bear is threatened throughout its range by habitat loss (i.e., sea ice recession). We have determined that there are no known regulatory mechanisms in place at the national or international level that directly and effectively address the primary threat to polar bears—the rangewide loss of sea ice habitat.").

[185] U.S. Fish and Wildlife Serv., *Designation of Critical Habitat for the Polar Bear (Ursus maritimus) in the United States*, 75 Fed. Reg. 76086 (Dec. 7, 2010).

[186] U.S. Fish and Wildlife Serv., *Determination of Threatened Status for the Polar Bear (Ursus maritimus) Throughout Its Range*, Final Rule, 73 Fed. Reg. 28212, 28303; U.S. Fish & Wildlife Serv., *Polar Bear (Ursus maritimus) Conservation Management Plan*, Final, Anchorage, Alaska (2016); U.S. Fish & Wildlife Serv., *Polar Bear (Ursus maritimus) 5-Year Review: Summary and Evaluation*, Marine Mammals Management, Anchorage, Alaska (2017); U.S. Fish & Wildlife Serv., *Polar Bear (Ursus maritimus) 5-Year Review: Summary and Evaluation*, Marine Mammals Management, Anchorage, Alaska (2023).

reduced body mass, and declines of some populations.[187] As the sea ice retreats, polar bears have been forced to swim longer distances,[188] which is more energetically costly,[189] and they are spending more time on land where they have reduced access to food.[190] Females are denning more often on land than on ice, increasing the potential for conflicts with humans.[191] Because polar bears have high metabolic rates, increases in movement resulting from loss and fragmentation of sea ice result in higher energy costs that lead to reduced body condition, recruitment and survival.[192] In short, emissions-driven sea ice loss is leading to longer periods of forced fasting for polar bears when they are largely food deprived and must survive on accumulated fat reserves, losing nearly a kilogram of body mass each day, which reduces their body condition, reproductive success, and survival.[193]

In Alaska, the Southern Beaufort Sea population declined by 40 percent during the 2000s, attributed to sea ice loss that limited access to prey over multiple years,[194] and averaged just 565 bears between 2006 to 2015.[195] For the bears in this population, research has linked sea ice loss

[187] U.S. Fish & Wildlife Serv., *Polar Bear (Ursus maritimus) 5-Year Review* (2017), at 16; U.S. Fish & Wildlife Serv., *Polar Bear (Ursus maritimus) 5-Year Review* (2023).

[188] George M. Durner et al., *Consequences of Long-Distance Swimming and Travel over Deep-Water Pack Ice for a Female Polar Bear During a Year of Extreme Sea Ice Retreat*, 34 Polar Biol. 975 (2011); Anthony M. Pagano et al., *Long-Distance Swimming by Polar Bears (Ursus maritimus) of the Southern Beaufort Sea During Years of Extensive Open Water*, 90 Can. J. Zool. 663 (2012); Nicholas W. Pilfold et al., *Migratory Response of Polar Bears to Sea Ice Loss: To Swim or Not to Swim*, 40 Ecography 189 (2017).

[189] Blaine D. Griffen, *Modeling the Metabolic Costs of Swimming in Polar Bears (Ursus maritimus)*, 41 Polar Biol. 491 (2018).

[190] Seth G. Cherry et al., *Fasting Physiology of Polar Bears in Relation to Environmental Change and Breeding Behavior in the Beaufort Sea*, 32 Polar Biol. 383 (2009); John P. Whiteman et al., *Summer Declines in Activity and Body Temperature Offer Polar Bears Limited Energy Savings*, 349 Science 295 (2015).

[191] J.W. Olson et al., *Collar Temperature Sensor Data Reveal Long-Term Patterns in Southern Beaufort Sea Polar Bear Den Distribution on Pack Ice and Land*, 564 Mar. Ecol. Prog. Ser. 211 (2017); U.S. Fish & Wildlife Serv., *Polar Bear (Ursus maritimus) 5-Year Review* (2017), at 20–21.

[192] U.S. Fish & Wildlife Serv., *Polar Bear (Ursus maritimus) 5-Year Review* (2017), at 17; Anthony M. Pagano et al., *High-Energy, High-Fat Lifestyle Challenges an Arctic Apex Predator, the Polar Bear*, 359 Science 568 (2018).

[193] Péter K. Molnár et al., *Fasting Season Length Sets Temporal Limits for Global Polar Bear Persistence*, 10 Nat. Clim. Change 732 (2020).

[194] Jeffrey F. Bromaghin. et al., *Polar bear population dynamics in the Southern Beaufort Sea during a period of sea ice decline*, 25 Ecological Applications 634 (2015).

[195] Jeffery F. Bromaghin et al., *Survival and Abundance of Polar Bears in Alaska's Beaufort Sea, 2001–2016*, 11 Ecol. Evol. 14250 (2021).

to decreases in survival,[196] lower success in rearing cubs,[197] shrinking body size,[198] and increases in fasting and nutritional stress.[199]

Highlighting the importance of reducing greenhouse gas emissions to protect sea-ice dependent species, one study estimated that each metric ton of CO_2 emission results in a sustained loss of 3 ± 0.3 m^2 of September Arctic sea ice area.[200] Similar to other research,[201] the study concluded that limiting warming to 2°C is not sufficient to allow Arctic summer sea ice to survive, but that rapid GHG emissions reductions to achieve a 1.5°C target gives Arctic summer sea ice "a chance of long-term survival at least in some parts of the Arctic Ocean."[202] Based on this analysis, a 9.1 billion metric ton CO2e increase resulting from the Proposal would result in a sustained loss of ~10,541 square miles of summer sea ice habitat for polar bears—an enormous area the size of Massachusetts. A 17.9 billion metric ton CO2e increase resulting from the Proposal would result in a sustained loss of ~20,734 square miles of summer sea ice habitat.[203] Designated critical habitat for the polar bear in Alaska includes 179,508 square miles of sea ice in the Bering, Chukchi, and Southern Beaufort seas.[204] Although sea ice habitat destruction due to the Proposal would occur across the Arctic, some of the fastest losses of Arctic sea ice are happening in the Bering, Chukchi, and Southern Beaufort seas off Alaska. Therefore, much of the sea ice loss projected to occur due to the Proposal is likely to happen in polar bear critical habitat off Alaska. This significant loss of sea-ice habitat due to the Proposal would undoubtedly constitute adverse modification to critical habitat for polar bears.

Furthermore, a 2020 study found that prolonged fasting periods caused by emissions-driven sea ice loss are likely to have already pushed, or will soon push, polar bear populations beyond critical thresholds for survival, meaning that many polar bear populations could be

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[196] Eric V. Regehr et al., *Survival and Breeding of Polar Bears in the Southern Beaufort Sea in Relation to Sea Ice*, 79 J. Anim. Ecol. 117 (2010); Jeffrey F. Bromaghin et al., *Polar Bear Population Dynamics in the Southern Beaufort Sea During a Period of Sea Ice Decline*, 25 Ecol. Appl. 634 (2015).

[197] *Id.*

[198] Karyn D. Rode et al., *Reduced body size and cub recruitment in polar bears associated with sea ice decline*, 20 Ecol. Appl. 768 (2010).

[199] Seth G. Cherry et al., *Fasting physiology of polar bears in relation to environmental change and breeding behavior in the Beaufort Sea*, 32 Polar Biology 383 (2009); John P. Whiteman et al., *Summer declines in activity and body temperature offer polar bears limited energy savings*, 349 Science 295 (2015).

[200] Dirk Notz & Julienne Stroeve, *Observed Arctic sea ice loss directly follows anthropogenic CO_2 emission*, 354 Science 747 (2016).

[201] Carl-Friedrich Schleussner et al., *Science and policy characteristics of the Paris Agreement temperature goal*, 6 Nat. Clim. Change 827, 830 (2016).

[202] Notz *supra* note 202, at 3-4.

[203] See section II (summarizing EDF's analysis of GHG emissions impacts of the Proposal) and separate comments of EDF.

[204] U.S. Fish and Wildlife Serv.ice, *Designation of Critical Habitat for the Polar Bear (Ursus maritimus) in the United States*, 75 Fed. Reg. 76086 (Dec. 7, 2010)

extirpated in just a few decades absent aggressive reductions in greenhouse gas emissions.[205] The survival of polar bear cubs (i.e., recruitment into the next generation), as determined by the mother's declining ability to provide enough milk, is the first demographic threshold crossed as fasting periods increase. Populations that are not successfully recruiting young can only decline towards extinction. The study determined that some polar bear populations—Western Hudson Bay, Southern Hudson Bay, and Davis Strait— have likely already crossed the "impact threshold" for cub survival and are declining towards extinction. The two Alaskan polar bear populations are likely to pass impact thresholds for cub survival starting in 10 to15 years on a mid-level RCP 4.5 emissions trajectory: in ~2035 for the Southern Beaufort Sea population and ~2040 for the Chukchi Sea population. On the current emissions trajectory, the study projects that polar bears will be extirpated throughout the vast majority of their range by or before the end of the century. The study concludes that aggressive emissions reductions are required to prevent polar bear extinction and are critical for allowing substantially more sea ice to persist, increasing the chances that polar bears will survive in Alaska and across their range.[206]

A 2023 study by Amstrup and Bitz confirmed the direct link between anthropogenic CO_2e emissions and declines in polar bear demographic rates.[207] The study quantified the relationship between anthropogenic GHG emissions and polar bear recruitment (i.e., the survival of bear cubs) across populations, calculating the rate at which cub recruitment has declined with cumulative GHG emissions and will continue to decline with further GHG emissions. This analysis allows the estimation of demographic impacts to polar bear populations from specific emissions sources. Based on this analysis, a 9.1 billion metric ton CO2e increase resulting from the Proposal would directly lead to significant and measurable decreases in cub recruitment that would push all polar bear populations closer to extinction: for example, a 1.0% decrease in cub recruitment for the Chukchi Sea population and 0.59% decrease for the Southern Beaufort Sea population. A 17.9 billion metric ton CO2e increase resulting from the Proposal would lead to even larger decreases in cub recruitment: a 1.97% decrease for the Chukchi Sea population and 1.16% decrease for the Southern Beaufort Sea population. As described above, the two Alaskan polar bear populations are nearing impact thresholds for cub survival, and this Proposal would appreciably push these populations closer to these thresholds. As underscored by this study: "[t]he fundamental dependence of polar bears on sea ice and the documented relationship between declining sea ice and cumulative anthropogenic carbon dioxide (CO_2) emissions assures that polar bear distribution and abundance ultimately can only decline as cumulative emissions increase." In short, a robust body of scientific evidence shows the Proposal would appreciably reduce the likelihood of survival and recovery of the polar bear, leading to jeopardy.

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[205] Péter K. Molnár et al., *Fasting season length sets temporal limits for global polar bear persistence*, 10Nat. Clim. Change 732 (2020).

[206] Steven C. Amstrup et al., *Greenhouse gas mitigation can reduce sea ice loss and increase polar bear persistence,* 468 Nature 955 (2010); Todd C. Atwood et al., *Forecasting the Relative Influence of Environmental and Anthropogenic Stressors on Polar Bears*, 7 Ecosphere e01370 (2016); Eric V. Regehr et al., *Conservation Status of Polar Bears (Ursus maritimus) in Relation to Projected Sea-Ice Declines*, 12 Biol. Lett. 20160556 (2016).

[207] S.C. Amstrup & C.M. Bitz, *Unlock the Endangered Species Act to address GHG emissions*, 381 Science 6661 (2023)

Synthesizing the scientific research on sea ice loss and polar bear persistence, the FWS's 2016 Final Polar Bear Conservation Management Plan clearly states that the polar bear cannot be recovered without significant reductions in the greenhouse gas emissions driving Arctic warming and sea ice loss: "It cannot be overstated that the single most important action for the recovery of polar bears is to significantly reduce the present levels of global greenhouse gas (GHG) emissions, which are the primary cause of warming in the Arctic."[208] The 2023 5-year review similarly concludes that polar bear recovery depends on decisive action to reduce GHG emissions:

> Based on the best scientific information currently available and our assessment of representation, redundancy, and resiliency, the single most important act for polar bear conservation is decisive action to address Arctic warming, which is driven primarily by increasing atmospheric concentrations of GHG. Short of action that effectively addresses the primary cause of sea ice decline, it is unlikely that polar bears will be recovered.[209]

Sea ice-dependent ringed and bearded seals will also be harmed by the Proposal. Ringed seals are completely dependent on sea ice and snow cover for pupping, nursing, molting and resting. Ringed seals remain in contact with the ice most of the year and give birth and nurse pups on the sea ice in snow-covered lairs in late winter through early spring. Snow caves provide protection for pups from predators and extreme cold. Loss of sea ice and snow cover on the ice due to climate change are the main threat to this species.[210] Bearded seals depend on the availability of sea ice over shallow waters for use as a haul-out platform for giving birth, nursing and rearing pups, molting, and resting. Ongoing declines in the extent and timing of ice cover due to climate change are the main threat to this species. Current and expected future increases in ocean temperature and acidification, and changes in community structure, due to climate change also threaten the bearded seal through reductions in prey.[211]

The enormous increase in GHG emissions resulting from the Proposal will not only "affect" polar bears, ringed seals, and bearded seals, but it will adversely modify their critical habitat and cause jeopardy for polar bears by appreciably diminishing the likelihood of survival and recovery of the species. The EPA must consult on how the Proposal would affect federally protected sea-ice-dependent species like the polar bear.

Ocean heating and ocean acidification and harms to listed marine species. Two other

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[208] U.S. Fish and Wildlife Serv., *Polar Bear (Ursus maritimus) Conservation Management Plan*, Final, Anchorage, Alaska (2016), at 11.

[209] U.S. Fish and Wildlife Serv., *Polar Bear* (*Ursus maritimus*) *5-Year Review* (2023), at 5.

[210] B.P. Kelly et al., *Status Review of the Ringed Seal (Phoca hispida)*, NOAA Tech. Memo. NMFS-AFSC-212 (2010); NMFS, *Designation of Critical Habitat for the Arctic Subspecies of the Ringed Seal, Final Rule*, 87 Fed. Reg. 19232 (2022); NMFS, *Ringed Seal Five-Year Status Review: Summary and Evaluation* (2024).

[211] M.F. Cameron et al., *Status Review of the Bearded Seal (Erignathus barbatus)*, NOAA Tech. Memo. NMFS-AFSC-211 (2010); NMFS, *Designation of Critical Habitat for the Beringia Distinct Population Segment of the Bearded Seal, Final Rule*, 87 Fed. Reg. 19180 (2022).

incontrovertible environmental impacts caused by greenhouse gas emissions are ocean heating and ocean acidification which are harming many marine species and causing a global collapse of the ocean's coral reef ecosystems. The National Marine Fisheries Service ("NMFS") has listed 24 species of corals under the Endangered Species Act based primarily on threats from ocean heating and ocean acidification, direct consequences of greenhouse gas emissions. In 2006, NMFS listed elkhorn and staghorn corals (*Acropora palmata* and *A. cervicornis*) as threatened, citing ocean warming as a key threat to these species.[212] In 2014 NMFS reaffirmed that ocean warming due to climate change and ocean acidification are primary threats to these species.[213] In 2014 NMFS listed 20 additional corals as threatened, including five Caribbean coral species and fifteen Indo-Pacific coral species,[214] determining that the most important threats contributing to extinction risk for these species are ocean warming, disease as related to climate change, and ocean acidification.[215]

The world's oceans have absorbed more than 90 percent of the excess heat caused by greenhouse gas warming, resulting in average sea surface heating of 1.3°F (0.7°C) per century since 1900.[216] Marine heat waves—periods of extreme hot surface temperature—have become longer-lasting and more frequent due to climate change, with the number of heat wave days doubling between 1982 and 2016 and projected to increase 23 times under 2°C temperature rise.[217] A 2018 study attributed 87 percent of marine heat waves to human-induced warming.[218] Rapid ocean heating has widespread impacts on species and ecosystems, contributing to rising sea levels, declining ocean oxygen levels, increasing rainfall intensity, and ice loss from glaciers, ice sheets and polar sea ice, and is the primary driver of mass coral bleaching events that are devastating coral reef ecosystems.[219]

The global oceans have absorbed a third of the CO_2 emitted to the atmosphere by human activities, which has significantly increased the acidity of the surface ocean by more than 30%, at

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[212] Nat'l Marine Fisheries Serv., *Endangered and Threatened Species: Final Listing Determinations for Elkhorn Coral and Staghorn Coral*, 71 Fed. Reg. 26852, 26859 (May 9, 2006).

[213] Nat'l Marine Fisheries Serv., *Endangered and Threatened Wildlife and Plants: Final Listing Determinations on Proposal to List 66 Reef-Building Coral Species and to Reclassify Elkhorn and Staghorn Corals*, 79 Fed. Reg. 53852, 53965, 53973 (2014).

[214] The five Caribbean coral species are *Dendrogyra cylindrus, Orbicella annularis, Orbicella faveolata, Orbicella franksi,* and *Mycetophyllia ferox*; and the fifteen Indo-Pacific coral species are *Acropora globiceps, Acropora jacquelineae, Acropora lokani, Acropora pharaonis, Acropora retusa, Acropora rudis, Acropora speciosa, Acropora tenella, Anacropora spinosa, Euphyllia paradivisa, Isopora crateriformis, Montipora australiensis, Pavona diffluens, Porites napopora,* and *Seriatopora aculeata.*

[215] NMFS *supra* note 214, at 52885 - 53886.

[216] U.S. Global Change Research Program, *Fourth National Climate Assessment*, Vol. I (2017), at 364, 367.

[217] Thomas L. Frolicher et al., *Marine heatwaves under global warming*, 560 Nature 360 (2018).

[218] *Id.*

[219] Liging Cheng et al., *How fast are the oceans warming?*, 363 Science 128 (2019).

a rate likely faster than anything experienced in the past 300 million years.[220] U.S. waters off the West Coast and Alaska are experiencing particularly fast rates of ocean acidification that exceed the global average.[221] Ocean acidity could increase by 150 percent by the end of the century if CO_2 emissions continue unabated.[222] Ocean acidification negatively affects a wide range of marine species by hindering the ability of calcifying marine creatures like corals, oysters, and crabs to build protective shells and skeletons and by disrupting metabolism and critical biological functions.[223] The adverse effects of ocean acidification are already being observed in wild populations, including reduced coral calcification rates in reefs worldwide,[224] severe shell damage to pteropods (marine snails at the base of the food web) along the U.S. west coast,[225] and mass die-offs of larval Pacific oysters in the Pacific Northwest.[226] The 2018 IPCC *Special Report on Global Warming of 1.5°C* concluded that "[t]he level of ocean acidification due to increasing CO_2 concentrations associated with global warming of 1.5°C is projected to amplify the adverse effects of warming, and even further at 2°C, impacting the growth, development, calcification, survival, and thus abundance of a broad range of species, e.g., from algae to fish (*high confidence*)."[227]

Rising ocean temperatures and ocean acidification driven by greenhouse gas pollution threaten the continued survival of federally listed coral species due to the increasing frequency of

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[220] Bärbel Hönisch et al., *The Geological Record of Ocean Acidification*, 335 Science 1058 (2012); U.S. Global Change Research Program, *Fourth National Climate Assessment*, Vol. I (2017), at 372, 374.

[221] Richard A. Feely et al., *Evidence for Upwelling of Corrosive "Acidified" Water onto the Continental Shelf*, 320 Science 1490 (2008); Julia A. Ekstrom et al., *Vulnerability and Adaptation of U.S. Shellfisheries to Ocean Acidification*, 5 Nat. Climate Change 207 (2015); Jeremy T. Mathis et al., *Ocean Acidification in the Surface Waters of the Pacific-Arctic Boundary Regions*, 28 Oceanography 122 (2015); Jeremy T. Mathis et al., *Ocean Acidification Risk Assessment for Alaska's Fishery Sector*, 136 Prog. Oceanography 71 (2015); Francis Chan et al., *The West Coast Ocean Acidification and Hypoxia Science Panel: Major Findings, Recommendations, and Actions*, California Ocean Science Trust (2016); Emily B. Osborne et al., *Decadal Variability in Twentieth-Century Ocean Acidification in the California Current Ecosystem*, 13 Nat. Geoscience 43 (2019).

[222] James C. Orr et al., *Anthropogenic Ocean Acidification over the Twenty-First Century and Its Impact on Calcifying Organisms*, 437 Nature 681 (2005); Richard A. Feely et al., *Ocean Acidification: Present Conditions and Future Changes in a High CO2 World*, 22 Oceanography 36 (2009).

[223] Victoria J. Fabry et al., *Impacts of Ocean Acidification on Marine Fauna and Ecosystem Processes*, 65 ICES J. Mar. Sci. 414 (2008); Kristy J. Kroeker et al., *Impacts of Ocean Acidification on Marine Organisms: Quantifying Sensitivities and Interactions with Warming*, 19 Glob. Change Biol. 1884 (2013).

[224] Rebecca Albright et al., *Reversal of Ocean Acidification Enhances Net Coral Reef Calcification*, 531 Nature 362 (2016).

[225] Nina Bednaršek et al., *Limacina helicina Shell Dissolution as an Indicator of Declining Habitat Suitability Owing to Ocean Acidification in the California Current Ecosystem*, 281 Proc. R. Soc. B 20140123 (2014).

[226] Alan Barton et al., *The Pacific Oyster, Crassostrea gigas, Shows Negative Correlation to Naturally Elevated Carbon Dioxide Levels: Implications for Near-Term Ocean Acidification Effects*, 57 Limnol. Oceanogr. 698 (2012).

[227] Intergovernmental Panel on Climate Change (IPCC), *Global Warming of 1.5°C* (2018) at SPM-10–11.

mass bleaching events and coral dissolution. Scientific research has definitively linked anthropogenic ocean heating to the catastrophic, mass coral bleaching events that have been documented since 1980 and are increasing in frequency and intensity as atmospheric CO_2 increases.[228] Severe bleaching events have increased five-fold in the past several decades and now occur every six years on average, which is too frequent to allow full recovery of coral reefs.[229] Numerous studies show that the synergistic impacts of climate change and ocean acidification—including coral disease outbreaks driven by heat stress[230] and intensifying hurricanes[231]—are accelerating coral reef declines.[232] Studies warn that the adaptive capacity of corals is unlikely to keep pace with the impacts of climate change on the majority of reefs without limiting warming well below 2°C.[233]

In the Caribbean, federally listed elkhorn and staghorn corals—once abundant—precipitously declined by 92 to 97 percent, largely due to outbreaks of white-band disease that

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[228] Ove Hoegh-Guldberg et al., *Coral Reefs Under Rapid Climate Change and Ocean Acidification*, 318 Science 1737 (2007); Simon D. Donner et al., *Coping With Commitment: Projected Thermal Stress on Coral Reefs Under Different Future Scenarios*, 4 PLoS ONE e5712 (2009); C. Mark Eakin et al., *Caribbean Corals in Crisis: Record Thermal Stress, Bleaching, and Mortality in 2005*, 5 PLoS ONE e13969 (2010); National Marine Fisheries Service, *Recovery Plan for Elkhorn Coral (Acropora palmata) and Staghorn Coral (A. cervicornis)*, Southeast Regional Office (Mar. 3, 2015) at 51.

[229] Terry P. Hughes et al., *Spatial and Temporal Patterns of Mass Bleaching of Corals in the Anthropocene*, 359 Science 80 (2018); D. Souter et al., *Status of Coral Reefs of the World: 2020 Report*, Global Coral Reef Monitoring Network (GCRMN) & International Coral Reef Initiative (ICRI) (2021).

[230] John F. Bruno et al., *Thermal Stress and Coral Cover as Drivers of Coral Disease Outbreaks*, 5 PLoS Biology e124 (2007); John F. Bruno, *The Coral Disease Triangle*, 5 Nature Climate Change 302 (2015); C.J. Randall & R. van Woesik, *Contemporary White-Band Disease in Caribbean Corals Driven by Climate Change*, 5 Nature Climate Change 375 (2015); William F. Precht et al., *Unprecedented Disease-Related Coral Mortality in Southeastern Florida*, 6 Scientific Reports 31374 (2016); C.J. Randall & R. van Woesik, *Some Coral Diseases Track Climate Oscillations in the Caribbean*, 7 Scientific Reports 5719 (2017); Charles J. Walton et al., *Impacts of a Regional, Multi-Year, Multi-Species Coral Disease Outbreak in Southeast Florida*, 5 Frontiers in Marine Science 323 (2018).

[231] Toby A. Gardner et al., *Hurricanes and Caribbean coral reefs: impacts, recovery patterns, and role in long-term decline*, 86 Ecology 174 (2005); Edwin A. Hernández-Delgado et al., *Stronger hurricanes and climate change in the Caribbean Sea: Threats to the sustainability of endangered coral species*, 16 Sustainability 1506 (2024).

[232] Scott F. Heron et al., *Impacts of Climate Change on World Heritage Coral Reefs: A First Global Scientific Assessment*, UNESCO World Heritage Centre, Paris, France (2017); Terry P. Hughes et al., *Global warming and recurrent mass bleaching of corals*, 543 Nature 373 (2017); Bradley D. Eyre et al., *Coral reefs will transition to net dissolving before end of century*, 359 Science 908 (2018); Terry P. Hughes et al., *Spatial and temporal patterns of mass bleaching of corals in the Anthropocene*, 359 Science 80 (2018); William P. Leggat et al., *Rapid coral decay is associated with marine heatwave mortality events on reefs*, 29 Cell Biol. 1 (2019); S.G. Dove et al., *Ocean warming and acidification uncouple calcification from calcifier biomass which accelerates coral reef decline*, 1 Earth & Environ. 55 (2020); Christopher E. Cornwall et al., *Global declines in coral reef calcium carbonate production under ocean acidification and warming*, 118 Proc. Nat'l Acad. Sci. e2015265118 (2021).

[233] Christopher E. Cornwall. et al., *Coral adaptive capacity insufficient to halt global transition of coral reefs into net erosion under climate change*, 29 Glob. Change Biol. 3010 (2023).

were driven by heat stress from rising ocean temperatures.[234] For elkhorn and staghorn corals, ocean temperature rise increases their susceptibility to disease, fragmentation, and mortality, while ocean acidification decreases their fertilization, settlement success, growth and calcification.[235] For endangered pillar corals (*Dendrogyra cylindrus*) which have suffered catastrophic declines in Florida, black band disease first emerged following bleaching events in 2014 and 2015 spurred by abnormally high water temperatures.[236] Scientists forecast that an increasing frequency of warm water events, coupled with associated disease outbreaks, will lead to the local extinction of *D. cylindrus* in the Florida Keys in modern times.[237] Three listed star corals in the Caribbean—boulder star coral (*Orbicella franksi*), mountainous star coral (*Orbicella faveolata*), and lobed star coral (*Orbicella annularis*)—have experienced long-term declines in reproduction following bleaching events caused by high water temperatures, which scientists warned "may be catastrophic for the long-term maintenance of the population."[238]

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[234] National Marine Fisheries Service, *Endangered and Threatened Species: Final Listing Determinations for Elkhorn Coral and Staghorn Coral*, 71 Fed. Reg. 26852 (May 9, 2006) at 26,872; Christopher J. Randall & R. van Woesik, *Contemporary white-band disease in Caribbean corals driven by climate change*, 5 Nat. Clim. Change 375 (2015); R. van Woesik & C.J. Randall, *Coral disease hotspots in the Caribbean*, 8 Ecosphere e01814 (2017).

[235] Rebecca Albright et al., *Ocean acidification compromises recruitment success of the threatened Caribbean coral Acropora palmata*, 107 PNAS 20400 (2010); L. Roth et al., *Tracking Acropora fragmentation and population structure through thermal-stress events*, 263 Ecol. Modell. 223 (2013); I.C. Enochs et al., *Effects of light and elevated pCO2 on the growth and photochemical efficiency of Acropora cervicornis*, 33 Coral Reefs 477 (2014); E.F. Camp et al., *Acclimatization to high-variance habitats does not enhance physiological tolerance of two key Caribbean corals to future temperature and pH*, 283 Proc. R. Soc. B 20160442 (2016); D.E. Williams et al., *Thermal stress exposure, bleaching response, and mortality in the threatened coral Acropora palmata*, 124 Mar. Pollut. Bull. 189 (2017); Chris Langdon et al., *Two threatened Caribbean coral species have contrasting responses to combined temperature and acidification stress*, 63 Limnol. Oceanogr. 2450 (2018); Erinn M. Muller et al., *Bleaching causes loss of disease resistance within the threatened coral species Acropora cervicornis*, 7 eLife e35066 (2018); Elizabeth A. Goergen et al., *Identifying causes of temporal changes in Acropora cervicornis populations and potential for recovery*, 6 Front. Mar. Sci. 36 (2019).

[236] Cynthia L. Lewis et al., *Temporal dynamics of black band disease affecting pillar coral (Dendrogyra cylindrus) following two consecutive hyperthermal events on the Florida Reef Tract*, 36 Coral Reefs 427 (2017); Andrea N. Chan et al., *Fallen pillars: the past, present, and future population dynamics of a rare, specialist coral-algal symbiosis*, 6 Front. Mar. Sci. 218 (2019); Karen L. Neely et al., *Rapid population decline of the pillar coral Dendrogyra cylindrus along the Florida reef tract*, 8 Front. Mar. Sci. 656515 (2021) (noting reproductive extinction of D. cylindrus due to absence of juveniles and large geographic distances between genotypes); Karen L. Neely et al., *Saving the last unicorns: genetic rescue of Florida's pillar corals*, 8 Front. Mar. Sci. 657429 (2021) (noting that D. cylindrus is <6 percent of its known population, with the dramatic decline accelerated by stony coral tissue loss disease).

[237] Andrea N. Chan et al., *Fallen pillars: the past, present, and future population dynamics of a rare, specialist coral-algal symbiosis*, 6 Front. Mar. Sci. 218 (2019).

[238] Don R. Levitan et al., *Long-term reduced spawning in Orbicella coral species due to temperature stress*, 515 Mar. Ecol. Prog. Ser. 1 (2014).

Scientific research and federal documents conclude that conservation and recovery actions for listed corals must rapidly reduce greenhouse gas emissions and atmospheric CO_2 levels for corals to survive and recover.[239] NMFS' 2015 *Final Recovery Plan for Elkhorn and Staghorn Corals* includes a recovery criterion with specific targets for ocean surface temperatures and ocean acidification levels[240] that are much lower than today's levels and are consistent with a return to an atmospheric CO_2 concentration of less than 350 ppm.[241] The Recovery Plan also recognizes that a primary threat to listed corals is the inadequacy of existing regulations to control greenhouse gas emissions. It specifies a recovery criterion calling for the adoption of "adequate domestic and international regulations and agreements" to abate threats from increasing atmospheric CO_2 concentrations,[242] including a recovery action to "develop and implement U.S. and international measures to reduce atmospheric CO_2 concentrations to a level appropriate for coral recovery."[243]

The enormous increase in GHG emissions resulting from the Proposal will adversely modify critical habitat for listed coral species by increasing sea surface temperature, the frequency and severity of bleaching events, heat-driven disease outbreaks, and ocean acidification, and will appreciably decrease the likelihood of the species' survival and recovery. The EPA must consult on how the Proposal would affect greenhouse gas-sensitive ocean species like listed corals.

Sea level rise and harms to coastal and low-lying island species. Sea level has risen along U.S. coastlines by 11 inches (28 cm) on average over the past 100 years (1920-2020), with

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[239] John E.N. Veron et al., *The coral reef crisis: the critical importance of <350 ppm CO2*, 58 Marine Pollution Bull. 1428 (2009); Kai Frieler et al., *Limiting global warming to 2ºC is unlikely to save most coral reefs*, 3 Nat. Climate Change 165 (2012); Ruben van Hooidonk et al., *Opposite latitudinal gradients in projected ocean acidification and bleaching impacts on coral reefs*, 20 Glob. Change Biol. 103 (2014); National Marine Fisheries Service, *Recovery Plan for Elkhorn Coral (Acropora palmata) and Staghorn Coral (A. cervicornis)*, Southeast Regional Office, 50-511 *(see also* recovery criteria at 86 and 88).

[240] *Id. See* Recovery Criterion 5: "Sea surface temperatures across the geographic range have been reduced to Degree Heating Weeks less than 4; and Mean monthly sea surface temperatures remain below 30°C during spawning periods; and Open ocean aragonite saturation has been restored to a state of greater than 4.0, a level considered optimal for reef growth."

[241] As stated by the Recovery Plan: "Current projections of increases in ocean temperature, coupled with the numerous other stressors acting on these depleted species, will inhibit recovery. Thus, reducing atmospheric CO_2 levels is likely needed to support recovery of elkhorn and staghorn corals. Model simulations by Donner et al. (2009) suggest that atmospheric CO_2 concentrations may need to be stabilized below 370 ppm to avoid degradation of coral reef ecosystems. Veron et al. (2009), based on the recent history of frequent mass bleaching events and correlated climate conditions, advocated the importance of atmospheric CO_2 concentrations of less than 350 ppm for coral reef health, as mass bleaching events, often associated with El Niño, began when atmospheric CO_2 concentrations were approximately 340 ppm. Veron et al. (2009) also discussed the 1997/98 mass bleaching event, when atmospheric CO_2 concentrations were 350 ppm, as the beginning of a decline in coral reef health from which there has been no significant long-term recovery."

[242] National Marine Fisheries Service, *Recovery Plan for Elkhorn Coral (Acropora palmata) and Staghorn Coral (A. cervicornis)*, Southeast Regional Office, Recovery Criterion 8 (Mar. 3, 2015).

[243] *Id.* at Recovery Action 9.

half this rise occurring during the past 30 years.[244] Sea level rise is accelerating in pace, tripling over the past 30 years (1993-2023) compared with 1901-1990.[245] According to the Fifth National Climate Assessment, sea level in the U.S. is projected to rise on average by 0.89 feet (0.27 meters) by 2050 and 3.28 feet (1.0 meters) by 2100 under an intermediate emissions scenario.[246] Sea level rise will be much more extreme without rapid reductions in greenhouse gas emissions, with sea level rise of 6.6 feet (2.0 meters) possible by 2100 under a high emissions scenario.[247]

Scientific research and federal ESA analyses have concluded that many federally listed species living on islands and coastal areas are endangered by sea level rise. For example, ESA listing rules for Florida coastal species have determined that sea level rise resulting from climate change, and the inadequacy of existing regulatory mechanisms to address climate change, are primary threats endangering the Florida bonneted bat (*Eumops floridanus*),[248] Cape Sable thoroughwort (*Chromolaena frusrata*),[249] Florida semaphore cactus (*Consolea corallicola*),[250] aboriginal prickly-apple (*Harrisa aboriginum*),[251] and Florida bristle fern (*Trichomanes punctatum ssp. floridanum*).[252] A 2025 analysis of Florida coastal vertebrate species highlights that 9 federally listed mammal species and 3 reptile species proposed for federal listing have their entire distributions on islands and that "sea level rise represents a significant and immediate threat to the[ir] persistence": Lower Keys marsh rabbit (*Sylvilagus palustris hefneri*), Key deer (*Odocoileus virginianus clavium*), Key Largo woodrat (*Neotoma floridana smalli*), silver rice rat (*Oryzomys palustris natator*), Lower Keys cotton rat (*Sigmodon hispidus exsputus*), Key Largo cotton mouse (*Peromyscus gossypinus allapaticola*), Anastasia Island beach mouse (*Peromyscus polionotus phasma*), Perdido Key beach mouse (*Peromyscus polionotus trissyllepsis*), Southeastern beach mouse (*Peromyscus polionotus niveiventris*), Key ring-necked snake (*Diadophis punctatus acricus*), Cedar Key mole skink (*Plestiodon egregius insularis*), and Florida Keys mole skink (*Plestiodon egregius egregious*). [253]

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[244] U.S. Global Change Research Program, *Fifth National Climate Assessment* 9-5 (2023).

[245] *Id.*

[246] *Id.* at xxviii, Table 4.

[247] *Id.*

[248] U.S. Fish and Wildlife Serv., *Endangered and Threatened Wildlife and Plants; Endangered Species Status for the Florida Bonneted Bat*, 78 Fed. Reg. 61004 (Oct. 2, 2013).

[249] U.S. Fish and Wildlife Serv., *Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for Chromolaena frustrata (Cape Sable Thoroughwort), Consolea corallicola (Florida Semaphore Cactus), and Harrisia aboriginum (Aboriginal Prickly-Apple)*, 78 Fed. Reg. 63796, 63816 (Oct. 24, 2013).

[250] *Id.* at 63817.

[251] *Id.*

[252] U.S. Fish and Wildlife Serv., *Endangered and Threatened Wildlife and Plants; Endangered Species Status for Trichomanes punctatum ssp. floridanum (Florida Bristle Fern)*, 80 Fed. Reg. 60440 (Oct. 6, 2015).

[253] Erin L. Koen et al., *Sea level rise threatens Florida's insular vertebrate biodiversity*, 34 Biodiversity and Conservation 513 (2025)

Research has documented the serious extinction threats that sea level rise poses to listed species on the low-lying islands of the Florida Keys. Florida Keys species are at high risk from even small increases in sea level rise, given that that the majority of land is less than 1.5 meters (5 ft) above sea level and significant sea level rise is already occurring, for example, 0.21 meters (0.68 feet) of sea level rise at Vaca Key over 51 years (1971-2022).[254] The Key Largo tree cacti (*Pilosocereus millsapaughii*) is considered to the first vascular plant in the U.S. to go extinct in the wild because of sea level rise, which caused salt water intrusion and flooding from increased storm surge.[255] The endangered Key tree-cactus (*Pilosocereus robinii*) is declining as the soil becomes too salty due to rising sea levels and intensifying storm surge.[256] The endangered semaphore cactus (*Consolea corallicolais*), endemic to just two sites, is threatened by sea level rise which is causing salt water intrusion and elevated soil moisture that appears to increase death by a fungal pathogen leading to crown rot.[257] The endangered Lower Keys marsh rabbit (*Sylvilagus palustris hefneri*) lost 48% of its habitat due to sea level rise between 1959-2006,[258] and the endangered silver rice rat lost 33% of its potential habitat due to sea level rise between 2004 and 2021.[259] The endangered Florida Key deer (*Odocoileus virginianus claviumis*) would lose almost all its habitat with one meter of sea level rise, which could occur by 2100 if greenhouse gas emissions continue unchecked.[260]

Research and federal documents identify sea level rise as a primary threat to sea turtles by eroding nesting beaches and reducing nesting success.[261] For example, most (87 percent)

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[254] Jennifer Possley et al., *First U.S. Vascular Plant Extirpation Linked to Sea Level Rise? Pilosocereus millspaughii (Cactaceae) in the Florida Keys, U.S.A.*, 18 J. Bot. Res. Inst. Tex. 211 (2024).

[255] *Id.*

[256] J. Goodman et al., *Differential Response to Soil Salinity in Endangered Key Tree Cactus: Implications for Survival in a Changing Climate*, 7 PLOS ONE e32528 (2012).

[257] Peter Stiling et al., *Prospects for the Long-Term Persistence of a Severely Endangered Plant, Consolea corallicola (Cactaceae)*, 7 Conservation Science and Practice e70031 (2025).

[258] Jason A. Schmidt et al., *Impacts of a half century of sea-level rise and development on an endangered mammal*, 18 Glob. Change Biol. 3536 (2012).

[259] Paul J. Taillie et al., *Sea level rise adaptation pushes an insular endemic rodent closer to extinction*, 32 Biodivers. & Conserv. 3939 (2023).

[260] U.S. Fish and Wildlife Serv., *Key Deer (Odocoileus viginianus clavinum), 5-Year Review: Summary and Evaluation* (2010); U.S. Fish and Wildlife Serv., *Species Status Assessment for the Key Deer (Odocoileus virginianus clavium)*, Atlanta, GA (2019); Erin L. Koen et al., *Sea level rise threatens Florida's insular vertebrate biodiversity*, 34 Biodivers. & Conserv. 513 (2025).

[261] M. J. Witt et al., *Predicting the Impacts of Climate Change on a Globally Distributed Species: The Case of the Loggerhead Turtle*, 213 J. Exp. Biol. 901 (2010); M.M.P.B. Fuentes et al., *Vulnerability of Sea Turtle Nesting Grounds to Climate Change*, 10 Glob. Change Biol. 140 (2010); D.A. Pike et al., *Nest Inundation from Sea-Level Rise Threatens Sea Turtle Population Viability*, 2 R. Soc. Open Sci. 150127 (2015); Marta P. Lyons et al., *Quantifying the Impacts of Future Sea Level Rise on Nesting Sea Turtles in the Southeastern United States*, 30 Ecol. Appl. e02100 (2020); Marga L. Rivas et al., *Uncertain Future for Global Sea Turtle Populations in Face of Sea Level Rise*, 13 Sci. Rep. 5277 (2023).

loggerhead sea turtle (*Caretta caretta*) nesting occurs on the east coast of Florida,[262] where 43 percent of the turtle's nesting beaches are projected to disappear with just 1.5 feet of sea level rise.[263] The listing rules for the green sea turtle[264] and loggerhead sea turtle[265] conclude that sea level rise is likely to have negative effects on these species through beach loss and reduced nesting success.

The enormous increase in GHG emissions resulting from the Proposal will adversely modify critical habitat for listed island and coastal species by increasing sea level rise, flooding from increased storm surge, and saltwater intrusion, and appreciably decrease the likelihood of survival and recovery for many listed species, as detailed above. The proposed repeal triggers the EPA's legal duty under the ESA to consult on how GHG emissions-driven sea level rise will adversely affect these listed species.

Disease spread. Emissions-driven temperature rise is increasing the spread of diseases by promoting range expansion and population growth of disease-spreading vector species, increasing host susceptibility through stress, and enhancing pathogen transmission.[266] On the Hawaiian islands, rising temperatures caused by greenhouse gas pollution are causing population declines and increasing extinction risk for federally endangered bird species like the ʻi'iwi (*Drepanis coccinea*), ʻakikiki (*Oreomystis bairdi*), and ʻakekeʻe (*Loxops caeruleirostris*) by facilitating the spread of non-native mosquitoes carrying deadly avian malaria.[267] Endangered birds in Hawaii are now largely restricted to high-elevation habitat where it was formerly too cold for disease-carrying mosquitoes to survive, but rising temperatures are allowing mosquitoes to move further upslope, infecting and killing more birds, leaving fewer and fewer high-elevation

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[262] Nat'l Oceanic & Atmospheric Admin., *Proposed Listing of Nine Distinct Population Segments of Loggerhead Sea Turtles as Endangered or Threatened*, 75 Fed. Reg. 12598 (2010)

[263] Joshua S. Reece et al., *Sea level rise, land use, and climate change influence the distribution of loggerhead turtle nests at the largest USA rookery (Melbourne Beach, Florida)*, 493 Mar. Ecol. Prog. Ser. 259 (2013).

[264] U.S. Fish & Wildlife Serv. & Nat'l Marine Fisheries Serv., *Endangered and Threatened Wildlife and Plants; Final Rule To List Eleven Distinct Population Segments of the Green Sea Turtle (Chelonia mydas) as Endangered or Threatened and Revision of Current Listings Under the Endangered Species Act*, 81 Fed. Reg. 20058, 20078 (Apr. 6, 2016).

[265] U.S. Fish & Wildlife Serv. & Nat'l Marine Fisheries Serv., *Endangered and Threatened Species; Determination of Nine Distinct Population Segments of Loggerhead Sea Turtles as Endangered or Threatened*, 76 Fed. Reg. 58868, 58910 (Sept. 22, 2011).

[266] McElwee, P.D. et al., Chapter 8: Ecosystems, ecosystem services, and biodiversity, Fifth National Climate Assessment, U.S. Global Change Research Program (2023) at 8-21 to 8-23

[267] Liao, Wei et al., *Will a warmer and wetter future cause extinction of native Hawaiian forest birds?*, 21 Global Change Biology 4342 (2015); Paxton, Eben H. et al., 2016, *Collapsing avian community on a Hawaiian island*, 2 Science Advances e1600029 (2016); Liao, Wei et al., Mitigating future avian malaria threats to Hawaiian forest birds from climate change, 12 PLoS ONE e0168880 (2017); Neddermeyer, John H. et al., *Nowhere to fly: Avian malaria is ubiquitous from ocean to summit on a Hawaiian island*, 279 Biological Conservation 109943 (2023

refuges, and escalating extinction risk for Hawaii's listed birds. The EPA must consult on how rising temperatures driven by greenhouse gases affect these listed species.

d. Nitrogen oxide (NOx) pollution has well-documented adverse impacts on federally protected species.

Fossil fuel combustion from vehicles and stationary sources produces nitrogen oxide (NOx) air pollutants including nitrous oxide (N_2O), as well as nitric acid (HNO_3), nitrate (NO_3^-), and ammonia (NH_3), which have contributed to the significant increase in nitrogen deposition in many parts of the United States,[268] resulting in widespread impacts to species and ecosystems.[269] The proposed repeal would increase NOx emissions from vehicle exhaust and petroleum refineries, thereby increasing nitrogen deposition in the areas where vehicles and polluting stationary sources are operating, with resulting harms to listed species and their critical habitat.

Scientific research has clearly established the linkages between NOx emissions and harms to federally listed species. A review of the effects of nitrogen pollution on ESA-listed species, based on analysis of FWS and NMFS documents, found that this threat is "substantial" and "geographically widespread."[270] This review, Hernandez et al. (2016), identified evidence for harm from nitrogen pollution for at least 78 federally listed taxa.[271] This includes 50 invertebrates such as mollusks and arthropods, 18 vertebrates such as fish, amphibians, and reptiles, and 8 plants.[272] Harms from nitrogen pollution fell into four main categories: (1) direct toxicity or lethal effects of nitrogen, (2) eutrophication lowering dissolved oxygen levels in water or causing algal blooms that alter habitat by covering up substrate, (3) nitrogen pollution increasing non-native plant species that directly harm a plant species through competition, and (4) nitrogen pollution increasing non-native plant species that indirectly harm animal species by excluding their food sources.[273]

In its 2020 Final Integrated Science Assessment on the ecological effects of NOx, the EPA identified 14 ways in which NOx pollution has been shown to have a "causal relationship" to ecological effects, based on a review of the science.[274] Similar to the Hernandez et al. (2016), causal effects of NOx pollution include direct phytotoxic effects, acidification, eutrophication, and changes to physiology, growth, species richness, community composition, and biodiversity.

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[268] David Fowler et al., *The global nitrogen cycle in the twenty-first century*, 368 Phil. Trans. R. Soc. B 20130164 (2013).

[269] Mark E. Fenn, *Ecological Effects of Nitrogen Deposition in the Western United States*, 53 BioScience 404 (2003).; Daniel L. Hernandez et al., *Nitrogen Pollution Is Linked to US Listed Species Declines*, 66 BioScience 213 (2016).

[270] *Id*. at 220.

[271] *Id*. at 215, 220.

[272] *Id.* at 216-217 at Tables 1, 2, 3.

[273] *Id*. at 215-217.

[274] U.S. Envtl. Prot. Agency, *Integrated Science Assessment for Oxides of Nitrogen, Oxides of Sulfur, and Particulate Matter—Ecological Criteria (Final)*, Center for Public Health and Envtl. Assessment, Office of Research and Development, EPA/600/R-20/278 (2020), at Table ES-1.

Nitrogen deposition from vehicle pollution is a well-documented harm to listed species. For the bay checkerspot butterfly (*Euphydryas editha bayensis*), which is restricted to patches of low-nutrient serpentinite soil in the San Francisco Bay area,[275] nitrogen deposition from vehicles has allowed exotic grasses to replace native forbs, including replacing the bay checkerspot's larval host plant and adult nectar sources. NOx pollution has contributed to butterfly population declines and local extirpations.[276] The bay checkerspot population at Edgewood Natural Preserve adjacent to 8-lane Highway 280 was extirpated when non-native plants over-ran larval host plants up to ~400m from the highway, leading to the loss of 80% of the available habitat.[277] The FWS in its 5-year review for the bay checkerspot found that the level of impact from nitrogen deposition increased with proximity to a major interstate highway:

> Weiss (1999, p. 1476) determined that while the initial cause of the butterfly declines were the result of rapid invasion by nonnative annual grasses that crowded out the butterfly's larval host plants, the evidence indicated that dry nitrogen deposition from smog was responsible for creating soil conditions that allowed the observed grass invasion. Weiss (1999, p. 1482) estimated nitrogen deposition rates south of San Jose to be 10-15 kg of nitrogen per hectare per year (kg-N/ha/yr). Weiss (2002, p. 31) further demonstrated these effects by analyzing the pattern of non-native grass invasion resulting from nitrogen deposition at Edgewood Park, and observed that the cover of non-native Italian ryegrass (*Lolium multiflorum*) decreased with distance from Interstate Highway 280 (I-280), while *Plantago erecta* cover increased with distance. *Plantago erecta* cover was also higher upwind of I-280 than downwind.[278]

In its 2022 5-year review, the FWS determined that the most significant threat to the species is still nitrogen deposition causing habitat modification by facilitating the invasion of non-native plant species, in combination with climate change and the climate-change-fueled threats of multi-year droughts and large-scale wildfires.[279] The critical load for nitrogen for serpentine grasslands in California is 6 kilograms per hectare per year, which represents the maximum rate of atmospheric nitrogen deposition beyond which significant harmful effects occur to sensitive elements of the environment, such as to native species.[280] Increased NOx

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[275] U.S. Fish & Wildlife Serv., *Bay Checkerspot Butterfly (Euphydryas editha bayensis) 5-Year Review: Summary and Evaluation*, Sacramento Fish and Wildlife Office (2009); Sdravka Tzankova et al., *Can the ESA Address the Threats of Atmospheric Nitrogen Deposition? Insights from the Case of the Bay Checkerspot Butterfly*, 35 Harv. Envtl. L. Rev. (2011); Daniel L. Hernandez et al., *Nitrogen Pollution Is Linked to US Listed Species Declines*, 66 BioScience 213 (2016).

[276] Stuart B. Weiss, *Cars, cows and checkerspot butterflies: nitrogen deposition and management of nutrient-poor grasslands for a threatened species*, 13 Conservation Biology 1476 (1999).

[277] M.E. Fenn et al., *Nitrogen critical loads and management alternatives for N-impacted ecosystems in California*, 91 J. Envtl. Mgmt. 2404 (2010).

[278] U.S. Fish and Wildlife Serv., *Bay Checkerspot butterfly (Euphydryas editha bayensis) 5-Year Review: Summary and Evaluation, Sacramento Fish and Wildlife Office* (2009), at 13.

[279] U.S. Fish and Wildlife Serv., *Bay checkerspot butterfly, 5-Year Review* (2022), at 9, 12, 13, 24.

[280] M.E. Fen, et al., *Nitrogen critical loads and management alternatives for N-impacted ecosystems*

emissions from vehicle exhaust resulting from the Proposal will contribute to elevating nitrogen deposition in the bay checkerspot butterfly's habitat, potentially increasing or maintaining levels above the nitrogen critical load, thereby adversely modifying the bay checkerspot's critical habitat and jeopardizing the species.

Nitrogen deposition from vehicle pollution is also a major threat to the Presidio clarkia (*Clarkia franciscana*), a flowering plant native to California serpentine grasslands, since nitrogen deposition gives a competitive advantage to non-native plants.[281] In its 5 year reviews, the FWS identified nitrogen deposition from vehicle pollution as a principal threat, explaining that "elevated inputs of atmospheric nitrogen deposition from air pollution have further accelerated the encroachment of native shrubs and nonnative shrubs and nonnative grasses and forbs…into *Clarkia franciscana* habitat."[282] The FWS has identified other potential harms to the Presidio clarkia from nitrogen deposition such as decreased diversity of mycorrhizal communities and predisposing plants to environmental stresses such as elevated concentrations of ozone, drought, frost, or insect attacks.[283]

Similarly, the FWS has determined that nitrogen deposition threatens the federally protected Quino checkerspot butterfly (*Euphydryas editha quino*) and the desert tortoise (*Gopherus agassizii*) by facilitating the spread of non-native species that displace the butterfly's host plants[284] and the tortoise's forage plants, reducing the nutritional quality of available food for the desert tortoise.[285]

NOx and SOx pollution also harms federally listed species by contributing to the acidification of terrestrial and aquatic ecosystems such as soils, rivers, and lakes.[286] The acidification of surface water in streams and lakes by nitrogen deposition can create inhospitable conditions for listed species and cause the decline or loss of acid-sensitive species—with more

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in California, 91J. Envtl. Mgmt. 2404 (2010).

[281] Daniel L. Hernandez et al.,, *Nitrogen pollution is linked to US listed species declines*, 66 BioScience 213, at Table 3 (2016).

[282] U.S. Fish & Wildlife Serv, *Clarkia franciscana (Presidio clarkia) 5-Year Review* (2010), at 43; U.S. Fish & Wildlife Serv, *Clarkia franciscana (Presidio clarkia) 5-Year Review* (2024), at 10.

[283] U.S. Fish & Wildlife Serv, *Clarkia franciscana (Presidio clarkia) 5-Year Review* (2010), at 50.

[284] U.S. Fish & Wildlife Serv., *Quino Checkerspot Butterfly (Euphydryas editha quino) 5-Year Review: Summary and Evaluation*, Carlsbad Fish and Wildlife Office (2009), at 13, 15, 18.

[285] Kenneth A. Nagy et al., *Nutritional Quality of Native and Introduced Food Plants of Wild Desert Tortoises*, 32 J. Herpetology 260 (1998); Edith B. Allen et al., *Impacts of Atmospheric Nitrogen Deposition on Vegetation and Soils at Joshua Tree National Park*, in R.H. Webb et al. (eds.), *The Mojave Desert: Ecosystem Processes and Sustainability*, 78–100 (Univ. of Nev. Press, Las Vegas 2009); U.S. Fish & Wildlife Serv., *Mojave Population of the Desert Tortoise (Gopherus agassizii) 5-Year Review: Summary and Evaluation*, Tortoise Recovery Office (Sept. 2010), at 24.

[286] U.S. Envtl. Prot. Agency, *Integrated Science Assessment for Oxides of Nitrogen, Oxides of Sulfur, and Particulate Matter—Ecological Criteria (Final)*, Center for Public Health and Envtl. Assessment, Office of Research and Development, EPA/600/R-20/278 (2020), at ES-2

species lost at higher levels of acidification.[287] Acidified aquatic habitats have been found to have lower numbers of species of fishes, macroinvertebrates, and plankton.[288] Stream acidification has been found to harm the Atlantic salmon (*Salmo salar*), which has endangered populations in the Gulf of Maine, by increasing mortality of young salmon and limiting the species' distribution and abundance in the northeastern U.S.[289] For the endangered dwarf wedgemussel (*Alasmidonta heterodon*), the FWS's recovery plan states that stream acidification can mobilize toxic metals, is harmful to mussels, and is thought to have contributed to the species' decline in the Fort River in Massachusetts.[290] The threatened longsolid mussel (*Fusconaia subrotunda*) is sensitive to nitrogen deposition, particularly ammonia deposition, and is threatened by pollution from the Warren, PA, refinery on the Allegheny River.[291]

A review on the effects of nitrogen deposition in the western U.S. highlights the need for policy changes at the national level for reducing air pollution to protect endangered species from nitrogen deposition: "[L]ocal land management strategies to protect these endangered species may not succeed unless they are accompanied by policy changes at the regional or national level that reduce air pollution."[292]

EPA's proposal to eliminate GHG emission rules for mobile sources will result in vast amounts of additional NOx emissions not just for the short term but also for the decades during which these higher-polluting vehicles will continue to be on the road, harming nearby species with NOx from their exhaust. We estimate that 249 federally listed species (including subspecies and DPSs) have critical habitat within 500 meters of a national highway freight corridor as shown in the figure below and Appendix A.[293] and may be affected by the increased NOx emissions from vehicle tailpipes resulting from the Proposal.

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[287] Charles T. Driscoll et al., *Acidic deposition in the Northeastern United States: Sources and inputs, ecosystem effects, and management strategies*, 51 BioScience 180 (2001); U.S. Envtl. Prot. Agency, *Integrated Science Assessment for Oxides of Nitrogen, Oxides of Sulfur, and Particulate Matter—Ecological Criteria (Final)*, Center for Public Health and Envtl. Assessment, Office of Research and Development, EPA/600/R-20/278 (2020), at IS-73.

[288] *Id*.

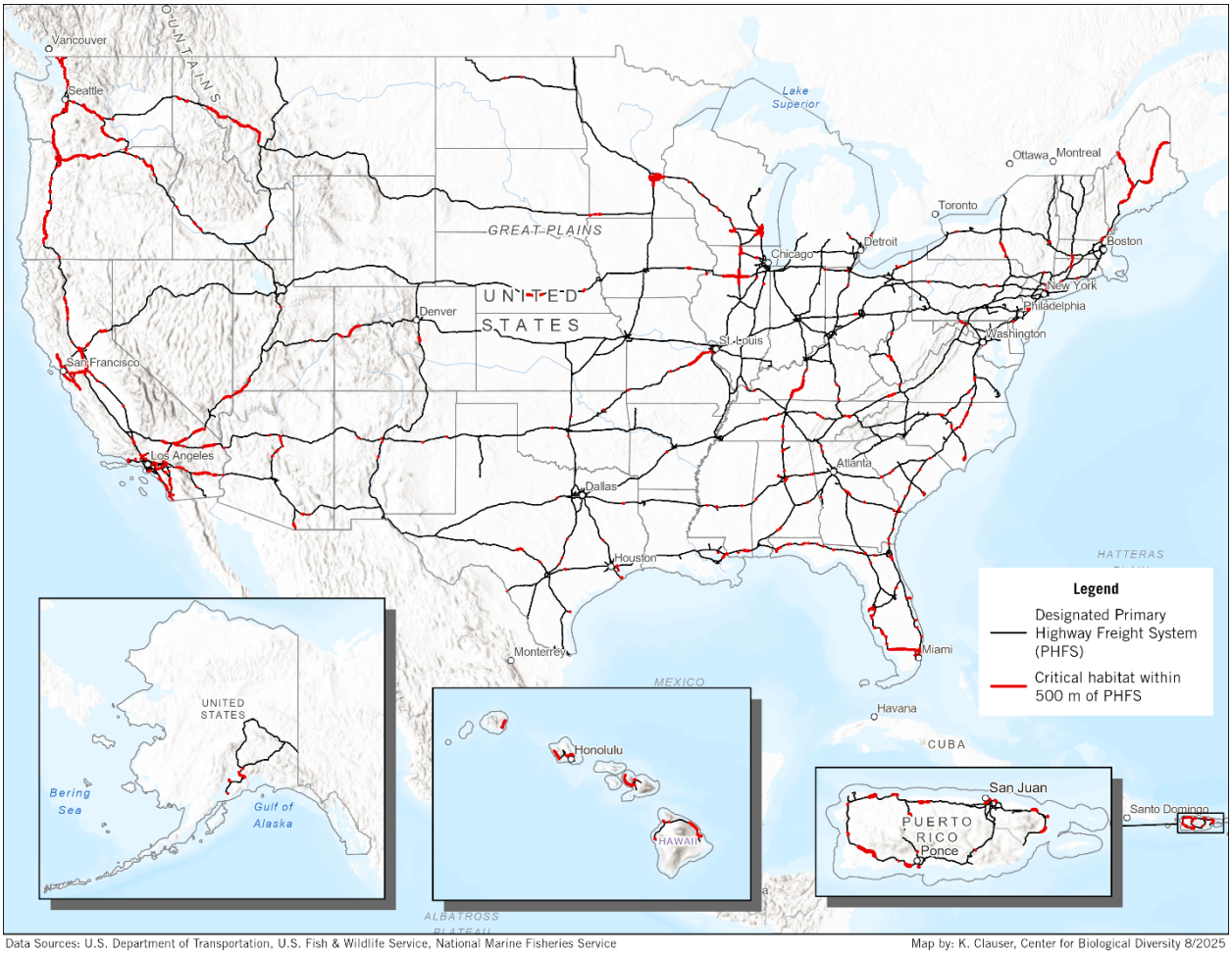
[289] *Id*. at 8-16 to 8-18.

[290] U.S. Fish & Wildlife Serv., *Dwarf Wedgemussel Recovery Plan* 14 (1993).

[291] U.S. Fish & Wildlife Serv., *Species Status Assessment Report for the Longsolid (Fusconaia subrotunda)*, Atlanta, Ga. (Mar. 11, 2022), at 29, 134, 165.

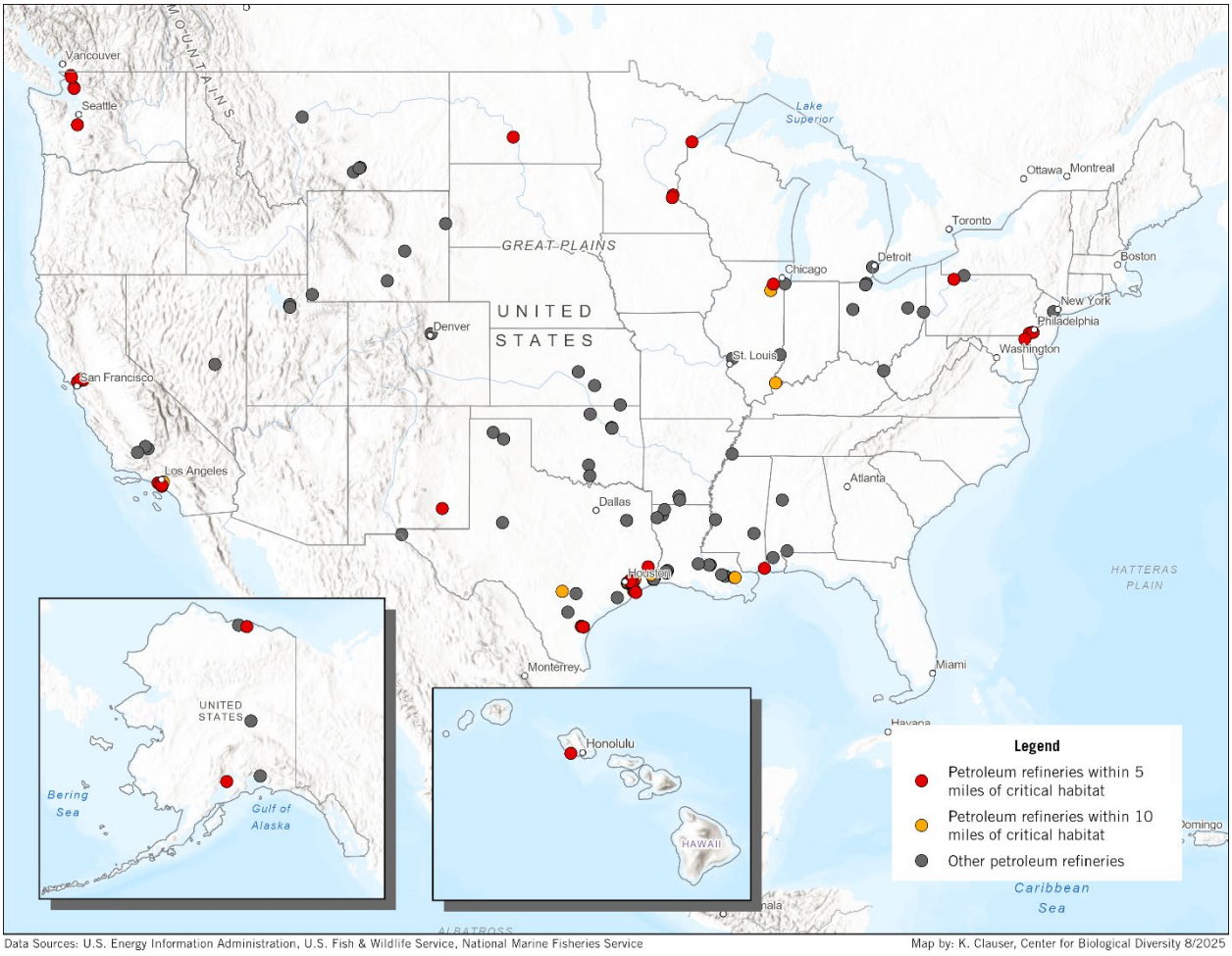
[292] Mark E. Fenn, *Ecological Effects of Nitrogen Deposition in the Western United States*, 53 BioScience 404, 416 (2003).

[293] U.S. Dep't of Transp., Fed. Highway Admin., *National Highway Freight Network (NHFN) Visualization Tool* (2025), available at https://ops.fhwa.dot.gov/freight/fpcb/tools_nhfn.aspx; Nat'l Marine Fisheries Serv., *Critical Habitat Data* (2025), available at https://noaa.maps.arcgis.com/home/item.html?id=f66c1e33f91d480db7d1b1c1336223c3; U.S. Fish & Wildlife Serv., *Critical Habitat Data* (2025), available at https://ecos.fws.gov/ecp/report/critical-habitat.



The Proposal will also lead to increased NOx emissions from petroleum refineries. We estimate that 52 federally listed species (including subspecies and DPSs) have critical habitat within 5 miles of at least one petroleum refinery, including 19 species with critical habitat within 5 miles of multiple refineries, as shown in the figure below and Appendix A.[294] Further, 133 federally listed species have critical habitat within 10 miles of at least one petroleum refinery, including 28 species with critical habitat within 10 miles of multiple refineries, as shown in the figure below and Appendix A. These species may be affected by the increased NOx emissions coming from refineries due to the Proposal. The proposed repeal thus triggers EPA's legal duty under the ESA to consult on how these additional pollutants will affect these listed species.

[294] U.S. Energy Information Admin., *Petroleum Refinery Data* (2025), available at https://atlas.eia.gov/datasets/6547eda91ef84cc386e23397cf834524_22/about.



e. Sulfur dioxide pollution (SO2) has well-documented adverse impacts on federally protected species.

Fossil fuel combustion from vehicles and stationary sources produces SO_2, as well as precursors such as sulfur oxides ("SO_x"), which have well-documented impacts on species and ecosystems. The proposed repeal would increase SO_2 emissions from vehicle exhaust and petroleum refineries, with resulting harms to listed species and their critical habitat.

In its 2020 Final Integrated Science Assessment on the ecological effects of SO_2 and SO_x, the EPA identified eight ways in which sulfur pollution has been shown to have a "causal relationship" to ecological effects, based on a review of the science.[295] As reviewed by EPA, the

[295] U.S. Envtl. Prot. Agency, *Integrated Science Assessment for Oxides of Nitrogen, Oxides of Sulfur, and Particulate Matter—Ecological Criteria (Final)*, Center for Public Health and Envtl. Assessment, Office of Research and Development, EPA/600/R-20/278 (2020), at Table ES-1.

negative ecological effects of SO_2 and SO_x pollution[296] include (a) aquatic acidification and the loss of acid-sensitive species, where more species are lost with greater acidification;[297] (b) changes in terrestrial biota due to acidifying sulfur deposition, such as decreased growth and increased susceptibility to disease and injury in sensitive tree species;[298] (c) increased mercury methylation in aquatic environments;[299] and (d) injury to vegetation, including decreased photosynthesis, decreased growth, and visible foliar injury.[300]

In terms of harms to federally protected species, the EPA acknowledged that acidifying sulfur deposition in aquatic ecosystems can cause the loss of acid-sensitive species such as salmonids many of which are endangered, and that disruption of food web dynamics can cause changes to the diet, breeding distribution and reproduction of bird species.[301] The EPA further stated that current rates of acidifying SO_x deposition are still well above pre-acidification conditions in areas such as the Adirondacks and Shenandoah, and that sulfur and nitrogen deposition loadings of many Adirondack lakes and streams are at levels that can harm aquatic biota.[302] The EPA also acknowledged that there is a "causal relationship between sulfur deposition *at current levels* and increased Hg methylation in aquatic environments,"[303] which is problematic because mercury is highly neurotoxic and, once methylated, can be taken up by zooplankton and macroinvertebrates, and bioaccumulate up the food web.[304]

The FWS has identified numerous federally endangered and threatened species that are negatively affected by atmospheric pollution from SO_2 and SO_x. Federally protected plant species identified by the FWS as threatened by or susceptible to SO_2 and SO_x pollution and acidification include the harperella (*Ptilimnium nodosum*),[305] Zuni fleabane (*Erigeron rhizomaxs*),[306] Mancos milkvetch (*Astragalus humillimus*),[307] Blue Ridge goldenrod (*Solidago*

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[296] U.S. Envtl. Prot. Agency, *Integrated Review Plan for the Secondary National Ambient Air Quality Standards for Ecological Effects of Oxides of Nitrogen, Oxides of Sulfur and Particulate Matter*, EPA-452/R-17-002 (Jan. 2017), at 2–4, 2–5.

[297] *Id.* at 3-13.

[298] *Id.* at 2-5, 2-6.

[299] *Id.* at 3-14, 3-15.

[300] *Id.* at 2-3, 3-9.

[301] *Id.* at 2-5.

[302] *Id.* at 2-5.

[303] *Id.* at 3-14.

[304] *Id.* at 3-14, 3-15.

[305] U.S. Fish & Wildlife Serv., *Harperella (Ptilimnium nodosum) Recovery Plan* 27 (1990).

[306] U.S. Fish & Wildlife Serv., *Recovery Plan for Zuni Fleabane (Erigeron rhizomaxs Cronquist)* 12 (1988).

[307] U.S. Fish & Wildlife Serv., *Mancos Milkvetch (Astragalus humillimus) Recovery Plan* 13 (1989).

spithamaea),[308] Heller's blazing star (*Liatris helleri*),[309] rock gnome lichen (*Gymnodema lineare*),[310] Roan Mountain bluet (*Hedyotis purpurea var. montana*),[311] and McDonald's rockcress (*Arabis mcdonaldiana Eastwood*).[312] For example, Heller's blazing star is a rare plant endemic to a limited area in the Blue Ridge Mountains of North Carolina, with only a few populations currently known to exist. The recovery plan for this species names acid precipitation as a "pervasive" threat.[313] The FWS recovery plan for the rock gnome lichen, which is endemic to the Southern Appalachians, flags that "there is a high likelihood that current and previous air pollution levels, especially from sulfates, may be contributing to the decline of this species."[314]

The FWS has also identified numerous listed animal species as being threatened by or susceptible to SO_2 and SO_x pollution and acidification, including the Shenandoah salamander (*Plethodon shenandoah*),[315] Cheat Mountain salamander (*Plethodon neftiigi*),[316] Chiricahua leopard frog (*Rana chiricahuensis*),[317] whooping crane (*Grus americana*),[318] Roanoke logperch (*Percina rex*),[319] dwarf wedgemussel (*Alasmidonta heterodon*),[320] Mobile River Basin

[308]U.S. Fish & Wildlife Serv., *Blue Ridge Goldenrod (Solidago spithamaea Curtis) Recovery Plan*, at 7, 20 (1987).

[309] U.S. Fish & Wildlife Serv., *Heller's Blazing Star (Liatris helleri) Recovery Plan*, at iii, 7 (2000).

[310] U.S. Fish & Wildlife Serv., *Recovery Plan for Rock Gnome Lichen (Gymnodema lineare)*, at 4, 9 (1997).

[311] U.S. Fish & Wildlife Serv., *Recovery Plan for Roan Mountain Bluet (Hedyotis purpurea var. montana)* 20 (1996).

[312] U.S. Fish & Wildlife Serv., *McDonald's Rock-Cress Recovery Plan (Arabis mcdonaldiana Eastwood)* 23 (1984).3

[313] U.S. Fish & Wildlife Serv., *Heller's Blazing Star (Liatris helleri) Recovery Plan* 7 (2000).

[314] U.S. Fish & Wildlife Serv., *Recovery Plan for Rock Gnome Lichen (Gymnodema lineare)* 4 (1997).

[315] U.S. Fish & Wildlife Serv., *Shenandoah Salamander (Plethodon shenandoah) Recovery Plan*, at 1, 8–10 (1994).

[316] U.S. Fish & Wildlife Serv., *Cheat Mountain Salamander (Plethodon nettingi) Recovery Plan* 12 (1991).

[317] U.S. Fish & Wildlife Serv., *Chiricahua Leopard Frog (Rana chiricahuensis) Final Recovery Plan*, at 23–25, 35, 40 (2007).

[318] U.S. Fish & Wildlife Serv., *International Recovery Plan: Whooping Crane (Grus americana): Third Revision*, at C-1 (2007).

[319] U.S. Fish & Wildlife Serv., *Roanoke Logperch (Percina rex) Recovery Plan* 17 (1992).

[320] U.S. Fish & Wildlife Serv., *Dwarf Wedge Mussel (Alasmidonta heterodon) Recovery Plan* 14 (1993).

mussels,[321] Cumberland River freshwater mussels,[322] and seven species of Southeast mussels.[323] For example, the recovery plan for the Chiricahua leopard frog states that acid rain has been found to adversely affect Chiricahua Leopard Frog populations,[324] likely through reduced hatching of eggs and reduced growth rates.[325]

The Proposal would directly contribute to higher emissions of SO_2 and SO_x and thus triggers EPA's duty to consult on how these emissions may affect listed species.

f. Oil production causes well-documented harms to federally protected species.

Oil production itself causes a wide array of harms to species and ecosystems: destroying and fragmenting wildlife habitat, causing air, noise, and light pollution, contaminating surface and ground water and reducing water supplies, and facilitating the spread of ecologically disruptive invasive species,[326] with similar harms in the marine environment.[327] Oil development infrastructure creates the significant risk of oil spills and brine spills, which can kill wildlife and cause long-term impacts over large areas.[328] The harms from oil production have led to mortality, changes in behavior, and population declines for many species, disruptions to community composition, and loss of ecosystem function.[329] Oil production is recognized as a main threat to

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[321]U.S. Fish & Wildlife Serv., *Recovery Plan for Mobile River Basin Aquatic Ecosystem*, at 12, 13 (2000).; U.S. Fish & Wildlife Serv., *Recovery Plan for Six Mobile River Basin Snails (Cylindrical Lioplax, Flat Pebblesnail, Plicate Rocksnail, Painted Rocksnail, Round Rocksnail, and Lacy Elimia)*, at 16 (2005).

[322] U.S. Fish & Wildlife Serv., *Recovery Plan for Cumberland Elktoe (Alasmidonta atropurpurea), Oyster Mussel (Epioblasma capsaeformis), Cumberlandian Combshell (Epioblasma brevidens), Purple Bean (Villosa perpurpurea), and Rough Rabbitsfoot (Quadrula cylindrica strigillata)*, at iii (2005).

[323] U.S. Fish & Wildlife Serv., *Recovery Plan for Fat Threeridge (Amblema neislerii), Shinyrayed Pocketbook (Lampsilis subangulata), Gulf Moccasinshell (Medionidus penicillatus), Ochlockonee Moccasinshell (Medionidus simpsonianus), Oval Pigtoe (Pleurobema pyriforme), Chipola Slabshell (Elliptio chipolaensis), and Purple Bankclimber (Elliptoideus sloatianus)* 56 (2003).

[324] U.S. Fish & Wildlife Serv., *Chiricahua Leopard Frog (Rana chiricahuensis) Final Recovery Plan* 40 (2007).

[325] *Id.* at 44

[326]Nathalie Butt et al., *Biodiversity Risks from Fossil Fuel Extraction*, 342 Science 425 (2013).;Sara Souther et al., *Biotic Impacts of Energy Development from Shale: Research Priorities and Knowledge Gaps*, 12 Frontiers Ecol. & Environ. 330 (2014).; Harfoot, Michael B. et al., *Present and future biodiversity risks from fossil fuel exploitation*, 11 Conserv. Lett. 12448 (2018)

[327] Venegas-Li, Rubén et al., *Global assessment of marine biodiversity potentially threatened by offshore hydrocarbon activities*, 25 Glob. Change Biol. 2009 (2019).

[328] Barron, Mace G. et al., *Long-term ecological impacts from oil spills: comparison of Exxon Valdez, Hebei Spirit, and Deepwater Horizon*, 54 Envtl. Sci. & Tech. 6456 (2020).

[329]Margaret C Brittingham, . et al., *Ecological Risks of Shale Oil and Gas Development to Wildlife, Aquatic Resources and Their Habitats*, 48 Envtl. Sci. & Tech. 11034 (2014);Brady W. Allred, et al., *Ecosystem Services Lost to Oil and Gas in North America*, 348 Science 401 (2015)

numerous federally listed species, for example, the polar bear,[330] dunes sagebrush lizard,[331] lesser prairie chicken,[332] and Rice's whale.[333] The Proposal would result in more oil production and triggers EPA's duty to consult on how this additional production may affect listed species.

iv. The Proposal will result in an irreversible commitment of resources.

Enactment of the Proposal would be an irreversible or irretrievable commitment of resources within the meaning of ESA Section 7(d) because cars and trucks built without the protections of current law, expected to be on the road for decades,[334] will emit more GHGs and criteria pollutants into the atmosphere than they would under the status quo, and those pollutants will remain in the atmosphere causing the harms described in this comment letter for as long as thousands of years EPA explains:

> As greenhouse gas emissions from human activities increase, they build up in the atmosphere and warm the climate, leading to many other changes around the world—in the atmosphere, on land, and in the oceans. The indicators in other chapters of this report illustrate many of these changes, which have both positive and negative effects on people, society, and the environment—including plants and animals. Because many of the major greenhouse gases stay in the atmosphere for tens to hundreds of years after being released, their warming effects on the climate persist over a long time and can therefore affect both present and future generations.[335]
>
> When greenhouse gases are emitted into the atmosphere, many remain there for long time periods ranging from a decade to many millennia. Over time, these gases are removed from the atmosphere by chemical reactions or by emissions sinks, such as the oceans and vegetation, which absorb greenhouse gases from the atmosphere. As a result of human

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[330] R. Wilson & G.M. Durner, *Seismic Survey Design and Effects on Maternal Polar Bear Dens*, 84 J. Wildlife Mgmt. 201, 201–212 (2019);); R. Wilson et al., *Potential Impacts of an Autumn Oil Spill on Polar Bears Summering on Land in Northern Alaska*, 292 Biol. Conserv. 110558 (2024).

[331] U.S. Fish & Wildlife Serv., *Endangered Status for the Dunes Sagebrush Lizard, Final Rule*, 89 Fed. Reg. 43748 (July 24, 2024).

[332] U.S. Fish & Wildlife Serv., *Species Status Assessment Report for the Lesser Prairie-Chicken* (Tympanuchus pallidicinctus), Version 2.3 (2022), https://www.fws.gov/sites/default/files/documents/LPC_SSA_Report_v2.3_March2022%20%282%29.pdf.

[333] Patricia E. Rosel et al., *Status Review of Bryde's Whales (Balaenoptera edeni) in the Gulf of Mexico under the Endangered Species Act*, NOAA Tech. Memo. NMFS-SEFSC-692 (2016), https://repository.library.noaa.gov/view/noaa/14180; NMFS, *Endangered Status of the Gulf of Mexico Bryde's Whale, Final Rule*, 84 Fed. Reg. 15446 (Apr. 16, 2019).

[334] For example, in recent GHG rules, EPA has modeled impacts through 2055 to "approximate when most of the regulated fleet will consist of vehicles subject to the relevant standards due to fleet turnover." 2024 LMDV Rule RTC 306; *see also* EPA Draft RIA 20-21 (modeling impacts through 2055).

[335] EPA, *Climate Change Indicators: Greenhouse Gases*, https://www.epa.gov/climate-indicators/greenhouse-gases (last visited Sept. 11, 2025).

> activities, however, these gases are entering the atmosphere more quickly than they are being removed from it, and thus their concentrations are increasing.[336]

Maintaining the status quo is an important rationale for Section 7(d). As EPA Region VI has explained:

> Section 7(d) of the ESA requires that, after initiation of consultation under Section 7(a)(2), a federal agency "shall not make any irreversible or irretrievable commitment of resources with respect to the agency action which has the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures which would not violate subsection (a)(2) of this section." In other words, any action taken prior to completion of consultation must not interfere with the ability of the agency to implement reasonable and prudent measures determined to be necessary to avoid jeopardy to a protected species or adverse effects to its critical habitat. Section 7(d) of the ESA is a preventative measure designed to ensure that the status quo is preserved during the consultations process and clarifies the requirements of Section 7(a). *Conner v Burford*, 848 F.2d. 1441 (9th Cir 1988).[337]

Here, the status quo is the protection from harm that the endangerment finding and the EPA truck and auto GHG rules provide. Eliminating those protections will lead irreversible adverse changes to air pollution that will harm endangered species, as described in this comment letter.

V. Rescission of the Endangerment Finding is Itself Unlawful and an Insufficient Basis for Rule Repeal.

The undersigned commenters incorporate by reference their parallel comments on EPA's proposed repeal of its 2009 greenhouse gas Endangerment Finding. *See* EF Comments. As those comments outline, EPA's proposed repeal of its endangerment finding rests on specious arguments that seek to reinterpret the Clean Air Act in an attempt to avoid binding case law that already provides the "best" interpretation of the statute. *Id.*; *see also*, *Loper Bright Enters. v. Raimondo*, 603 U.S. 369, 400 (2024) ("In the business of statutory interpretation, if it is not the best, it is not permissible.") Thus, instead of seeking to effectuate the Clean Air Act's purpose of pollution prevention, EPA seeks to distort the plain meaning of section 202 in order to avoid regulating greenhouse gas emissions from motor vehicles. As commenters note in their EF Repeal comments, EPA does this in the following ways:

First, EPA seeks to reinterpret section 202 of the Clean Air Act by arguing that the statute "does not authorize the EPA to prescribe standards for GHG emissions based on global climate change concerns." 90 Fed. Reg. 36299. But as commenters note, this assertion directly contradicts the holdings of *Massachusetts v. EPA* and *Loper Bright v. Raimondo*. *See* EF

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[336] EPA, *Climate Change Indicators: Atmospheric Concentrations of Greenhouse Gases*, https://www.epa.gov/climate-indicators/climate-change-indicators-atmospheric-concentrations-greenhouse-gases (last visited Sept. 11, 2025).

[337] EPA, *Memo to File: ESA Section 7(d) Determination*, 2 (Aug. 29, 2017), https://www.epa.gov/sites/default/files/2017-09/documents/memo_to_file_-_esa_section_7d_determination.pdf (last visited Sept. 11, 2025).

Comments II.A.. The very first question the Supreme Court answered on the merits in *Massachussetts v. EPA* was "whether § 202(a)(1) of the Clean Air Act authorizes EPA to regulate greenhouse gas emissions from new motor vehicles in the event that it forms a 'judgment' that such emissions contribute to climate change." *Massachusetts v. E.P.A.*, 549 U.S. 497, 528 (2007). The Court had "little trouble concluding that it does." *Id.* The Court's ruling in *Massachusetts* is dispositive on the question of EPA's authority to regulate greenhouse gases.

Second, EPA's attempts to narrow the scope of section 202(a) to only addressing "local or regional exposure to dangerous pollution" is equally baseless. Like its attempt to ignore binding caselaw, as commenters explain in their EF Repeal comments, EPA also ignores the statutory text of the Clean Air Act. *See* EF Comments II.B. The statutory text of section 202(a), coupled with Clean Air Act's definitions of "air pollutant" and "public welfare", along with other provisions in the Clean Air Act that repeatedly refer to greenhouse gases as "air pollutants," show that Congress placed no statutory bar on greenhouses gases being considered "pollutants" in section 202. *Id.*

Third, EPA's alternative rationale for repealing the endangerment finding – that the agency lacks "clear congressional authorization" and thus, regulation of greenhouse gases is a major question – also fails to account for existing precedent and the statutory construction of section 202. As commenters note, in *Massachusetts* the Supreme Court already expressly addressed – and rejected – EPA's argument that the agency is not authorized to regulate greenhouse gases. *See* EF Comments Section III. Subsequent decisions by the Supreme Court, as well as by Congress, have only bolstered the conclusion in *Massachusetts* that Congress authorized EPA to regulate greenhouse gases if it made a finding that they endanger public health and public welfare. *See* EF Comments Section II.A.1.b. (outlining cases law and Congressional enactments since 2009 that authorized EPA to regulate GHG emissions).

Fourth, EPA's argument that the 2009 endangerment finding erred by separating section 202(a)'s air pollutants "endangerment" determination from the vehicles' "cause or contribute" determination is equally meritless. At its base, as commenters note, EPA's arguments seek to introduce irrelevant and unlawful policy considerations into section 202(a)'s carefully designed regulatory scheme. *See* EF Comments Section V. By its very design, an endangerment finding involves a scientific inquiry into whether the pollutants at issue *endanger* public health and public welfare. In proposing this new interpretation to inject new considerations beyond the science, EPA ignores binding D.C. Circuit case law that already rejected this argument when it explained that "a 'laundry list of reasons not to regulate' [vehicle GHG emissions] simply has 'nothing to do with whether greenhouse gas emissions contribute to climate change.'" *Coalition for Responsible Regulation v. EPA* 684 F.3d 102, 118 (D.C. Cir. 2012), *rev'd in part on other grounds sub nom. Util. Air Regulatory Grp. v. EPA*, 573 U.S. 302, 321 (2014) (quoting *Massachusetts*, 549 U.S. at 533-34).

Finally, as noted elsewhere in these comments, supra Comments VI, EPA's proposed reconsideration of the endangerment finding violates fundamental principles of administrative law and if finalized, would be arbitrary and capricious. EPA has before it decades of evidence on the effects of climate change on public health and public welfare. And in the years since EPA's 2009 Endangerment Finding, the agency has repeatedly noted new assessments that have reaffirmed the conclusions of the 2009 Finding in subsequent rulemakings. *See* Comments VI.C.

EPA's proposal to rescind the 2009 Endangerment Finding does not, and cannot, repeal the valid basis for these standards without additional rulemaking. EPA has failed to provide a detailed justification for disregarding facts that it previously relied on in the Endangerment Finding and in subsequent rulemakings. *See* EF Comments IX. For these reasons, and others, EPA must rescind its proposed repeal of the endangerment finding.

VI. Repeal of the Vehicle Standards would be Contrary to Law.

EPA's proposed repeal of the vehicle standards rests upon three sets of legal and factual premises. First, EPA claims that the standards must be repealed because the underlying GHG Endangerment Finding is flawed. Second, EPA asserts that the "requisite technology" provision in section 202(a)(2) does not authorize vehicle GHG standards because such standards would not measurably affect climate change risks. Finally, EPA claims that the standards would slow down fleet turnover, inducing older cars to remain on the road for longer, and negatively affecting air quality, safety, and consumer choice.

As explained in section V, the repeal of the Endangerment Finding would be both contrary to law and arbitrary and capricious. But regardless of the validity of the Endangerment Finding repeal, EPA's separate decision to repeal the vehicle GHG standards is contrary to law for three independent reasons. First, with respect to all of its stated bases for repeal, EPA lacks legal authority to retroactively revise the MY2026 and earlier standards because the statute denies the agency retroactive rulemaking authority. Second, EPA's novel interpretation of CAA section 202(a)(2)'s "requisite technology" provision in preamble V.A-C—where EPA allegedly lacks standard-setting authority unless the standards can create a "scientifically measurable impact on global GHG concentrations and climate trends"[338]—cannot be reconciled with the statutory text or decades of judicial and administrative precedents. Third, EPA's assertions about slower fleet turnover in preamble V.D are based upon an erroneous interpretation of CAA sections 202(a)(1) and 302 and contravene D.C. Circuit precedent.[339]

A. EPA lacks authority to retroactively revise GHG standards for MY2026 and earlier for additional reasons.

EPA's repeal of GHG rules for MY2026[340] and earlier operate retroactively, since those regulations have already been applied to previously-new vehicles, which are now in use. The agency has already issued certificates of conformity for such vehicles, and manufacturers have

[338] 90 Fed. Reg. 36291.

[339] EPA proposes that the endangerment and standard-setting inquiries must invariably be combined into a single step. We contest this view, as we explain in our Endangerment Finding comments. But if it is correct, then each of the arguments in this section for why EPA lacks authority to repeal the standards presents independent legal grounds for why EPA lacks authority to repeal the Endangerment Finding as well.

[340] MY2026 generally begins in calendar year 2025 for manufacturers, 40 CFR 86.082-2, and EPA has already issued numerous certificates for MY2026.

complied or are in the process of complying.[341] Nonetheless, the agency indicates that the existing GHG standards—as well as supporting compliance measures—are to be rescinded and can no longer be enforced against in-use vehicles.[342] EPA lacks authority to make such a retroactive change. "[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."[343] Here, the statute not only fails to confer retroactive rulemaking authority, but it explicitly and impliedly denies such authority.

The statute reflects a congressional recognition that emissions from the entire vehicle fleet are contributing to health and environmental harm.[344] To address those emissions, in section 202(a), Congress chose to focus regulation on new vehicles, and through the gradual process of fleet turnover, to clean up the whole fleet over time. These new vehicle provisions also include a compliance program requiring manufacturers to guarantee that emission standards will be met over the course of the new vehicles' useful life. These continuing requirements are fixed at the time the vehicle is new,[345] and Congress nowhere granted the agency freestanding authority to post hoc abrogate requirements for vehicles already in use.

This allocation of power is also reflected in the cooperative federalism scheme of motor vehicle regulation established throughout the Act. Under that scheme, EPA possesses primacy over new motor vehicles,[346] but States and localities retain their police powers over in-use vehicles. See CAA section 209(a), (d).[347] EPA's proposal threatens to upend this longstanding

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[341] EPA's offer of compliance flexibilities for regulated entities, e.g., 90 FR 36313-14, while perhaps welcome by some entities, does not cure the lack of statutory authority in the first instance.

[342] See, e.g., 90 FR 36314/3 (indicating the agency's intent to "apply to all MYs of vehicles and engines, including MYs that have completed manufacture prior to the effective date of any final rule").

[343] *Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204, 208 (1988); cf. also *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 NTHSA's decision not to relax standards after the model year had begun).

[344] See CAA section 101(a)(2), 42 U.S.C. § 7401, (recognizing that "the increasing use of motor vehicles, has resulted in mounting dangers to the public health and welfare").

[345] See, e.g., CAA section 202(a)(1), (d), 203, 206, 207. For example, section 202(a)(1) authorizes EPA to establish standards for "new" vehicles and engines that persist for the "useful life" of "such vehicles and engines." Or for example, section 207(a)(1) imposes a warranty requirement that requires the vehicle to be "designed, built, and equipped so as to conform at *the time of sale* with applicable regulations" and 207(c)(3)(A) requires each manufacturer to furnish maintenance instructions "with each new motor vehicle."

[346] EPA's regulatory power over new motor vehicle emissions is subject to the California waiver provision, under which the agency must waive preemption for California motor vehicle emission standards, subject to certain statutory criteria. CAA section 209(b).

[347] *Salt Lake Cty. v. Volkswagen Grp. of Am., Inc. (In re Volkswagen "Clean Diesel" Mktg., Sales Practices, & Prods. Liab. Litig.)*, 959 F.3d 1201, 1215 (9th Cir. 2020) ("although Congress displaced state emission standards for new motor vehicles in 1967, it has maintained a substantial role for states in post-sale implementation and enforcement ever since" (cleaned up)); *Allway Taxi, Inc. v. New York*, 340 F. Supp. 1120, 1124 (S.D.N.Y. 1972) ("The preemption sections . . . do not preclude a state or locality from

statutory scheme by allowing the agency to retroactively re-write the rules for existing vehicles, including vehicles that have been in-use for over a decade, thereby intruding on areas of State jurisdiction. But EPA identifies no statutory authority or administrative precedent for such a fundamental transformation of its authority, much less the "exceedingly clear language" required for agency actions that significantly alter the balance of Federal and State power.[348]

EPA's limitation to prospectively regulating new vehicles is supported by the surrounding statutory context. The CAA section 202(a)(1) power to revise standards is based on determining whether emissions from the class of "new" vehicles "cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." The use of the present tense in "cause, or contribute" as well as the phrase "reasonably be anticipated" suggest a predictive evaluation of ongoing and future impacts, and by extension prospective regulation, not retroactive power.

Similarly, section 202(a)(2) describes the standards as "tak[ing] 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." That is, EPA must evaluate the amount of lead-time needed "after" the time of its rule to develop and apply advanced pollution control technologies. The intent of section 202(a)(2) is to provide sufficient lead-time so that manufacturers can reasonably plan for their compliance. This too indicates prospective operation, not retroactive power.[349] The statute also specifies more detailed lead-time provisions for discrete applications of the section 202(a)(1) authority, and these are even less compatible with retroactive repeal.[350]

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imposing its own exhaust emission control standards upon the resale or reregistration of the automobile. Nor do they preclude a locality from setting its own standards for the licensing of vehicles for commercial use within that locality."); see also, e.g., CAA section 216 (defining regulated manufacturers as persons who, among other things, make "new motor vehicles", and further defining "new motor vehicle"), 108(f) (requiring the Administrator to make available information about in-use transportation control measures to appropriate Federal, State, and local agencies), 110(a)(5) (limiting the Administrator's authority over indirect source review programs and indicating such authority remains within the power of State and local governments), 182 (State authority and requirements over vehicle inspection and maintenance programs), 187 (same), 101(a)(3), 107(a).

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

[349] To the extent EPA regards its revision of the MY2026 and earlier standards as only prospectively applicable, that still does not resolve the lack of statutory authority. As explained above, EPA's authority to regulate vehicles in-use derives from standards and other requirements established for new vehicles. We acknowledge the agency can appropriately adjust requirements for vehicles already in-use, for example, to certificates of conformity to implement the applicable standards or to improve its compliance and enforcement processes, see, e.g., section 206(b)(2)(A) (authority to "suspend or revoke" certificates). But for the reasons stated in the text, the statute does not authorize the agency to certify a vehicle to one set of requirements while new and then wholesale transform the entire regulatory program after the vehicle goes in-use.

[350] For example, section 202(a)(3)(C) requires that certain section 202(a)(1) heavy-duty standards "apply for a period of no less than 3 model years beginning no earlier than the model year commencing 4 years after such revised standard is promulgated." This provision is inconsistent with a retroactive repeal of

That EPA seeks to retroactively relieve existing obligations as opposed to imposing new ones does not salvage its lack of authority. As an initial matter, it is not clear that such a distinction matters for purposes of assessing retroactivity.[351] In any event, EPA is not merely proposing to relieve existing obligations. Rather, as we explain further in section VII.D-E, by eviscerating over a decade's worth of GHG regulations, EPA is significantly undermining the reliance interests of regulated entities and other stakeholders, impairing the value of past business transactions, and penalizing companies who have made significant investments to produce cleaner vehicles than their competitors. Most pointedly, EPA proposes to eliminate the value of the millions of existing GHG compliance credits, which companies have accumulated over the past fifteen years, instantly wiping out billions of dollars of value and altering the "legal consequences" to prior business transactions.[352] "[F]amiliar considerations of fair notice, reasonable reliance, and settled expectations"[353] suggest that companies had every right to rely on some continued value for their GHG compliance credits, and that eliminating the value of all credits constitutes retroactive rulemaking that is disfavored by law and prohibited by the statute.

B. EPA's interpretation of Clean Air Act section 202(a)(2)'s "requisite technology" provision is wrong.

EPA separately asserts it has legal authority to repeal the GHG standards because no "requisite technology" exists under section 202(a)(2) for controlling vehicular GHG emissions that would measurably affect climate change trends. This assertion is wrong. The plain text of section 202(a)(2), as interpreted by the D.C. Circuit and Supreme Court, requires EPA to ensure that its standards are technologically feasible within the lead-time provided and taking into account compliance costs. This provision does not require, or permit, EPA to repeal standards based on an argument that they do not, by themselves, make a sufficient dent in global warming. The agency's related policy arguments about the futility of addressing climate change merely demonstrate that the agency's interpretation of the meaning of "requisite technology" runs counter to the purpose of the Act: to reduce emissions that contribute to air pollution.

i. EPA's interpretation ignores the plain statutory text, as confirmed by numerous D.C. Circuit and Supreme Court decisions.

Section 202(a)(1) directs EPA to prescribe motor vehicle emission standards upon making an endangerment finding. 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

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standards for the current and prior model years (and also for future model years within 4 years of the promulgation of a revised standards rule). While this provision does not apply in this context (as it relates to listed non-GHG pollutants), it does help illuminate legislative intent regarding section 202(a)(1) generally.

[351] See *Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204, 208 (1988) ("Retroactivity is not favored in the law. Thus, congressional enactments and administrative rules will not be construed to have retroactive effect unless their language requires this result.").

[352] *Landgraf v. Usi Film Prods.,* 511 U.S. 244, 270 (1994).

[353] *Id.*

Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period."

The plain meaning of section 202(a)(2) is that in prescribing any regulation under section 202(a)(1), EPA must provide sufficient lead-time before the regulation "take[s] effect" "to permit the development and application of the requisite technology" before the regulation takes effect. The meaning of the word "requisite" is "required; absolutely needed; essential."[354] What is the "technology" required for? Congress explicitly stated that the technology is required for the "regulation prescribed" under section 202(a)(1), i.e., the "standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines." In other words, the "requisite technology" means the technology necessary for meeting the emission standards, to ensure that the emission standards are technologically feasible.

Moreover, EPA's assertion that the "requisite technology" must single-handedly impact the air pollution problem is belied by the actual link the statute makes between technology and air pollution. The statute says that the "regulation shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology," and the "regulation" in turn contains "standards applicable to the emission of any air pollutant" from vehicle classes that "cause, or contribute to, air pollution."[355] The statute does not say, as EPA would like it to, that "the regulation shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology *to measurably impact air pollution*" or "*to exceed a threshold for impacting air pollution in the Administrator's judgment"* or like terms. In other words, the statutory relationship between "requisite technology" and "air pollution" is like this: requisite technology ensures the standards can be met, the standards reduce or eliminate vehicle emissions, and those emissions contribute to dangerous air pollution. EPA would collapse this relationship to requisite technology mitigates air pollution, but that differs from what Congress actually said.

Courts have consistently adhered to the plain text reading of the Act. For example, in its seminal decision on EPA's section 202(a)(2) authority, the D.C. Circuit held that section 202(a)(2) is a "requirement that emission standards be technologically achievable."[356] A bevy of Supreme Court and D.C. Circuit cases support this plain reading.[357] The legislative history

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[354] The American Heritage Dictionary of the English Language 1105 (1st ed. 1969); see also https://www.merriam-webster.com/dictionary/requisite ("needed for a particular purpose: essential, necessary"); *see also Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 473 (2001) ("Requisite, in turn, means sufficient, but not more than necessary." (cleaned up)).

[355] CAA section 202(a)(1), (2).

[356] *NRDC v. EPA*, 655 F.2d 318, 322 (D.C. Cir. 1981); *see also id*. at 328-29 (citing S.Rep.No.1196, 91st Cong., 2d Sess. 24 (1970) and *International Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 629 (D.C.Cir.1973)) (holding that section 202(a)(2) allows EPA to set technology-based standards based on "the development and application of improved technology rather than be limited by that which exists today").

[357] *See generally Massachusetts v. EPA*, 549 U.S. 497, 531, 127 S. Ct. 1438, 1461 (2007) (section 202(a)(2) requires EPA "to delay any action "to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance"); *Union Elec. Co. v. EPA*, 427 U.S. 246, 257 n.5, (1976) (section 202(a) is a provision where Congress explicitly directed EPA to

confirms it.[358] The Executive Branch has also adhered to this understanding of technical feasibility in a long and unbroken chain of administrative decisions since the earliest days of the Act,[359] a reading that is entitled to "very great respect."[360]

Rather than hewing to the plain text reading, EPA advances an unprecedented and atextual interpretation that "requisite technology" does not exist unless the standards single-handedly create a scientifically measurable impact on global temperature trends. In effect, EPA is rehashing its arguments against the endangerment finding, only now by means of the 202(a)(2) "requisite technology" provision. Based on a similar rationale, EPA claims regulation is "futile" and therefore exceeds the agency's statutory authority.

But as we have explained in section V, EPA's argument against the endangerment finding is wrong on multiple counts. Legally, as a prerequisite to regulation, section 202(a) requires EPA to find that a class of motor vehicle merely contributes to a dangerous air pollution problem, not that subsequent regulation would by itself create "measurable impact on the identified danger."[361] As the D.C. Circuit has held, EPA's section 202(a)(1) authority is not "conditioned on evidence of a particular level of mitigation."[362] And factually, regulating vehicular GHG emissions has mitigated and will continue to mitigate climate change in enormously impactful ways. Nothing about the term "requisite technology" gives EPA's argument any more weight. Nowhere does the statute say, for example, that "requisite technology" must exist for curing the air pollution problem, or for ameliorating it in a measurable way. Nor can the Act be read to permit EPA to take a non-enumerated consideration (whether requisite technology causes measurable impacts on air pollution) to repeal regulation where such regulation is supported by the actual statutory criteria (whether requisite technology exists to feasibly comply with the standards).[363]

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consider "economic and technological infeasibility"); *Motor & Equip. Mfrs. Asso. v. Envtl. Prot. Agency*, 627 F.2d 1095, 1101 (D.C. Cir. 1979) (MEMA I) (under section 202(a)(2), the (a)(1) emission standards "can take effect at such time as the Administrator finds them to be technologically feasible, giving appropriate consideration to the costs of compliance.").

[358] *See* H. Rep. 91-1783 (Dec. 17, 1970) ("The effective date of the standards is to depend on the period necessary to develop the requisite technology giving appropriate consideration to the cost of complying by such date.")

[359] *See, e.g.*, 31 FR 5170 ("taking into consideration the technological feasibility and the economic costs of meeting these standards, and the lead time necessary under current manufacturing processes to conform to these requirements"); 34 FR 7348 ("existing technology at reasonable cost is available to meet the standards for 1971 and … it is reasonable to expect the levels of control prescribed for future years … will be achievable at reasonable costs within time to satisfy the progressively more stringent standards as they become applicable for new model motor vehicles.").

[360] *Loper Bright Enters. v. Raimondo*, 603 U.S. 369, 386 (2024).

[361] 90 FR 36311. *See generally* section V; EF Comments.

[362] *Coalition for Resp. Regulation v. EPA*, 684 F.3d 102, 127-28 (D.C. Cir. 2012).

[363] See *Whitman v. American Trucking Ass'ns*, 531 U.S. 457, 468 (2001) ("Congress does not hide elephants in mouseholes").

Other contextual clues further undermine EPA's interpretation. Throughout section 202, Congress identified numerous specific exercises of the section 202(a)(1) authority. For example, the standard-setting provision for heavy-duty criteria pollutants requires "regulations under [section 202(a)(1)]" to "contain standards which reflect the greatest degree of emission reduction achievable through the application of technology which the Administrator determines will be available for the model year to which such standards apply," considering costs, energy, and safety.[364] The plain meaning of this provision is that EPA must identify the maximum emissions reductions achievable by technology available in the model year. The statutory inquiries are what technologies exist (or will exist) and how much emissions can they reduce, considering costs, energy, and safety. But EPA's interpretation would hold that the agency could not set standards at all unless there exists technology that can not merely reduce the contribution of vehicle classes to the pollution problem, but measurably impact the pollution problem itself. In other words, even if there existed a cost-effective and safe technology that could reduce vehicular emissions by 100%, EPA's interpretation would mean no regulation (and thus a 0% reduction) unless that technology also measurably impacts the pollution problem. That is simply not the statute Congress wrote in section 202(a)(1), or the statute that EPA has consistently implemented over the last five decades.[365, 366]

EPA's reading of "requisite technology" would also contravene the statutory purpose and structure. Rather than fulfilling the Act's and section 202(a)(1)'s purpose of preventing pollution,[367] EPA's revisionist reading would *prohibit* the agency from preventing pollution even when it has identified a danger to public health and welfare and technologies sufficient to reduce contribution to such pollution—until and unless technology is advanced enough to single-handedly impact the pollution problem. EPA's interpretation is also inconsistent with the structure of the Act, where Congress developed a comprehensive strategy for addressing air pollution by allowing EPA to regulate emissions from multiple different sources, recognizing that controlling emissions from one type of source is often not itself sufficient to make the necessary impact on air pollution.

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[364] CAA section 202(a)(3)(A)(i); see also section 202(l)(2) (similar language as (a)(3)(A)(i)).

[365] Other specific exercises of the section 202(a)(1) authority similarly refer to technology in achieving emission standards, not mitigating air pollution. See, e.g., CAA section 202(i)(2)(A)(i) ("the availability of technology (including the costs thereof) . . . for meeting more stringent emission standards"), (b)(1)(B)(i) (authorizing certain waivers where "the ability of such manufacturer to meet emission standards . . . was, and is, primarily dependent upon technology developed by other manufacturers").

[366] EPA cites in passing to section 202(a)(1)'s language requiring standards to be applicable for a vehicle's "useful life" "whether such vehicles and engines are designed as complete systems or incorporate devices to prevent or control such pollution." This part of the sentence clarifies that the standards apply regardless of the form of the pollution control technology (e.g., whether it is a complete system or incorporates a device, and whether it prevents or controls emissions). It cannot be read, however, to mean that individual vehicles or engines themselves must prevent or control the air pollution problem. Such a reading would conflict with the surrounding text, under which EPA is to set standards for "classes" of vehicles based on their contribution to air pollution. Moreover, such a reading would be absurd, because no individual vehicle or engine could single-handedly prevent or control air pollution.

[367] See CAA section 101, 202(a)(1).

ii. EPA's own reasoning demonstrates the absurdity of its interpretation.

EPA offers no serious textual counterarguments. Instead, the agency explains the absurd and unprecedented consequences of its own interpretation. For example, EPA claims the requisite technology "would need to *remove* GHGs already present in the atmosphere."[368] But EPA has never before set a standard that requires motor vehicles to remove atmospheric pollution, nor does the statute suggest that EPA can regulate only if a technology exists that not only can "prevent or control" motor vehicle pollution, section 202(a)(1), but actually allows motor vehicles to clean up the ambient air. Throughout section 202(a), Congress contemplated numerous specific exercises of the section 202(a)(1) power, and in every case Congress directed EPA to use the power to reduce emissions *from* motor vehicles, as opposed to requiring motor vehicles to remove pollutants already present in the ambient air.[369] There is simply no basis for EPA's quixotic claim that it lacks power to regulate unless and until American cars can be turned into vacuum cleaners for the ambient air.

EPA further claims that "the "requisite technology" to meet the identified danger would, at minimum, require a *complete change* from internal combustion engines to EVs or another zero-emissions technology," a result allegedly inconsistent with *West Virginia v. EPA*.[370] But its hypothetical is divorced from reality. None of the GHG standards that EPA proposes to repeal require a "complete change" to EVs or another zero-emissions technology. To the contrary, the 2024 Rules, which established the most protective GHG standards to date, did not mandate any specific pollution control technology, but rather allowed manufacturers to comply through various technologies including advanced internal combustion vehicles, hybrids, plug-in hybrids, and electric vehicles.[371]

EPA's argument also misreads *West Virginia*. A switch from motor vehicles that run on one kind of fuel (gasoline or diesel) to another (electricity) falls well within EPA's statutory authority. This can be easily distinguished from the generation shifting that the Court rejected in *West Virginia*, which would be more akin to mandating bicycles and buses over cars, than the standards at issue here, which—consistent with the Court's description of prior, appropriate regulatory approaches—ensure that a given source category operates more cleanly. Indeed, *West Virginia* specifically noted that "fuel-switching" represents "more traditional air pollution control measures" within EPA's authority.[372] Although EPA's proposal neglects to mention it, the 2024 Rules and subsequent litigation filings addressed this argument in detail, which we incorporate

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[368] 90 FR 36311/3.

[369] See, e.g., sections 202(a)(3)(A), (b), (g)-(h).

[370] 90 FR 36311/3 (emphasis added).

[371] See LMDV Rule RTC 289 et seq.; HDP3 Rule RTC 94 et seq. This is not to say that EPA could not establish standards premised on "complete change" to a single technological pathway, which EPA has done in the past. For example, EPA has effectively required all cars to adopt one control technology, such as the catalytic converter, to comply with criteria standards. See 89 FR 27897 n. 509.

[372] *West Virginia*, 142 S. Ct. 2587, 2611 (2022).

by reference into our response.[373] We further address this issue in our Endangerment Finding comments.

iii. EPA's "futility" argument has no legal basis and contradicts the text and purpose of the Act.

EPA advances an additional argument that the supposed "futility" of GHG regulation under section 202(a)(1) means no authority exists to either make the endangerment finding or set the standards.[374] As explained above, the statutory text plainly gives EPA authority to address pollution problems by establishing standards that reduce emissions, and does not require that such standards achieve some extra-statutory "measurable" impact on the harms caused by air pollution. The Clean Air Act is designed to address large-scale problems—atmospheric scale problems—caused by numerous and diverse emission sources. It does so by directing EPA to identify air pollutants that endanger public health and welfare. Once those pollutants have been identified, it directs EPA to set (and as control technologies and scientific understanding advance, revise) standards that will mitigate emissions from different source categories. Not only does section 202 fail to authorize EPA to apply a "measurable impact" test before executing its statutorily-mandated obligation to promulgate emission standards—to our knowledge, no other section of the Act does either.[375] Congress made that decision. EPA has no authority to change it. And the Supreme Court has already rejected this line of argument. "Agencies, like legislatures, do not generally resolve massive problems in one fell swoop, … but instead whittle away over time, refining their approach as circumstances change and they develop a more nuanced understanding of how best to proceed. . . . And reducing domestic automobile emissions is hardly tentative. Leaving aside the other greenhouse gases, the record indicates that the U. S. transportation sector emits an enormous quantity of carbon dioxide into the atmosphere."[376]

Moreover, reducing vehicle GHG emissions has created and continues to create massive public health and welfare benefits and is hardly "futile." And EPA points to nothing in the text of the "requisite technology" provision that gives this "futility" argument any more weight. To the contrary, EPA's self-aggrandizing futility argument would contravene the purpose of the Act by essentially giving the agency the power to decide when to follow Congress's directives, making up its own test of what is a sufficient "measurable" impact. We address this issue further in our Endangerment Finding comments. In section VII.C, we also show the severe flaws of EPA's factual claim that regulation is futile because total US onroad emissions fall below a so-called scientific threshold for measurable impacts on climate change.

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[373] *See, e.g.*, LMDV Rule RTC 309-16; EPA's Brief, *Kentucky v. EPA*, D.C. Cir. No. 24-1087; State and Public Interest Respondent-Intervenors Brief, *Kentucky v. EPA*, D.C. Cir. No. 24-1087; EPA's Brief, *Nebraska v. EPA*, D.C. Cir. No. 24-1129; State and Public Interest Respondent-Intervenors Brief, *Nebraska v. EPA*, D.C. Cir. No. 24-1129.

[374] 90 FR 36312.

[375] Under EPA's theory, regulation of carcinogens would stop until EPA can point to a "measurable" decline in cancer rates from a specific standard. Regulation of lead would have been precluded until EPA could point to a "measurable" impact on children's IQ scores and infertility from a specific standard.

[376] *Massachusetts v. EPA*, 549 U.S. 497, 499 (2007).

iv. EPA fails to explain how its unprecedented statutory interpretation can be reconciled with control of other pollutants.

EPA's novel foray into the "measurable impacts" of GHG pollution could wreak havoc on the entire vehicle emissions program if the same approach is more broadly applied to criteria and air toxic pollution. For as with GHG pollution, other pollution is caused by a number of factors beyond motor vehicle emissions. Many pollution problems arise from diverse anthropogenic emission sources, including mobile, stationary, and area sources; as well as natural factors, such as temperature wind, humidity, sunlight, and natural emissions (e.g., volatile organic compounds emitted by organic matter, sea spray aerosols, volcanic eruptions). For example, ground-level ozone formation is significantly affected by not only onroad emissions of NOx and VOCs, but also by other anthropogenic emissions, sunlight and higher UV radiation, higher temperatures that accelerate chemical reactions and increase natural VOC emissions, atmospheric stagnation (e.g., due to thermal inversions or calm winds), and humidity. EPA has never before posited that the fact that other dynamics also affect air pollution formation precludes it from addressing sources otherwise under its regulatory purview. EPA cannot regulate the sun, or predict with complete precision when there will be a sufficient amount sunlight to enable ozone formation, and therefore precisely what effect reductions in VOC and NOx emissions will have on ozone formation in a given year, or the resulting health outcomes. EPA knows, however, that reducing VOC and NOx emissions will reduce ozone formation and the resulting health (and welfare) harms, and has set standards that require VOC and NOx emission reductions. In doing so, EPA has ensured significant improvements in ozone pollution.[377]

Applying EPA's focus on measurable pollution impacts to ozone pollution would raise significant concerns. Might no "requisite technology" exist for controlling NOx pollution because, for instance, the effects of such technology on ozone formation will depend on the number of warm sunny days, as opposed to cool cloudy days? Would the existence of requisite technology depend on the relative impact of the contribution of vehicular NOx emissions to ozone formation compared to non-vehicular sources, or compared to the uncertainties found in historical data trends? Or would it depend on the uncertainties in the measurement of ambient ozone, for example the discrepancies between monitored ozone concentrations and actual ozone concentrations prevailing across a region (e.g., due to spatial or temporal variability) or instrument uncertainties (e.g., calibration drift, instrument detection limits, etc.), and the relative size of those uncertainties compared to the impacts of controlling vehicular NOx emissions? Would requisite technology fail to exist because ozone formation cannot be eliminated without eliminating ozone and NOx transport from other countries? Would it fail to exist because the subsequent effects on the harms caused by ozone, NOx, and VOCs—respiratory, cardiovascular, nervous system, cancer, mortality, visibility impairment, materials damage, etc.—could not be predicted with a certain level of precision and certainty? To our knowledge, none of EPA's prior mobile source criteria pollutant rules have engaged in these kinds of analyses, whether for ozone

[377] *See* EPA, *Our Nation's Air: Trends Through 2023* (2024), https://gispub.epa.gov/air/trendsreport/2024/.

or any other criteria or air toxic pollutant[378]—and such analyses are irrelevant under the correct reading of the statute.[379]

It is unclear whether, under EPA's new interpretation, there is "requisite technology" to control any vehicular emissions at all. And although EPA explicitly indicates its intent to not affect criteria regulation in this proposal, its unprecedented interpretation raises significant questions for the vitality of the entire vehicle emissions program—and the Clean Air Act writ large. The agency's radical and atextual interpretation undermines the text, operation, and purpose of section 202(a)(1)—not only for GHG regulation but also for the criteria and air toxics pollutants that Congress explicitly mandated EPA to regulate.

v. EPA's interpretation also misunderstands Section 202(a)'s technology-based approach to pollution within the Act's broader structure.

The Act establishes multiple approaches to pollution control. In section 202(a), Congress established a "technology-based" regulatory program,[380] which as already explained requires EPA to set emission standards based on a finding of technological feasibility. Congress frequently used a technology-based approach in the Act, including for example, in sections 111 and 112.[381] By contrast, in other parts of the Act, Congress explicitly followed a media- or health-based approach, where EPA sets standards based on acceptably clean levels of ambient air. For example, the National Ambient Air Quality Standards (NAAQS) must be set at levels "requisite to protect the public health" "allowing an adequate margin of safety."[382] Congress often combined the two, for example, by requiring "maximum achievable control technologies" to control air toxics in section 112(d), together with additional emission standards to control for

[378] We provide ozone as an illustrative example, but ozone is not the only pollution problem with these characteristics. For example, ambient PM pollution is also subject to complex causal chains, involving diverse anthropogenic and natural emissions (e.g., sea salt, natural VOC and ammonia emissions) and meteorological factors (e.g., temperature, sunlight, humidity, cloud and fog cover, wind and mixing, precipitation, wildfires and dust storms, etc.). Ambient PM measurement is also subject to uncertainties, including those related to spatial and temporal variability, and limits on instrument precision and accuracy. PM pollution also has complex and attenuated pathways through which it causes endangerment. The same sources of uncertainties (e.g., diverse primary sources, numerous factors affecting secondary formation, measurement uncertainties, complex and attenuated harm pathways) apply to many air toxics as well.

[379] Indeed, the D.C. Circuit has reached a similar conclusion in another context. *Cf. Catawba Cty. v. EPA*, 571 F.3d 20, 39 (D.C. Cir. 2009) ("Given that the statute uses the word 'contribute' and that a contribution may simply exacerbate a problem rather than cause it, we see no reason why the statute precludes EPA from determining that a county's addition of PM2.5 into the atmosphere is significant even though a nearby county's nonattainment problem would still persist in its absence. In fact, a contrary interpretation of 'contribute' would effectively preclude a nonattainment designation for any attaining county when the cause of the violation is metropolitan-wide. We may not interpret 'contribute' in a way that does such violence to section 107(d)'s very purpose.").

[380] *NRDC v. EPA*, 655 F.2d at 322. See also 2024 LMDV Rule RTC 362 (explaining that section 202(a) does not require EPA to establish standards that attain certain levels of air quality).

[381] *See West Virginia*, 597 U.S. at 708.

[382] CAA section 109(b).

remaining risks after applying such technologies in section 112(f)(2).[383] These regulatory approaches can be further contrasted with tort law, under which emissions control responsibilities are determined based on common law causes of action and traditional notions of proximate cause. [384]

A key benefit of a technology-based approach is its straightforward administration. Rather than resolving "extremely complex and value-laden questions about the toxic effects of chemicals" or identifying "that uncertain point where harmful effects are caused and safety ends," as would be required by a media- or health-based approach, a technology-based approach by congressional design shortcuts those challenging inquiries by simply requiring regulated entities to meet standards achievable by available emissions control technologies.[385]

But EPA turns section 202(a)'s technology-based program on its head. Rather than recognizing that the statute simply requires the agency to set standards based on available control technologies, the agency suggests that no technology-based standards can be set unless the standard also achieves a specific and measurable level of change to the ambient air or to endangerment[386] (characteristic of a media-based approach) and the source category can be

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[383] A similar scheme exists for criteria air pollutants, under which Congress required State Implementation Plans for attaining and maintaining the NAAQS, while also requiring technology-based controls like Reasonably Available Control Measures and Best Available Control Measures in certain cases. *See* section 110(a), 172(c)(1), 189(b)(1)(B).

[384] *See* Mark Latham, Victor E. Schwartz & Christopher E. Appel, The Intersection of Tort and Environmental Law: Where the Twains Should Meet and Depart, 80 Fordham L. Rev. 737, 754 (2011) (explaining the differences between torts and statutory environmental law, and stating that "[t]he challenges presented by many modern complex environmental tort actions have prompted Congress and state legislatures to enact statutes to limit or facilitate the remediation of certain harms to the environment. Their reasons for doing so have not only been to improve upon the common law actions and introduce greater precision in addressing complex litigation issues, but also to expand the scope of recovery to a wider range of potential harms. In addition, the legislative complement to the common law has enabled other policy objectives to be pursued, enhancing the overall effectiveness, efficiency, and availability of legal recourse for an environmental injury. * * * The addition of statutory law allows for other policy objectives such as the precautionary principle to be included in the legal system."); id. at 758 (The relatively narrow overlap between tort law and statutes designed to remedy environmental harm leaves a multitude of environmental laws and regulations operating outside of the tort system. Increasingly, this area is populated by regulatory laws intended to conserve resources or prevent future harms from occurring as opposed to responding to a harm that has already occurred.") ; id. at 759 ("the CAA . . . sets forth required conduct with a specific environmental objective that does not involve the common law of torts")

[385] T. McGarity, Media-Quality, Technology, and Cost-Benefit Balancing Strategies for Health and Environmental Regulation, 46 Law & Contemp. Prob. 207, 208 (Summer 1983) (McGarity). The Supreme Court recognized this article as persuasive authority in *West Virginia*, 597 U.S. at 708.

[386] *See* 90 FR 36311-12 (noting that "requisite technology" does not exist because "even a complete shift toward EVs or other zero-emission vehicle and engine technologies in the United States would not reliably and meaningfully reduce elevated global concentrations of GHGs and, therefore, not reliably and meaningfully reduce the risks of climate change asserted in the Endangerment Finding").

shown to be a proximate cause of the harm[387] (characteristic of torts). These sorts of inquiries are precisely what Congress adopted a technology-based approach to avoid.

C. EPA's assertion that it must consider the rate of fleet turnover is contrary to law and contradicts the plain text of Sections 202(a)(1) and 302(h).

EPA's final rationale for repealing the GHG standards is that they may result in slower fleet turnover. The standards allegedly increase the costs of vehicle purchases, thereby disincentivizing purchasers from buying new vehicles and keeping older vehicles on the road longer, which in turn generates more air pollution, and reduces vehicle safety and consumer choice. EPA generally suggests these considerations are statutorily relevant under section 202(a)'s mandate to protect public "welfare," as defined in section 302(h) to include "hazards to transportation, as well as effects on economic values and on personal comfort and well-being."

EPA's interpretation of the statute is wrong. EPA erroneously claims that section 202(a)(1)'s reference to "public health and welfare" requires a broad consideration of the social costs of pollution control, including on consumer choice. But the statutory text refers to "*air pollution* which may reasonably be anticipated to endanger public health or welfare"[388]—not the *effects of complying with the standards* on public health or welfare. As the D.C. Circuit has explained, section 202(a)(1)'s consideration of "public health and welfare" "is directly related to the effects of pollution on the environment," "not the social costs of pollution control."[389] And while 302(h) broadly embraces welfare "effects on economic values and on personal comfort and well-being," those effects—and all other effects described in section 302(h)—are statutorily relevant only when they are caused by dangerous "air pollution," CAA section 202(a)(1), not from economic activities to achieve compliance with the standards. EPA has routinely affirmed these longstanding interpretations.[390] The proposal fails to acknowledge, much less address, that its new interpretation contradicts its prior position and D.C. Circuit precedent.

Moreover, the agency's focus on consumer choice at the expense of public health and the environment turns the statute on its head. The D.C. Circuit has found that "as long as feasible technology permits the demand for new passenger automobiles to be generally met, the basic requirements of the Act would be satisfied, even though this might occasion fewer models and a more limited choice of engine types."[391] In other words, EPA may base its action on "reasoning

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[387] *See* 90 Fed. Reg. 36311–12 (noting that "the United States has been decreasing absolute GHG emissions while other countries like China are significantly increasing their GHG emissions" and asserting the lack of "requisite technology" given "the relatively low share of total global anthropogenic emissions" contributed by new motor vehicles in the United States).

[388] Section 202(a)(1).

[389] *MEMA I*, 627 F.2d at 1117-18.

[390] *See, e.g.*, 89 Fed. Reg. 29587 n.804 ("the statute does not require . . . EPA to consider costs to consumers"); 78 FR 2133-34 (citing *MEMA I*, 627 F.2d at 1118 (section 202(a)(2)'s cost of compliance concern "relates to the timing of a particular emission control regulation rather than to its social implications")).

[391] *Int'l Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 640 (D.C. Cir. 1973).

divorced from the statutory text"[392] by using the agency's new judgments about consumer choice as an excuse to forgo cost-effective emissions reductions.

To be sure, the agency has long evaluated the effects of its standards on consumers and provided the public with that information to inform their comments, such as information on how the standards support affordable and equitable access to clean vehicles. As we show in section VII.C, the agency has failed to reasonably evaluate the important role the GHG standards can play in driving adoption of cleaner vehicles favored by consumers. But while these consumer issues may be useful additions to the administrative record to expand the agency and the public's understanding of regulatory effects, they are not factors that EPA is expressly required to consider under section 202, nor do they fall within the definition of "public welfare." And EPA's consideration of consumer choice issues cannot substitute for or trump its consideration of the statutory factors, which include emissions reductions[393] and the resulting benefits of such reductions on public health welfare in section 202(a)(1), as well as technological feasibility, lead-time, and compliance costs for regulated entities in section 202(a)(2). As we explain in section VII.C, EPA has failed to reasonably consider these statutory factors.

VII. Repeal of the Vehicle Standards would be Arbitrary and Capricious.

Not only does EPA lack statutory authority to repeal the GHG standards, EPA's proposed repeal also fails to comport with the requirements of reasoned decisionmaking. In subsection A below, we recount the familiar standards for reasoned decisionmaking that apply to EPA's action. Subsection B explains that the standards repeal is unreasonable because its underlying premise—the proposed repeal of the Endangerment Finding—is itself defective. Subsection C shows that EPA has failed to consider, much less reasonably consider, the statutory factors of emissions impacts, technological feasibility, lead-time, and compliance costs. The same section also reveals EPA's failure to consider other relevant factors, causing the agency to neglect important aspects of the problem and inexplicably deviate from longstanding positions. For example, the agency does not confront the robust findings and voluminous record of the 2024 Rules, which identified massive emission benefits achievable through available technologies at reasonable costs, and significant non-emission benefits such as strengthening the global competitiveness of US vehicle companies, creating advanced manufacturing jobs, and enhancing energy security and environmental justice. Subsection D surveys the significant reliance interests generated a decade-and-a-half of GHG regulation, and the significant harms that EPA's proposal threatens to vehicle manufacturers, drivers, States, and other parties. While the proposal solicits comments on

[392] *Massachusetts v. EPA*, 549 U.S. 497, 532 (2007); *see also Indep. U.S. 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.").

[393] To the extent EPA is considering the vehicular emissions impacts of fleet turnover associated with the GHG standards, that is germane to the statutory factor of emissions impacts. However, EPA frames its fleet turnover consideration as reaching beyond such emissions impacts to consumer choice issues. Moreover, as we explain in section VII.C, EPA fails to actually consider emissions. The agency's conclusory assertions about emissions impacts in its fleet turnover discussion contain no updated analysis of emissions impacts of the proposal (whether due to turnover or any other reason).

reliance interests, it fails to identify them except for limited interests of vehicle manufacturers, and even as to those interests, fails to explain why they should be overridden. Subsection E explains that EPA's proposal to retroactively adjust the MY2026 and earlier standards fails to reasonably consider and mitigate the burdens of retroactivity. Finally, subsection F elucidates several plausible alternatives that the agency failed to consider.

A. EPA's rulemaking is subject to the requirements of reasoned decisionmaking.

The Clean Air Act and the Administrative Procedure Act prohibit EPA from taking actions that are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."[394] Rulemaking under the Clean Air Act further specifies that EPA's proposed rulemakings must include a "statement of [the proposal's] basis and purpose," including "the factual data on which the proposed rule is based," "the methodology used in obtaining the data and in analyzing the data," and the "major legal interpretations and policy considerations underlying the proposed rule."[395] The Act also directs that the final rule "may not be based (in whole or in part) on any information or data which has not been placed in the docket as of the date of such promulgation," and affirms its expectation that commenters will be afforded an opportunity to comment on all matters of central relevance to the rule.[396]

In defining the scope of reasonable administrative decisionmaking, the Supreme Court has instructed that an agency action must be "reasonable and reasonably explained."[397] The agency must "articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made.'"[398] The agency cannot "rel[y] on factors which Congress has not intended it to consider" or "entirely fail[] to consider an important aspect of the problem."[399] Nor can it "offer[] an explanation for its decision that runs counter to the evidence before the agency."[400] The agency's decision must be "justified by the rulemaking record."[401] Further, "its reasoned analysis must consider the alternatives that are within the ambit of the existing policy."[402] To the extent the agency considers costs-benefits analysis, such analysis must

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[394] 42 U.S.C. § 7607(d)(9)(A); 5 U.S.C. § 706(2)(A).

[395] 42 U.S.C. § 7607(d)(3).

[396] 42 U.S.C. § 7607(d)(6)(C), (7)(B).

[397] *FCC v. Prometheus Radio Project*, 592 U.S. 414, 423 (2021). *See also* generally *FDA v. Wages & White Lion Invs., L.L.C.*, 604 U.S. 542, 567–569 (2025) (citing *Encino Motorcars, L.L.C. v. Navarro*, 579 U. S. 211, 221–222 (2016); *FCC v. Fox Television Stations, Inc.*, 556 U. S. 502, 515 (2009); *Motor Vehicle Mfrs. Ass'n of United States, Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)).

[398] *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins. Co.*, 463 U.S. 29, 43 (1983) (quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962)).

[399] *Id.*

[400] *Id*.

[401] *Id.*

[402] *Dep't of Homeland Sec. v. Regents of the Univ. of Cal.*, 591 U.S. 1, 30 (2020).

be reasonable.[403] When departing from prior positions, the agency must further provide "a reasoned explanation … for disregarding facts and circumstances that underlay or were engendered by the prior policy," including "serious reliance interests."[404]

EPA's proposal rightly acknowledges, in theory, the importance of exercising agency authority in a reasonable manner that, among other things, accounts for reliance interests engendered by a decade-and-a-half of vehicle GHG regulation.[405] Regardless of the basis of the proposed repeal—including EPA's allegation that the standards repeal is compelled by the repeal of the endangerment finding—it remains the agency's duty to engage in reasoned decisionmaking and to comply with the statutory procedures for altering its standards

The agency's contrary suggestion that alleged legal defects in the endangerment finding automatically allow the agency to delete decades of GHG regulations is wrong for three reasons. First, EPA's proposed repeal of the Endangerment Finding is severely flawed. That proposal contradicts binding precedents, statutory text, and voluminous scientific and technical evidence. Such a deeply flawed and contested premise cannot insulate the agency from engaging in reasoned decisionmaking on logically downstream actions, such as revisions to the vehicle standards. To the contrary, the agency's attempts to circumvent *stare decisis*[406]—albeit without explicitly notifying the public that it is actually doing so[407]—necessarily involve the consideration of factual and pragmatic concerns, such as "workability" of the prior interpretation and "reliance."[408] And the agency's novel and poorly founded scientific determinations that conflict with prior determinations require it not merely to address technical and scientific issues

[403] *See Window Covering Mfrs. Ass'n v. Consumer Prod. Safety Comm'n*, 82 F.4th 1273, 1288 (D.C. Cir. 2023) ("'an unreasonable assessment of social costs and benefits' can render a rule arbitrary and capricious" (citing *Thompson v. Clark*, 741 F.2d 401 (D.C. Cir. 1984)).

[404] *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515–16 (2009).

[405] 90 Fed. Reg. 36297 (August 1, 2025) (EPA "is committed to assessing any such [reliance] interests, determining whether they are significant, and weighing such interests against competing rationales, as required by law"); 90 Fed. Reg. 36298 (August 1, 2025) ("our authority to prescribe and enforce emission standards for GHGs is limited by the language of CAA section 202(a)(2) and must be exercised in a reasonable manner that furthers, rather than burdens, the health and welfare of all Americans"); 90 Fed. Reg. 36311 (August 1, 2025) ("policy considerations may be taken into account, at a minimum, when setting standards in response to an endangerment finding or, as here, when determining whether to maintain standards already established")

[406] This includes not only the agency's blatant attempts to evade and undermine *Massachusetts*' and *CRR*'s core holdings regarding the Endangerment Finding, but also the agency's erroneous interpretation of "requisite technology" that conflict with *NRDC v. EPA* and numerous other precedents described in section VI.C.

[407] Because the proposal purports to comply with existing precedent, any attempt to finalize the rule based on interpretations inconsistent with existing precedent would not be a logical outgrowth of the proposal and would require the agency to repropose and provide a new public comment period.

[408] *Loper Bright Enters. v. Raimondo*, 603 U.S. 369, 407 (2024).

that lie within the agency's judgment, but to adduce a "more detailed justification" than if it were writing on a blank slate.[409]

Second, EPA may revise section 202(a)(1) standards only by exercising its judgment "in accordance with the provisions of this section." This means that EPA must demonstrate that it made rational technical and policy judgments regarding statutory factors such as emissions impacts, technological feasibility, lead-time, and costs of compliance.[410]

Third, even putting aside the specific facts of this proposal, the agency must always engage in reasoned decisionmaking when taking final action.[411] Even where the agency purports to identify a legally binding interpretation of the statute, the agency nonetheless exercises its discretion in several ways.[412] Absent a clear-cut legal mandate and date-certain deadline, [413] the agency's choice to conduct a rulemaking and the timing of that rulemaking entail agency discretion.[414] The agency exercises discretion over the rule's scope.[415] The substantive contents of an agency rulemaking are "always" reviewable under the arbitrary and capricious standard for reasoned decisionmaking.[416] Even the agency's legal positions may entail discretionary choices,

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[409] *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009).

[410] 42 U.S.C. § 7521(a)(1) (authorizing EPA to "from time to time revise" the standards "in accordance with the provisions of this section"), (a)(2) (requiring consideration of lead-time, feasibility, and compliance costs for "[a]ny regulation prescribed under paragraph (1) of this subsection (and any revision thereof)"), (a)(4); cf. also 42 U.S.C. § 7521(a)(3)(B)(i), (b)(1)(C). See also generally Massachusetts v. EPA, 549 U.S. 497, 533 (2007) (finding that EPA possesses "significant latitude as to the manner, timing, content, and coordination of its regulations" under section 202(a)(1)).

[411] 2 USCA § 7607(d)(9) (applying arbitrary and capricious review "[i]n the case of review of *any* action of the Administrator to which this subsection applies" (emphasis added)); 5 U.S.C. § 706(2)(A).

[412] *See Am. Rd. & Transp. Builders Ass'n v. EPA*, 865 F. Supp. 2d 72, 82 (D.C. Cir. 2012) (rejecting petitioners' claim that agency action to "bring its regulations into conformity with statutory law" is a nondiscretionary duty).

[413] Here, there is no date-certain deadline for the rulemaking. 42 U.S.C. § 7521(a)(1) (authorizing the Administrator to "from time to time revise" the emission standards).

[414] *See Sierra Club v. Thomas*, 828 F.2d 783, 791 (D.C. Cir. 1987). Conversely, courts review agency denials of rulemaking petitions under a deferential standard, often deferring to the agency's decision on non-legal bases, such as how the agency wants to prioritize its limited resources. *See Alon Refin. Krotz Springs, Inc. v. EPA*, 936 F.3d 628, 648 (D.C. Cir. 2019); *WildEarth Guardians v. EPA.*, 751 F.3d 649, 655 (D.C. Cir. 2014).

[415] *See Taylor v. FAA*, 895 F.3d 56, 68 (D.C. Cir. 2018) (citing *Mobil Oil Expl. & Producing Se. Inc. v. United Distrib. Cos.*, 498 U.S. 211, 230–31 (1991)) ("'An agency enjoys broad discretion in determining how best to handle related, yet discrete, issues in terms of . . . priorities' and need 'not solve every problem before it in the same proceeding.'"); *Alon Refin. Krotz Springs, Inc. v. EPA*, 936 F.3d 628, 659 (D.C. Cir. 2019) (the agency's "discretion properly includes judgments about the scope of rulemakings and when to relegate ancillary issues to separate proceedings"); *cf. also Nat'l Biodiesel Bd. v. EPA*, 843 F.3d 1010, 1017 (D.C. Cir. 2016) (noting that the reopener doctrine exception to the statute of limitations only applies when the agency itself chooses to reexamine its prior policy).

[416] *Confederated Tribes of the Grand Ronde Cmty. of Or. v. Jewell*, 830 F.3d 552, 559 (D.C. Cir. 2016) ("agency action is always subject to arbitrary and capricious review under the APA"); *Bradley Mining Co.*

such as where the statute delegates discretion to the agency, or where the interpretation depends upon factual and policy judgments, like EPA's views regarding climate science or the availability of requisite technology.[417] Further, any agency change in position must "observ[e] procedure required by law,"[418] which includes the change-in-position doctrine articulated in *Fox* and related cases.[419] Where the change relates to a legal interpretation, additional considerations may inform the agency's decisionmaking, including the *stare decisis* factors that require evaluation of factual and pragmatic concerns such as "workability" of the prior interpretation and "reliance"[420]; as well as the factors for review of agency interpretations set forth by *Loper Bright*, such as "the thoroughness evident in [the agency's] consideration, the validity of its reasoning, its consistency with earlier and later pronouncements, and all those factors which give it power to persuade."[421]

In sum, EPA's duty to engage in reasoned decisionmaking extends to its entire action, including all rationales given for its proposal. EPA's proposal fails to engage in reasoned decisionmaking and is arbitrary and capricious.

B. EPA has failed to explain its departure from relevant National Academy of Science studies.

When reversing a policy, as EPA proposes to do so here, EPA must provide a "more detailed justification than would suffice for a new policy written on a blank slate" if the "new policy rests upon factual findings that contradict those which underlay its prior policy." *FCC v. Fox Television Stations, Inc.*, 556 U.S. 503, 515 (2009). With such a consequential decision, a "reasoned explanation is needed for disregarding facts and circumstances that underlay … the prior policy." *Id*. at 516. Anything less would be arbitrary and capricious; but EPA's proposal falls woefully short of that requirement. The original endangerment finding was based on decades of research based on assessments by hundreds of scientists and synthesized into National Climate Assessments and IPCC reports. As commenters note in their EF Repeal Comments, EPA has failed to provide sufficient information to counter the scientific facts that the 2009

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v. EPA, 972 F.2d 1356, 1359 (D.C. Cir. 1992) ("As always, because the decision results from a rulemaking procedure, the arbitrary and capricious standard of review of the Administrative Procedure Act applies."); *see also* 42 U.S.C. § 7607(d)(9)(A) ("In the case of review of *any action* of the Administrator to which this subsection applies, the court may reverse *any such action* found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law" (emphasis added)); *see also* 5 U.S.C. § 706(2)(A) ("The reviewing court shall . . . hold unlawful and set aside agency action, findings, and conclusions found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law").

[417] *See Loper Bright*, 603 U.S. at 402 (noting the relevance of "factual premises within [the agency's] expertise" in informing the legal interpretation).

[418] 42 U.S.C. § 7607(d)(9)(D); 5 U.S.C. § 706(2)(D).

[419] *FCC v. Fox Television Stations*, *Inc.*, 556 U. S. 502, 515 (2009).

[420] *Loper Bright*, 603 U.S. at 407.

[421] *Loper Bright*, 603 U.S. at 370 (citing *Skidmore v. Swift*, 323 U.S. 134, 140 (1944)).

endangerment finding relied on. See EF Comment VI. (outlining EPA's failure to engage with peer-reviewed assessments on the effects of climate change).

Nor has EPA addressed the findings regarding endangerment in later actions, including 2010 and 2022 denials of petitions to reconsider the 2009 finding, as well as the vehicle GHG standards. Those findings provided significant additional scientific and technical evidence regarding endangerment, beyond what the agency considered in the 2009 finding.[422] EPA's attempts to undermine the endangerment finding are thus incomplete and, even on the agency's own terms, do not provide a sufficient basis for repealing the vehicle GHG standards.

In addition to the scientific studies that underpinned EPA's endangerment finding, EPA has also failed to explain its departure from numerous National Academies of Science ("NAS") studies that have underpinned its subsequent vehicle greenhouse gas standards since the 2009 endangerment finding. EPA's failure to engage with these studies is especially egregious since, under the Clean Air Act, Congress accorded special import to the views of the National Academies of Science ("NAS") in informing public comment for Clean Air Act section 307(d) rulemakings. Clean Air Act section 307(d)(3) requires EPA proposals to "set forth or summarize and provide a reference to any pertinent findings, recommendations, and comments by . . . the National Academy of Sciences, and, if the proposal differs in any important respect from any of these recommendations, an explanation of the reasons for such differences." 42 U.S.C. § 7607(d)(3). EPA's proposed repeal of the GHG standards neither explains its departure from these previously relied upon studies, nor does EPA even mention them. Among others, these studies include:

- Institute of Medicine, National Academy of Sciences, and National Academy of Engineering, *Policy Implications of Greenhouse Warming: Mitigation, Adaptation, and the Science Base* (1992), https://doi.org/10.17226/1605. Cited in the 2010 Light Duty Vehicle GHG Gas Emissions and Corporate Average Fuel Economy Standards, 75 Fed. Reg. 25327; and in 2017 and Later Model Year Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards ("2012 GHG Light Duty Standards"), 77 Fed. Reg. 62963, for the proposition that more fuel efficient a vehicle is, the less fuel a car burns, and therefore, the less CO2 it emits.

- National Research Council, *Advancing the Science of Climate Change* (2010), https://doi.org/10.17226/12782. Cited in Phase 1 GHG Standards for Medium- and Heavy-Duty Vehicles ("Phase 1"), 76 Fed. Reg. 57295, for its conclusion that "climate change is occurring, is caused largely by human activities, and poses significant risks for—and in many cases is already affecting—a broad range of human and natural systems." *Id.* The rule noted that the assessment "represents another independent and critical inquiry of the state of climate change science, separate and apart from the previous IPCC and USGCRP assessments." *Id.*

[422] *See*, *e.g.*, 89 Fed. Reg. 27862 & 27844 (noting that "scientific assessments continue to be released that further advance our understanding of the climate system and the impacts that GHGs have on public health and welfare both for current and future generations" and collecting numerous authorities).

- National Research Council, *Climate Stabilization Targets: Emissions, Concentrations, and Impacts over Decades to Millennia* (2011), https://doi.org/10.17226/12877. Cited in GHG Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2, 81 Fed. Reg. 73486, as part of a list of additional major, peer-reviewed, scientific assessments on the science of climate change. EPA noted that it had "reviewed these new assessments and finds that the improved understanding of the climate system they present further strengthens the case that GHG emissions endanger public health and welfare." *Id.* In particular, EPA cited NRC's conclusion that "emission reduction[] choices made today matter in determining impacts experienced not just over the next few decades, but in the coming centuries and millennia." *Id.* citing *Climate Stabilization Targets*, p. 3.

- National Academies of Sciences, Engineering, and Medicine, *Attribution of Extreme Weather Events in the Context of Climate Change* (2016), https://doi.org/10.17226/21852. Cited in Multi-Pollutant Emission Standards for MY 2027 and Later Light-Duty and Medium-Duty Vehicles as a study that has "advance[d] our understanding of the climate system and the impacts that GHGs have on public health and welfare both for current and future generations. 89 Fed. Reg. 27862; *see also*, Phase 3 Heavy-Duty GHG Emission Standards Rule, 89 Fed. Reg. 29763.

- National Academies of Sciences, Engineering, and Medicine. 2017. *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide* (2017), https://doi.org/10.17226/24651. Cited in Multi-Pollutant Emission Standards for MY 2027 and Later Light-Duty and Medium-Duty Vehicles as a study that has "advance[d] our understanding of the climate system and the impacts that GHGs have on public health and welfare both for current and future generations." 89 Fed. Reg. 27862; *see also*, Phase 3 Heavy-Duty GHG Emission Standards Rule, 89 Fed. Reg. 29763. EPA also used this study in order to estimate the climate benefits of GHG emission reductions from this rule. 89 Fed. Reg. 28115.

- National Academies of Sciences, Engineering, and Medicine. 2019. *Climate Change and Ecosystems* (2019), https://doi.org/10.17226/25504. Cited in Multi-Pollutant Emission Standards for MY 2027 and Later Light-Duty and Medium-Duty Vehicles as a study that has "advance[d] our understanding of the climate system and the impacts that GHGs have on public health and welfare both for current and future generations. 89 Fed. Reg 27862; *see also*, Phase 3 Heavy-Duty GHG Emission Standards Rule, 89 Fed. Reg. 29763.

- National Research Council, *America's Climate Choices* (2011), https://doi.org/10.17226/12781. Cited in Multi-Pollutant Emission Standards for MY 2027 and Later Light-Duty and Medium-Duty Vehicles for its conclusion that "less-affluent, traditionally marginalized and predominantly non-White communities can be especially vulnerable to climate change impacts because they tend to have limited resources for adaption, are more dependent on climate-sensitive resources such as local water and food supplies or have less access to social and information resources." 89 Fed. Reg. 28132.

- National Academies of Sciences, Engineering, and Medicine, *Assessment of Technologies for Improving Light-Duty Vehicle Fuel Economy 2025–2035* (2021) https://doi.org/10.17226/26092. Cited in Multi-Pollutant Emission Standards for MY 2027 and Later Light-Duty and Medium-Duty Vehicles for its conclusions on the importance of battery durability for zero- and near-zero emission vehicles, and on how fuel consumption affects consumers purchase decisions. 89 Fed. Reg. 27968, 28121.

Furthermore, NAS has recently issued a report on the *Effects of Human-Caused Greenhouse Gas Emissions on U.S. Climate, Health, and Welfare* in response to EPA's proposal to rescind the 2009 Endangerment Finding. The report concludes that "EPA's 2009 finding that the human-caused emissions of greenhouse gases threaten human health and welfare was accurate, has stood the test of time, and is now reinforced by even stronger evidence."[423] Because EPA must summarize and respond to those NAS recommendations in any final rule, 42 U.S.C. § 7607(d)(3), (d)(6)(A), the comment period must allow the public time to review that study and take it into account in their comments. Agencies have previously deferred comment periods to allow the NAS to complete relevant studies. *See, e.g.*, 61 Fed. Reg. 28560, 28560–28561 (June 5, 1996) (delaying comment period until after relevant NAS study was completed, then reopening proposal and providing an additional 60 days to comment); 45 Fed. Reg. 16438 (March 13, 1980) (deferring rulemaking until completion of relevant NAS study that would "aid the Coast Guard in making further decisions on these dockets"). As a result of this new report, EPA should extend the comment period by an additional 60 days from September 17th, or until Monday, November 17, 2025, to allow the public sufficient time to review the NAS study and account for it in public comments, consistent with Clean Air Act section 307(d)(3).

C. EPA has failed to reasonably consider relevant factors and considered irrelevant factors.

EPA asserts authority to repeal the GHG standards pursuant to section 202(a)(1).[424] As explained in section VI, EPA's repeal is contrary to law for several reasons. Furthermore, EPA's exercise of section 202(a)(1) authority must be "in accordance with the provisions of this section," especially section 202(a)(1)–(2), and must consider the statutory factors and other relevant factors. The agency's failure to reasonably consider these factors renders its proposal arbitrary and capricious.

Section 202(a)(1)–(2) specifies two sets of statutory factors. First, section 202(a)(1) authorizes EPA to prescribe and revise "standards applicable to the emission of any air pollutant" from classes of motor vehicles, for which EPA has made an endangerment finding. In prescribing and revising such standards, EPA must naturally consider the emission standards themselves and

[423] National Academies of Sciences, Engineering, and Medicine. *Effects of Human-Caused Greenhouse Gas Emissions on U.S. Climate, Health, and Welfare*. (2025) https://doi.org/10.17226/29239. *See also*, Commenters' EF Comments Section IX.D. for a discussion on EPA's failure to incorporate the best science in its proposal.

[424] 90 Fed. Reg. 36266 ("The statutory authority for this proposed action is the same as that relied upon in the prior actions at issue: CAA section 202(a)(1) . . .")

the resulting emission reductions.[425] Second, section 202(a)(2) requires EPA to consider the feasibility of the requisite technology to achieve the emission standards within the lead-time provided, including the costs of compliance to regulated entities.

As explained in section VI, EPA asserts three different sets of legal rationales for repealing the standards: the repeal of the Endangerment Finding, the lack of requisite technology, and reduced fleet turnover. In section VII.C.i, we show that none of EPA's stated rationales reasonably consider the statutory factors for standards revision in section 202(a)(1)–(2), and therefore all are arbitrary and capricious.

In setting, section 202(a)(1) standards, EPA has historically also evaluated a wide range of additional factors, including relevant purchaser-related factors (such as purchaser acceptance, vehicle suitability, up-front vehicle costs, charging and refueling infrastructure availability and costs, fuel costs, maintenance and repair expenses, total costs of ownership, and payback period), vehicle sales impacts (such as pre-low, low-buy, and fleet turnover), global competitiveness of the United States and national security, regulatory certainty to support investments in clean vehicles, oil conservation and energy security, grid reliability, employment impacts, vehicle safety, environmental justice, and net social benefits.[426]

As we explain in section VII.C.ii, EPA has also failed to reasonably evaluate—or consider at all—these additional relevant factors. EPA's proposal thus arbitrarily ignores important aspects of the problem and fails to acknowledge, much less explain, deviations from the agency's historical practice. Specifically, under EPA's first two rationales for repealing the standards (the repeal of the Endangerment Finding and the lack of requisite technology), EPA does not consider these factors at all. Under EPA's third rationale for repealing the standards (reduced fleet turnover), the agency considers some of these factors—particularly some factors related to purchasers and fleet turnover—but does so unreasonably. Under this rationale as well, EPA inexplicably fails to consider the other discretionary factors it has historically found relevant. For all three rationales, EPA presents net benefits estimates, only to disclaim reliance on

[425] *See, e.g.*, 89 Fed. Reg. 28105 (describing "the statutory factors" as "including the emissions impacts of the standards and the feasibility of the standards (including cost of compliance in light of available lead time)"); 81 Fed. Reg. 73494 (citing 76 Fed. Reg. 57129–30) ("the critical statutory factors of emission reductions, cost, and lead time").

[426] *See* 2024 LMDV Rule RTC 296–97 (listing the "kinds of technical and policy judgments" that EPA has historically made in its vehicle GHG rules and collecting past rulemaking authorities). *See generally* 89 FR 27842 (2024 LMDV preamble), 89 Fed. Reg. 29440 (2024 HDP3 preamble), 2024 LMDV Rule RIA, 2024 HDP3 Rule RIA, 2024 LMDV Rule RTC, 2024 HDP3 Rule RTC.

its own draft Regulatory Impacts Analysis (RIA) that calculates those estimates. In any event, EPA's draft RIA is arbitrary and capricious.[427, 428]

Finally, EPA asserts that the 2024 election presents an independent basis for the entire proposal. As explained in section VII.C.iii, while a change in administration can produce new policy choices, it does not suffice to justify repealing these existing regulations and does not excuse the agency from complying with statutory procedures or engaging in reasoned decisionmaking.

i. EPA has failed to reasonably consider the statutory factors.

Despite proposing to repeal the GHG standards, the agency does not attempt to quantify or monetize GHG emissions impacts. Nor does the agency quantify or monetize criteria or air toxics pollutant impacts, despite the evident overlap in vehicle technology to control such emissions and GHGs. While the proposal briefly mentions the impacts of GHG standards on compliance costs, it fails to quantify those costs, or to make new technical findings regarding costs or technological feasibility.

The virtual absence of EPA technical analysis of the statutory factors is in stark contrast with prior rules, such as the 2024 Rules, which devoted thousands of pages and complex modeling in considering these critical statutory factors. The agency nowhere explains its choice to largely forego consideration of the statutory factors or its deviation from past rules. The agency does make general assertions about intervening developments, such as Congress's repeal of certain preemption waivers for California emission standards and of IRA tax credits, alleging that they increase the costs of the GHG standards. While EPA assesses the impacts of those developments in its draft RIA, it disclaims reliance on the RIA for justifying the rule. In any event, the RIA often reaches conclusions at odds with EPA's proposal, for instance by finding that compliance costs have remained roughly the same as in the 2024 Rules, and suffers from myriad other fatal defects. These defects render the agency's proposal arbitrary and capricious and not in accordance with law.

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[427] EPA's rulemaking is also arbitrary because it paradoxically disclaims reliance on the RIA while summarizing the RIA's results in the preamble. *See* 90 Fed. Reg. 36326–27. The agency does not suggest that the preamble summaries of the RIA do not form part of the administrative record. The agency is thus internally inconsistent in simultaneously claiming it does not rely on the RIA while appearing to in fact rely on the RIA. Regardless, as explained in the text and later in this section VII.C, the RIA is severely flawed.

[428] Our comments regarding the factual and technical defects in EPA's proposal are corroborated by separate comment letters, including those filed by Environmental Defense Fund, Natural Resources Defense Council, and other signatories to this letter, as well as comments filed by other groups. Those comments further demonstrate why EPA's proposal is arbitrary and capricious.

a. EPA has failed to consider GHG emissions reductions.

The text, operation, and purpose of section 202(a)(1) reflect the importance Congress gave to emissions reductions and their associated impacts on public health and welfare.[429] GHGs are the pollutants directly regulated by the standards EPA is proposing to repeal, making their consideration of principal importance in any rule revising the standards. At a minimum, EPA must consider the changes in regulated (or in this case, deregulated) emissions resulting from the rule.

GHG emissions impacts resulting from the rulemaking are readily quantifiable. The agency has consistently quantified GHG emissions impacts from all eight of its section 202(a) motor vehicle GHG emission standards rules, applying its own state-of-the-art modeling tools. For example, in the 2024 Rules,[430] EPA projected cumulative GHG emissions reductions of 8.2 billion metric tons CO2e.[431] By any account this is a massive figure, exceeding *total* US GHG emissions in 2023 and more than quadruple 2023 US transportation sector emissions.[432] EPA has

[429] *See* 89 Fed. Reg. 28096 (acknowledging the "importance" of reducing emissions and "the primary purpose of CAA section 202 to reduce the threat posed to human health and the environment by air pollution"); 81 Fed. Reg. 73494 (citing 76 Fed. Reg. 57129–30) (describing "emissions reductions" as one of "the critical statutory factors").

[430] Our comment generally points to the 2024 Rules to demonstrate EPA's prior consideration of statutory and other factors, as they are the most recent GHG rules. But we emphasize that EPA's proposal deviates not only from the 2024 Rules, but from its prior GHG rules generally (with the limited exception of the 2020 Rule in certain aspects). See EPA, *Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light- Duty and Medium-Duty Vehicles: Final Rule*, 89 Fed. Reg. 27842 (Apr. 18, 2024); EPA, *Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards: Final Rule*, 86 Fed. Reg. 74434 (Dec. 30, 2021); EPA, *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks: Final Rule*, 85 Fed. Reg. 24174 (Apr. 30, 2020); EPA, *2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards: Final Rule*, 77 Fed. Reg. 62624 (Oct. 15, 2012); EPA, *Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule*, 75 Fed. Reg. 25324 (May 7, 2010); EPA, *Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles—Phase 3: Final Rule*, 89 Fed. Reg. 29440 (Apr. 22, 2024); EPA, *Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2: Final Rule*, 81 Fed. Reg. 73478 (Oct. 25, 2016); EPA, *Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles: Final Rule*, 76 Fed. Reg. 57106 (Sept. 15, 2011).

[431] *See* 89 Fed. Reg. 27858 (7.2 billion metric tons for the 2024 LMDV Rule); 89 Fed. Reg. 29672 (1.025 billion metric tons for the 2024 HPD3 Rule). This reflects the cumulative net impacts from vehicular and upstream refinery and EGU emissions. The statute does not require consideration of upstream emissions, however, such consideration is appropriate in evaluating the impacts of regulation on air pollutant emissions. When looking solely at vehicular emissions, the cumulative impacts are 8.9 billion metric tons.

[432] *See* EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2023, 2-37-38, EPA 430-R-25-003, https://library.edf.org/AssetLink/145ky510ew61fk1tq5c2klp5kq5yp33j.pdf.

also projected similarly massive GHG emissions reductions from past rulemakings.[433] Prior rules also explained the impacts of such emissions on public health and welfare in detail.[434]

Despite the availability of tools to quantify GHG emissions, EPA fails to do so. This failure is inconsistent with the text and purpose section 202(a)(1), and neglects to consider an important aspect of the problem. Moreover, EPA fails to acknowledge or explain its choice to abandon prior methodologies for quantifying GHG emissions impacts from the 2024 Rules, rendering its change in position arbitrary and capricious. Oddly enough, EPA's RIA, which the agency disclaims reliance on,[435] uses the modeling tools from the 2024 Rules for most net benefits scenarios. The agency's internal inconsistency—applying the 2024 Rules modeling tools to calculate net benefits, but failing to apply the exact same tools to quantify emissions changes—is also arbitrary and capricious.

Indeed, our organizations' review of the administrative docket indicates that the agency actually did project GHG emissions changes, only to nonetheless fail to consider them in its proposal and instead hiding those numbers from the public in an obscure docket memorandum that went unmentioned in either the preamble or the draft RIA.[436] Although EPA does not provide any narrative explanation of the information contained in this docket memorandum, it appears to find that the repeal of the light and medium duty GHG standards alone would increase CO2e emissions by 7.7 billion metric tons through 2055.[437] By any standard, this is a truly massive amount of GHGs: for instance, it exceeds *all* US GHG emissions in 2023 (6.2 billion metric tons).[438] Considering that EPA is repealing a GHG program, the agency has absolutely no excuse for hiding its own calculations of the colossal GHG harms created by its proposal.

Monetizing GHG impacts can provide further valuable insight into the benefits of reducing GHGs on public health and welfare, as well as the relative cost and benefits of controlling vehicular GHGs.[439] EPA and the US Government have historically monetized GHG emissions through use of the social-cost of GHGs (SC-GHG). All eight past motor vehicle GHG

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[433] *See* 2024 LMDV Rule RTC 305, 2024 HPD3 RTC 111 (listing GHG emissions reductions for prior EPA GHG rules).

[434] *See, e.g.*, 89 Fed. Reg. 27861–64; *see also* section II of this comment.

[435] 90 Fed. Reg. 36326 ("The EPA has not relied upon any aspect of the draft RIA as justification for this proposed rulemaking.").

[436] *See* EPA, Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards Draft and Regulatory Impact Analysis 26 (July 2025), EPA-420-D-25-003 (noting that EPA's net benefits figures "are estimated using the same assumptions, methods and tools as used in the analyses for the LMDV and HDP GHG Phase 3 rules, including . . . emission estimates") [hereinafter DRIA]; EPA, Vehicle Rule LD/MD/HD Physical Effects, EPA-HQ-OAR-2025-0194-0047 (listing "GHG inventory impacts" and "Non-GHG inventory impacts").

[437] *See* EPA, Vehicle Rule LD/MD/HD Physical Effects 7.

[438] *See* EPA, Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990-2023 at 2-1, EPA 430-R-25-003, https://library.edf.org/AssetLink/145ky510ew61fk1tq5c2klp5kq5yp33j.pdf.

[439] *See* EF Comments; Institute for Policy Integrity at New York University School of Law Comment.

rules have applied this approach. For example, the 2024 Rules estimated monetized climate benefits of at least $1.8 trillion.[440]

Despite the continued availability of SC-GHG as a tool for monetizing climate benefits, EPA neglects to do so. No monetized climate benefits are presented in the rulemaking, nor is there any explanation for why EPA no longer monetizes GHG benefits. EPA thus arbitrarily fails to consider this important aspect of the problem and to explain its change in position. While EPA relies on the draft CWG Report in repealing the Endangerment Finding, it does not specifically rely on or even discuss the Report's conclusions on the SC-GHG. As we explain in our EF Comment, those conclusions and the process through which they were reached are in any event erroneous and unreliable, and the SC-GHG remains an appropriate tool for estimating the monetary value of GHG emission benefits.[441]

EPA does present a cursory discussion of emissions in its analysis of "requisite technology." In that context, the agency asserts that eliminating total US light, medium, and heavy duty emissions[442] would not "measurably impact GHG concentrations in the atmosphere or the rate of global climate change."[443] This discussion, however, says nothing about the emissions changes resulting from the proposed rule, and thus does not satisfy the statutory requirement to assess emission reduction benefits. In any event, this reasoning is both based on an erroneous reading of the statute,[444] and arbitrary and capricious.[445]

EPA's draft RIA does not rescue the proposal from its unlawful failure to consider emissions changes. As noted, the agency disclaims any reliance on its RIA, meaning that the RIA cannot satisfy EPA's duty to consider statutory factors. But even taking the RIA on its own terms, it presents no quantification or monetization of GHG impacts. Indeed, the first five of the seven RIA scenarios do not even discuss GHGs, and the sparse and conclusory statements in last two scenarios (in the so-called "revealed preferences" model) are arbitrary and capricious, as we explain later this in section VI.C.

Updated analyses of GHG emissions impacts demonstrate that the proposal would increase GHG emissions by billions of metric tons, which translates into enormous monetized societal harms. We summarize these analyses in section II of this comment, with more detailed discussion present in separate comments filed by EDF and NRDC. EPA's failure to consider emissions changes—much less such massive and catastrophic emissions harms—is arbitrary and

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[440] 89 Fed. Reg. 27860; 89 Fed. Reg. 29457 (presenting "the climate benefits associated with the SC-GHG under the 2-percent near-term Ramsey discount rate" in 2022 dollars); *see also* 89 Fed. Reg. 28091-92 ("the estimates are a partial accounting of climate change impacts and will therefore tend to be underestimates of the marginal benefits of abatement").

[441] *See* EF Comments; Institute for Policy Integrity at New York University School of Law Comment.

[442] EPA also makes analogous arguments with respect to just light and medium duty emissions, and just heavy duty emissions.

[443] 90 Fed. Reg. 36311.

[444] *See* Comment VI.

[445] *See* EF Comments.

capricious. Further, given the significant increase in emissions that would result from the repeal of the existing GHG emission standards, EPA failed to adequately explain its conclusion that maintaining the GHG emission standards on balance harms public health and welfare.

b. EPA's claim that onroad emissions do not measurably impact climate change is both irrelevant and incorrect.

EPA does present a cursory discussion of GHG emissions in its analysis of "requisite technology." In that context, the agency asserts that eliminating total US light, medium, and heavy duty GHG emissions[446] would not "measurably impact GHG concentrations in the atmosphere or the rate of global climate change."[447] This is because, per EPA, "[g]lobal warming trends from 1979 to 2023, the period with the best available data, were determined to a precision (or margin of error) of plus or minus 15 percent total. An estimated 3 percent reduction in global warming trends is well below the scientific threshold for measurability and is not a reliable measure for regulatory purposes."[448]

This discussion, however, says nothing about the emissions changes resulting from the proposed rule, and thus does not satisfy the statutory requirement to assess emission reduction benefits. EPA's argument is also arbitrary and capricious on its own terms.[449] First, EPA fails to explain why this so-called "precision (or margin of error)" in undefined global warming trends is relevant at all. As we show in section VI, this line of argument is based on an erroneous reading of the statute, and thus entirely irrelevant. But even putting aside the fatal legal defect, EPA has failed to explain why it now abandons its longstanding metrics for assessing the efficacy of GHG regulation—such as emissions impacts and monetized benefits using the social cost of carbon—in favor of this heretofore undefined and unheard of metric. EPA's unexplained deviation from past practice is arbitrary and capricious.

Second, EPA does not explain how it calculated the 15 percent margin of error figure, beyond citing the draft CWG Report. That report in turn states in full, "For the period 1979-2023, which has the most extensive global coverage of a variety of weather data types, warming trends are determined to a precision of about ±15 percent, so the impact of reducing the rate of global warming by eliminating U.S. vehicle CO2 emissions would be far below the limits of measurability."[450] No additional citations or analytical support are offered.

Neither EPA nor DOE disclose which dataset(s) were used, how the trend and its uncertainty were calculated, whether the data were filtered for natural variability, or what

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[446] EPA also makes analogous arguments with respect to just light and medium duty emissions, and just heavy duty emissions.

[447] 90 Fed. Reg. 36311.

[448] 90 Fed. Reg. 36311.

[449] *See also* Andrew E. Dessler & Robert E. Kopp, A Critical Review of Impacts of Greenhouse Gas Emissions on the U.S. Climate 40418 ("Dessler & Kopp"), Docket ID No. DOE-HQ-2025-0207, https://drive.google.com/file/d/1PwAR8I9YYmPhbQ6CRekHkroJGMbjbX7l/view.

[450] CWG Report at 130.

confidence level was applied, even though such information is routinely provided by scientists working on these issues.[451] Indeed, it is not even clear what metric is being measured: for example, do "warming trends" refer to global mean surface temperatures? Rate of changes in such temperatures? Record high temperatures? Rates of sea ice loss? Other? The public has no idea, because EPA does not tell us, nor does DOE. Without that information, it is impossible to reproduce the ±15 % margin estimate. This methodological black-box renders EPA's analysis procedurally arbitrary.

Further, while DOE asserts the period 1979-2023 "has the most extensive global coverage of a variety of weather data types," DOE does not explain why only those years provide data of sufficient quality to support the analysis here. Indeed, datasets such as NASA Goddard's Global Surface Temperature Analysis (GISTEMP) "provide[] near global coverage with complete land coverage since 1960."[452] Because longer time-series statistically reduce the noise, extending the analysis further back can reduce the margin of error, as we show in the next paragraph. EPA's choice to rely only on DOE's analysis of 1979-2023 period data for making this critical regulatory determination cherry picks from the available data and is thus arbitrary and capricious.

The scientific literature on global surface mean temperature changes shows different figures from EPA. For example, a recent peer-reviewed study in the leading scientific journal *Nature* assessed four different climate data sets including GISTEMP. The authors determined an average 50-year warming rate of "0.18 ± 0.01 °C/decade," which translates to a margin of error of approximately 6%,[453] or less than half of EPA's reported margin. EPA's figure—to the extent it also purports to assess global mean surface temperatures—may simply be the wrong number.

In sum, EPA has proposed to elevate this single, arbitrary metric—not contained in section 202 or anywhere else in the Clean Air Act, unknown as to what it is actually measuring, opaque as to its derivation, inconsistent with the scientific literature, heretofore unrecognized as even relevant to vehicle emissions control, based on one sentence without any citations found in a non-peer reviewed draft report created by an illegitimate advisory committee—into a critical threshold for overturning a 15 year old regulatory program and undermining billions of dollars of reliance interests. To say the least, the agency's proposal is arbitrary and capricious.

Third, EPA does not explain why it chooses to compare the 15 percent margin of error to the effect of US onroad vehicle emissions on warming trends, which the agency calculates as 3 percent. This 3 percent figure is based on a claim by CWG Report that "U.S. cars and light trucks

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[451] *See, e.g.*, Samset, B.H., Zhou, C., Fuglestvedt, J.S. et al., *Steady global surface warming from 1973 to 2022 but increased warming rate after 1990*, Commc'ns Earth & Env't 4 (2023), https://doi.org/10.1038/s43247-023-01061-4.

[452] Nathan Lenssen & National Center for Atmospheric Research Staff, *The Climate Data Guide: Global surface temperature data: GISTEMP: NASA Goddard Institute for Space Studies (GISS) Surface Temperature Analysis*, https://climatedataguide.ucar.edu/climate-data/global-surface-temperature-data-gistemp-nasa-goddard-institute-space-studies-giss.

[453] Samset, B.H., Zhou, C., Fuglestvedt, J.S. et al., *Steady global surface warming from 1973 to 2022 but increased warming rate after 1990*, Commc'ns Earth & Env't 4 (2023), https://doi.org/10.1038/s43247-023-01061-4. Unlike EPA, the authors of this study carefully explained their datasets and methodologies.

account for only 3.0 percent of global energy-related CO2 emissions," and eliminating all such emissions "would also reduce the overall warming trend by at most about 3 percent."[454] Neither EPA nor DOE provides any citation or analysis as to how the figure of 3 percent reduction on global warming trends was calculated. EPA similarly asserts a figure of 0.7 percent reduction in global warming trends associated with the heavy-duty standards, without any supporting analysis.[455]

The agency does not explain why it newly gives dispositive weight to the percentage of US vehicles emissions relative to global energy-use emissions. For example, the agency could have chosen different metrics to evaluate the size of US vehicle emissions, such as the proportion of US vehicle emissions to global vehicle emissions, or the proportion of US vehicle emissions to US total anthropogenic emissions, or the relative size of US vehicle emissions to that of vehicle emissions from any other country, and so forth. The agency could also have chosen, as it did in the 2009 Endangerment Finding, to balance its consideration of a variety of relative emissions metrics.[456] In assessing the need for regulation in prior standard-setting actions, the agency has also placed weight on the relative size of US vehicle emissions to US anthropogenic emissions, as well as the relative size of US onroad emissions to US vehicle emissions. For example, in assessing the "Need for Continued Emissions Reductions Under 202(a) of the Clean Air Act" in the 2024 LMDV Rule, EPA noted that "[t]he transportation sector is the largest U.S. source of GHG emissions, representing 29 percent of total GHG emissions. Within the transportation sector, light-duty vehicles are the largest contributor, at 58 percent, and thus comprise 16.5 percent of total U.S. GHG emissions, even before considering the contribution of medium-duty Class 2b and 3 vehicles which are also included under this rule."[457] EPA fails to explain why these prior regulations should be repealed based on a single, different metric of source category emissions

Fourth, EPA's approach misapplies statistics. Even were EPA's figures for the margin of error and relative US vehicle emissions correct, EPA conflates the statistical detectability of a global climate change metric with the materiality of reducing GHG emissions. These are two entirely different issues, and EPA's conflation is a red herring. To provide an analogy, we know that the US Federal debt has been increasing over time. Suppose for purposes of this example that it increases on average by $1 trillion per year. However, in any given year, the debt growth may be ±$150 billion, that is a ±15% margin of error from $1 trillion. This is due to events like recessions, interest rates changes, new appropriations legislation, and so forth. Now suppose the

[454] 90 Fed. Reg. 36311 (citing CWG Report 130).

[455] 90 Fed. Reg. 36312.

[456] *See* 74 Fed. Reg. 66539–40 (considering emissions from CAA section 202(a)(1) "(1) [a]s a share of total current global aggregate emissions of the well-mixed greenhouse gases; and (2) as a share of total current U.S. aggregate emissions of the well-mixed greenhouse gases," and making further comparisons such as "[i]f CAA section 202(a) source categories' emissions of well-mixed greenhouse gas were ranked against total well-mixed greenhouse gas emissions for entire countries, CAA section 202(a) source category emissions would rank behind only China, the United States as a whole, Russia, and India, and would rank ahead of Japan, Brazil, Germany and every other country in the world").

[457] 89 Fed. Reg. 27843, 27844; *see also*, *e.g.*, 86 Fed. Reg. 74490 (similar statements in the 2021 LD GHG Rule).

IRS develops a program to cut tax fraud that generates $30 billion in extra government revenues per year. EPA would argue that because $30 billion is less than $150 billion, it is not possible to cleanly detect the effect of the IRS program on the Federal deficit as the year-to-year fiscal noise swamps it. However, the $30 billion unquestionably reduces the annual deficit and in turn the size of the debt. In fact, $30 billion would be a significant amount of money to generate through a single program of a single agency and make a highly meaningful contribution to curbing Federal debt. In the same way, reducing GHG emissions by 3% is real and incredibly impactful.[458] Or as the Supreme Court once observed, "[j]udged by any standard, U. S. motor-vehicle emissions make a meaningful contribution to greenhouse gas concentrations."[459]

EPA's (and DOE's) flawed analysis can also be understood in this way. EPA suggests that a 3% decrease in global emissions "corresponds to an approximate 3 percent reduction in predicted warming trends."[460] Suppose we visualize global average surface temperatures trends (or any other global warming metric) as a line surrounded by a band on both sides to reflect the 15% margin of error. Now suppose we lower the trend by 3 percent to reflect the emissions decrease. There would be overlap between the new band and the old band, but they would certainly not be the same. In fact, the emissions decreases would have shifted the entire band downward, corresponding to reduced climate change.

To put it another way, it may be that at any given point in time, we may have (for simplicity's sake) 85–115 units of global warming, with an average of 100. If we lower this by 3,[461] we would have 82–112 units of global warming, with an average of 97. While we are unsure as to the actual measurement within that range of uncertainty, the two ranges are plainly different. Perhaps we started at 115, in which case a reduction of 3 would lead us to 112. Or perhaps we started at 90, in which case a reduction of 3 would lead to 87. In every scenario, the emissions decrease would have a real impact on global warming.

To put the issue in simple terms, we may not know—as EPA highlights—with perfect precision how fast the planet is warming. But we know with certainty that it is warming. We also

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[458] Reducing emissions by a portion of that 3% as required by EPA's prior GHG rules is also meaningful, as we show above in our discussion of GHG emissions reductions.

[459] *Massachusetts v. EPA*, 549 U.S. 497, 525 (2007). *See also generally* Institute for Policy Integrity, *The Scale of Contribution: Vehicles U.S. Vehicles Are By Far the World's Largest Source of Transportation Pollution* 1 (July 2025), https://policyintegrity.org/files/publications/Vehicle_Sector_GHG_Contribution_Issue_Brief_v2.pdf (noting "that the U.S. on-road vehicle sector, comprising cars, trucks, motorcycles, and buses, contributes tremendous levels of greenhouse gas emissions annually. The U.S vehicle sector is the highest source of transportation emissions globally—in fact, over the last fifty years, U.S. vehicles have emitted more greenhouse gases than the vehicles in the next nine highest-emitting countries *combined*." (emphasis added)).

[460] 90 Fed. Reg. 36311.

[461] A 3% reduction is a geometric change, which is not the same as reduction of 3, an arithmetic change. However, for purposes of making the math easier, we have provided an arithmetic example. We could do the same with a geometric example, with a range of 85–115 shifting instead to 82.45 to 111.55. For purposes of this example, they demonstrate the same concept: a physical change that falls within the range of measurement uncertainty is nonetheless real and meaningful.

know, based on our basic physical understanding of how the world works, that every ton of anthropogenic GHG emissions contributes to that warming.[462] In turn every increment of warming is associated with increasing and catastrophic risks of climate change.[463] Conversely, every ton of emissions reduction reduces warming and the risks of climate change. That is the consensus of climate scientists, and it was recently affirmed as recently as this month by an authoritative study from the National Academies of Science,[464] a body whose expertise Congress recognized in enacting the Clean Air Act.[465] That there may be uncertainty in the rate of change of global average temperatures is irrelevant to the question of whether reducing emissions mitigates endangerment to human health and welfare. EPA's misguided use of statistics does nothing to change these facts.[466]

Fifth, EPA's choice of metrics misapprehends the cumulative nature of GHG pollution and mitigation. Regulating motor vehicle emissions is not just about temporarily reducing emissions by 3% (or some portion thereof), but rather persistent reductions in GHG emissions over time. GHGs, moreover, reside in the atmosphere and contribute to warming over long periods. Thus, a persistent reduction in emissions from the US onroad sector, even if modest relative to total anthropogenic emissions, can have significant impacts on climate change and its impacts. This is borne out in the monetized GHG values discussed above. In terms of EPA's statistics, this means that even if the impact of a 3% change in emissions on global average temperatures in that year cannot be detected, persistent reductions of 3% will likely be detectable

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[462] IPCC, *2021 Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* 28 (2021), https://doi.org/10.1017/9781009157896.001 ("Every tonne of CO_2 emissions adds to global warming").

[463] *Id.* at 15 "(With every additional increment of global warming, changes in extremes continue to become larger."); *see also* U.S. Global Change Research Program, *Fifth National Climate Assessment*: *Chapter 1.Overview* 1-5 (2023), https://toolkit.climate.gov/sites/default/files/2025-07/NCA5_Ch1_Overview.pdf ("Each additional increment of warming is expected to lead to more damage and greater economic losses compared to previous increments of warming, while the risk of catastrophic or unforeseen consequences also increases. However, this also means that each increment of warming that the world avoids—through actions that cut emissions or remove carbon dioxide (CO2) from the atmosphere—reduces the risks and harmful impacts of climate change.").

[464] *See* National Academies of Sciences, Engineering, and Medicine, *Effects of Human-Caused Greenhouse Gas Emissions on U.S. Climate, Health, and Welfare* 38 (2025), https://doi.org/10.17226/29239 ("As long as global emissions of CO2 stay above zero, concentrations and radiative forcing will continue to increase and global temperature will increase roughly in proportion to cumulative CO2 (i.e., each additional ton emitted adds an increment more to temperature increase) with small contributions from other long-lived gases including N2O and F-gases. As global emissions of GHGs are spread across all nations, a collective effort at reducing emissions is required to limit future warming.").

[465] *See* 42 U.S.C. § 7607(d)(3).

[466] *See* Dessler & Kopp 416 ("even if we cannot directly measure the temperature response of a particular policy, that doesn't mean we cannot estimate its impact. Given our high-confidence understanding of the physics of the climate system, fine tuned over the last 200 years, we can make good estimates of the impacts of any CO2-reduction policy. While there is uncertainty in any calculation like this, the uncertainty is bounded and the bounds do not include zero.")

over long time periods. To go back to the Federal debt example, it may be that a $30 billion dollar revenue increase in one year cannot be detected amid other annual changes to the debt. But an annual $30 billion revenue increase for 35 years—or over $1 trillion—is likely detectable.[467]

Sixth, EPA fails to explain why it newly conditions GHG regulation on meeting this atextual standard for measurable impacts when it has never taken the same approach to criteria or air toxics regulation. As we explain in section VI, the chain of causation between onroad emissions of, for instance, NOx and ambient ozone pollution is also complicated, and subject to myriad confounding factors, ranging from other anthropogenic and natural emissions, meteorological factors affecting secondary ozone formation, and measurement uncertainties. Yet EPA does not identify (and we are not aware of) a single prior vehicle emissions rule that conditioned NOx (or any other pollutant) regulation on a statistical comparison between margins of error in historical ambient air quality data and the relative contribution of the regulated classes of motor vehicles.[468] To the contrary, EPA has routinely regulated other emissions from mobile sources based on far smaller contributions to the air pollution problem than GHGs. For example, during the Bush administration, EPA regulated criteria pollutant emission from motorcycles based on findings that, inter alia, "highway motorcycles are significant contributors to mobile-source air pollution, currently accounting for 0.6 percent of mobile-source hydrocarbon (HC) emissions, 0.1 percent of mobile-source oxides of nitrogen (NO_x) emissions, and less than 0.1 percent of mobile-source particulate matter (PM) emissions."[469] EPA fails to explain why GHGs should be singled out for special treatment: why it is appropriate to deregulate GHGs because they do not meet an irrelevant statistical test that the agency has not applied to any other pollutant.

Seventh, even were it hypothetically necessary to precisely quantify the impacts of reducing vehicle emissions on global warming trends as a prerequisite to regulation,[470] EPA's approach of looking to measurable impacts is technically unsound. As explained above, global warming, like other air pollution problems, results from diverse conditions. The real world is generally not a laboratory experiment where we can change only a single condition and measure its impacts. Rather, given the large number of conditions, it becomes necessary to model the impacts of changing a condition–such as US onroad emissions. And in fact, climate models are

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[467] *See* Dessler & Kopp at 416 ("temperature is related to cumulative CO2 emissions. Thus, comparing one individual year of U.S. motor vehicles is an irrelevant argument to the impact that it has on climate. The U.S. would not stop motor vehicle emissions for one year only from a regulation; this regulation would have a time-compounding impact on emissions over multiple years.")

[468] As we explain in section VI, such an approach would also be contrary to law.

[469] 69 Fed. Reg. 2399. *See generally* Institute for Policy Integrity, *Exhaustive Precedent: EPA's Requirement to Regulate Motor Vehicle Emissions that Contribute to Dangerous Air Pollution*, at i (2025), https://policyintegrity.org/files/publications/Exhaustive_Precedent_Issue_Brief_vF.pdf (collecting authorities and concluding that "When regulating under Section 202 and other provisions of the Clean Air Act with nearly identical contribution language, EPA has repeatedly found a source to 'contribute to' dangerous pollution even when these percentages were significantly smaller than they are for motor vehicles.").

[470] As we explain in section VI, such an exercise is not required by statute.

able to quantify the physical climate impacts of reducing GHG emissions. Indeed, EPA's own statement that the light- and medium-duty GHG standards would result in "an approximate 3 percent reduction in predicted warming trends" concedes the agency's own belief that the GHG standards do in fact mitigate global warming and that such impacts can be quantitatively assessed.[471]

EPA has actually modeled the physical climate impacts of its prior GHG rules. In the 2010 Light-Duty GHG Rule, EPA applied a widely-used and peer-reviewed model to estimate the physical climate effects of its regulations and identified "small, but quantifiable, reductions in atmospheric CO2 concentrations, projected global mean surface temperature and sea level resulting from this action, across all climate sensitivities. As a result of the emission reductions from this action, the atmospheric CO2 concentration is projected to be reduced by an average of 2.9 parts per million (ppm), the global mean temperature is projected to be reduced by approximately 0.006-0.015°C by 2100, and global mean sea level rise is projected to be reduced by approximately 0.06-0.14cm by 2100."[472] EPA also concluded that "[t]hough the magnitude of the avoided climate change projected here is small, these reductions would represent a reduction in the adverse risks associated with climate change . . . across all climate sensitivities," and the resulting "differences in climate effects (CO2 concentration, temperature, sea-level rise, ocean pH) . . . yield results that are repeatable and consistent within the modeling frameworks used."[473]

To the extent the agency now believes quantifying physical climate effects is necessary, EPA does not explain why its prior approach to doing so is wrong. The agency does not explain why it is appropriate to discount the agency's prior quantification of physical climate effects based on a widely-used and peer-reviewed model with a heretofore unheard of approach based on a single uncited sentence in a draft report. Nor does the agency even discuss the variety of updated modeling tools that now exist for assessing the physical climate effects of different emissions scenarios.[474] In fact, EPA does not appear to even be aware of its prior conclusions that reducing GHG emissions from US onroad vehicles would quantifiably impact the rate of global climate change.

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[471] 90 Fed. Reg. 36311.

[472] 75 Fed. Reg. 25495 (applying the Model for the Assessment of Greenhouse Gas Induced Climate Change (MAGICC)).

[473] 75 Fed. Reg. 25496; *see also, e.g.*, 77 Fed. Reg. 62897–98 (performing similar physical climate effects analysis for the 2012 LD GHG Rule), 62898 (noting that although the physical effects appear small "no one rule will prevent climate change by itself" and that adverse commenters' claim such reductions are not meaningful, "if used globally, would effectively lead to a tragedy of the commons, whereby no country or source category would be accountable for contributing to the global problem of climate change, and nobody would take action as the problem persists and worsens.").

[474] Smith, C., Z.R.J. Nicholls, K. Armour, W. Collins, P. Forster, M. Meinshausen, M.D. Palmer, and M. Watanabe, *The Earth's Energy Budget, Climate Feedbacks and Climate Sensitivity Supplementary Material* 10 (2021), https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter07_SM.pdf (surveying various climate models and their performance).

c. EPA failed to consider criteria and air toxic pollutant emission reductions.

Although the GHG standards do not directly control criteria or air toxic pollutants, vehicle manufacturers are likely to meet the standards by adopting clean vehicle technologies that simultaneously reduce such emissions. These emissions reductions are relevant considerations under the statute, particularly as EPA continues to acknowledge the importance of reducing criteria and toxic pollutants from motor vehicles[475] and the paramount importance Congress placed on reducing such emissions.[476]

In general, GHG emissions control technologies may also lead to reductions in criteria and air toxics pollutants. For example, improvements to internal combustion engine efficiency and vehicle aerodynamics also result in fewer criteria pollutant emissions. Zero-emission vehicles, as their name suggests, emit no tailpipe emissions at all. In addition, while upstream emissions are not part of the statutory inquiry,[477] GHG emissions controls generally reduce fuel consumption and associated upstream refinery emissions. Some GHG controls, namely powertrain electrification, also increase electricity consumption and associated upstream EGU emissions.

Criteria and toxics emissions impacts are readily quantifiable, as the agency has done over all eight of its prior motor vehicle GHG rulemakings. Similarly, the public health benefits of reducing criteria and toxic emissions are well established, and EPA has consistently evaluated and monetized certain benefits. For example, in the 2024 HDP3 Rule,[478] EPA projected decreases in vehicular NOx, PM2.5, VOC, and SO2 emissions in 2055, with especially large decreases in

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[475] 90 Fed. Reg. 36314 ("we are not proposing to reopen or substantively revise emission standards or compliance provisions related to criteria pollutant exhaust emissions . . . air toxic emissions, or evaporative and refueling emissions").

[476] *See, e.g.*, 42 U.S.C. § 7521(a)(3)(A), (b), (g)–(i), (l). *Cf. also* 42 U.S.C. § 7521(a)(4) (requiring consideration of whether emissions control technologies "causes, increases, reduces, or eliminates emissions of any unregulated pollutants"). To the extent EPA does not view criteria and air toxics emissions as statutory factors in relation to a GHG rule, such emissions nonetheless remain relevant factors and important aspects of the problem.

[477] *See* 2024 LMDV Rule RTC 3266–67 (noting that under the Act, emissions from other non-vehicular sectors are not the relevant "emissions" from "new motor vehicles" under section 202(a)(1), and stating that "EPA interprets the Clean Air Act as directing EPA to consider regulation of emissions for each sector according to the applicable statutory requirements for each program.").

[478] EPA also assessed criteria and air toxics pollutant benefits in the 2024 LMDV Rule. However, that rule regulated both GHG and non-GHG emissions, and the agency did not conduct a separate analysis of criteria and air toxics impacts for the GHG portion of the rule. Thus, in this discussion, we focus on the 2024 HDP3 Rule, as it is the most recent vehicle GHG rule to consider the criteria and air toxics benefits of GHG regulation. These benefits, however, are not unique to that rule and reflect the general benefits of GHG technologies in simultaneously reducing other emissions. *See, e.g.*, 86 Fed. Reg. 74443 (2021 Light-Duty GHG Rule) ("Between $8 and $19 billion of the total benefits through 2050 are attributable to reduced emissions of non-GHG pollutants, primarily those that contribute to ambient concentrations of smaller particulate matter ($PM_{2.5}$).").

vehicular NOx of greater than 54,000 tons in that year.[479] Considering the cumulative impacts of vehicular, refinery, and EGU emissions in 2055, EPA also found that emissions of NOx, VOC, and SO2 would decrease. While cumulative PM2.5 direct emissions would marginally increase, ambient PM2.5 would decrease considerably due to lower NOx and SO2 emissions. EPA also estimated changes in vehicular air toxics emissions, noting reductions of 1–3% across various air toxics such as benzene and formaldehyde.[480] Finally, the agency estimated PM2.5 health benefits of $1.9 billion in 2055, with $6.5 billion total benefits across the life of the program.[481] EPA found that the non-GHG emissions reductions "provide important health benefits to the 72 million people living near truck routes and even more broadly over the longer term."[482]

EPA's proposal fails to quantify or monetize any criteria or air toxic pollutant benefits. Thus, as with its failure to quantify or monetize GHG emissions, EPA both fails to consider an important aspect of the problem and to explain its change in position.

EPA's proposal does discuss impacts on criteria and air toxics pollutants in two places. First, in preamble section V.D, EPA articulates its third rationale for repealing the standards: GHG standards allegedly reduce fleet turnover, inducing older and more polluting vehicles to remain on the road longer, which EPA claims "may be harming air quality."[483] While EPA is correct that newer vehicles tend to be cleaner—thanks to emissions standards like the ones EPA is now proposing to repeal—EPA fails to demonstrate that the criteria and air toxics impacts associated with allegedly slower fleet turnover outweigh the beneficial impacts associated with advanced GHG pollution control technologies. In fact, EPA presents no quantitative analysis whatsoever of criteria and air toxics emissions impacts. Its conclusion that the proposed rule may improve air quality is therefore unsupported and not rationally explained. EPA's fleet turnover allegations are also arbitrary and capricious, as we detail later in this section of our comment.

EPA also briefly discusses criteria and air toxics pollutants in its response to Executive Order 13,045 "Protection of Children From Environmental Health Risks and Safety Risks." EPA alleges "the possibility that this proposal could marginally impact emissions of criteria pollutants and air toxics," but "the EPA 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, including on children, because the EPA anticipates that the impacts of repealing GHG emission regulations would have only marginal and incidental impacts on the emission of non-GHG air pollutants."[484] This is because, according to EPA, the "[p]otential health impacts of such [non-GHG] air

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[479] *See* 89 Fed. Reg. 29455 tab. ES-5 & ES-6. The year 2055 approximates when most of the regulated fleet will consist of vehicles subject to the Phase 3 standards due to fleet turnover.

[480] *See* 89 Fed. Reg. 29724 tab. IX-4.

[481] *See* 89 Fed. Reg. 29457 tab. ES-8 (2022 dollars, PV 2%). These benefits significantly underestimate the non-GHG emissions benefits of the rule, as they do not include, for example, ozone or air toxics health benefits or non-human health benefits such as improved visibility and benefits to animals and plants.

[482] 89 Fed. Reg. 29593.

[483] 90 Fed. Reg. 36313.

[484] 90 Fed. Reg. 36328.

pollutants will continue to be controlled through direct emissions limits and a number of other programs that target regional and national air quality, including the NAAQS program."[485] EPA's conclusory allegations have no basis, are unsupported by any analysis, and contradict the agency's prior analyses, including in the 2024 HDP3 Rule described above, which demonstrate the criteria benefits of the GHG standards. Moreover, EPA's claimed reliance on its criteria pollutant programs is unavailing. As we show in section VIII, EPA is proposing to repeal in this very rulemaking the battery durability, monitoring, and warranty requirements that support the integrity of the criteria pollutant program. And EPA elsewhere has signaled its desires to eviscerate a wide swath of Clean Air Act programs, including those protecting against criteria pollutant emissions from motor vehicles.[486]

As with GHG emissions, EPA's RIA does not rescue the proposal from its unlawful failure to consider criteria and air toxic emissions changes. The agency disclaims any reliance on its RIA, meaning that the RIA cannot satisfy EPA's duty to consider statutory factors. The first five of the seven RIA scenarios do not appear to quantify or monetize criteria and air toxic emissions changes. The final two scenarios, under the revealed preferences model, estimate that the proposal would accrue $2.2–4.2 billion in annualized PM emissions costs over 2027–55.[487] Nonetheless, the agency does not present quantified PM or other criteria or air toxics emission changes in the RIA. EPA's methodology for ascertaining PM benefits is also murky, relies on faulty assumptions, and is otherwise arbitrary and capricious, as we show later in this section VI.C. Despite these defects, the RIA's assessment of large PM related harms further indicates that EPA's failure to consider such harms in its proposal is arbitrary and capricious.[488]

Updated analyses of criteria and air toxics emissions impacts demonstrate that the proposal would increase such emissions by vast quantities. The resulting ambient PM2.5 increases would cause large, monetized public health harms. This monetization represents an underestimate of the societal value of emissions harms as they do not account for increased

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[485] *Id*.

[486] *See, e.g.*, *EPA Announces Action to Implement POTUS's Termination of Biden-Harris Electric Vehicle Mandate*, EPA (Mar. 2025), https://www.epa.gov/newsreleases/epa-announces-action-implement-potuss-termination-biden-harris-electric-vehicle (noting that "EPA is reevaluating the other parts of the Biden EPA's problematic 'Clean Trucks Plan.' This includes the 2022 Heavy-Duty Nitrous Oxide (NOx) rule . . . "); EPA Launches Biggest Deregulatory Action in U.S. History, EPA (Mar. 2025), https://www.epa.gov/newsreleases/epa-launches-biggest-deregulatory-action-us-history (announcing the rollback of numerous criteria and air toxics programs).

[487] DRIA 37.

[488] As with GHG impacts, EPA does also present criteria pollutant impacts in a memorandum to the docket. *See* EPA, Vehicle Rule LD/MD/HD Physical Effects 7-13, EPA-HQ-OAR-2025-0194-0047 (listing non-GHG inventory impacts). It is not entirely clear what this docket memorandum purports to show, but it appears to reflect annual changes in vehicular and upstream criteria pollutants, as well as annual changes in vehicular air toxics pollutants, associated with the repeal of the light and medium duty standards. Overall, the memorandum appears to find cumulative increases in NOx, NMOG, PM2.5, CO, and several air toxics, through 2055, and cumulative decreases in SOx. However, the agency does not refer to this memorandum in its preamble or RIA, and we only discovered this memorandum through scouring the docket. EPA provides no explanation as to why it apparently calculated criteria and air toxics impacts, only to hide them in an obscure docket memorandum.

ambient ozone pollution,[489] or non-health harms, such as losses to visibility or harm to wildlife and vegetation.[490] We summarize these analyses in section II of this comment, with more detailed discussion present in separate comments filed by EDF and NRDC. EPA's failure to consider emissions changes—much less such massive and deadly emissions harms—is arbitrary and capricious.

d. EPA failed to consider the technological feasibility and lead-time of GHG pollution control technologies.

In section 202(a)(2), Congress required EPA to consider technological feasibility, lead-time, and compliance costs, in "any revision" of "[a]ny regulation prescribed under [section 202(a)(1)]." As we explained in section VI.C, section 202(a) embodies a technology-based approach to regulation, under which standards are set based on the availability and costs of pollution control technologies. Analysis of these critical statutory factors has accordingly occupied the bulk of EPA's motor vehicle emission rules. Recognizing the related but distinct inquiries of feasibility and lead-time versus costs, we focus in this section on feasibility and lead-time generally and, in the following section, on costs.

EPA's proposal offers little discussion of technological feasibility and costs. In preamble V.A-B, EPA asserts that no requisite technology exists for motor vehicles to remove GHGs from the ambient air. EPA's assertion is bereft of any technical analysis, including of the carbon dioxide removal technologies in which the US and US companies have made significant investments,[491] and their potential application in motor vehicles.[492] More importantly, as explained in section VI.C of our comments, the statute does not require a vehicle to remove pollutants from the ambient air to qualify as a "requisite technology." EPA's interpretation is

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[489] Ground-level ozone can form when volatile organic chemicals combine with NOx or SO2, usually in the presence of heat and sunlight. *See What is Ozone?*, EPA, https://www.epa.gov/ozone-pollution-and-your-patients-health/what-ozone (last updated June 2025). Some areas of the country, such as the South Coast Air Basin in California, rely on limiting NOx emissions to reduce ozone formation. *See Air Quality Management Plan (AQMP)*, South Coast AQMD, https://www.aqmd.gov/home/air-quality/air-quality-management-plans/air-quality-mgt-plan.

[490] *See* National Parks Conservation Association, Driving Dirty Air: How U.S. Vehicle Pollution Harms Our National Park (Aug. 12, 2025), https://www.npca.org/resources/4235-driving-dirty-air-how-u-s-vehicle-pollution-harms-our-national-parks (assessing the harms that onroad vehicle pollution causes to US national parks, including to visibility, ecosystems, wildlife, and vegetation).

[491] *See, e.g.*, Katie Lebling & Angela Anderson, World Resources Institute, Next generation of US policies to remove carbon pollution from the atmosphere (March 2025), https://files.wri.org/d8/s3fs-public/2025-03/next-generation-us-policies-remove-carbon-pollution-atmosphere.pdf?VersionId=dHrstmr30UGUHQ4JNuHW4C2A43DQPNTW; *Carbon Capture Utilisation and Storage*, International Energy Agency (IEA), https://www.iea.org/energy-system/carbon-capture-utilisation-and-storage; *Carbon Dioxide Removal*, DOE, https://www.energy.gov/fecm/carbon-dioxide-removal.

[492] *See ZEM*, TU Ecomotive, https://www.tuecomotive.nl/our-family/zem/ (describing a prototype automobile that applies direct air capture technology to a motor vehicle); *Sustainable Electric Car That Cleans The Air While Driving — Zem*, Clean Technica, https://cleantechnica.com/2022/07/23/sustainable-electric-car-that-cleans-the-air-while-driving-zem/.

contrary to the plain text of the statute, and decades of judicial and administrative precedent, under which section 202(a)(2) requires the agency to assess the technological feasibility of the emission standards within the lead-time provided. But EPA provides no analysis of the feasibility of the standards it proposes to repeal, although the agency does not seem to contest the continued availability of GHG control technologies such as hybrid and zero-emission vehicles and their efficacy in complying with the GHG emission standards.[493]

By contrast, each prior vehicle GHG rule conducted robust and voluminous analysis of this critical statutory factor. For example, the 2024 Rules devoted thousands of pages of text, supported by comprehensive technical modeling, to evaluating technological feasibility and lead-time.[494] EPA catalogued the availability of diverse GHG control technologies for light, medium, and heavy duty vehicles, including:

- Advanced internal combustion engine efficiency technologies, e.g., low-rolling resistance tires, improved aerodynamics, and improved engine technologies;
- Fuel-switching to cleaner fuels with internal combustion engines, e.g., natural gas vehicles and hydrogen internal combustion vehicles (principally for heavy-duty);
- Fuel-switching to electricity and powertrain electrification, e.g., mild hybrids, strong hybrids, plug-in hybrid electric vehicles, battery electric vehicles, and fuel cell electric vehicles.

For each class and type of vehicle, EPA carefully assessed whether certain technologies were suitable for their intended use, for example, recognizing that heavy-duty long-haul tractors have significantly different weight and daily mileage demands compared to vocational vehicles.

EPA carefully reviewed a wide range of technological and market developments that supported the availability of such technologies, such as technological advances in battery chemistries, expanding production and sales of zero-emission vehicles and their components in the US and abroad, vehicle manufacturer commitments to meet corporate zero-emission vehicle targets, as well as policy developments such as the National Electric Vehicle Infrastructure (NEVI) program, Inflation Reduction Act (IRA) tax credits, and State clean transportation programs.

EPA's standards did not mandate the production of any specific technology mix either legally or factually. Rather, the agency found that vehicle manufacturers could comply with the standards by adopting a range of advanced pollution control technologies, and that the lead-time provided allowed manufacturers to comply within their typical product planning and refresh timeframes. EPA generally found the most cost-effective compliance pathway to be increased powertrain electrification, specifically increased production of battery electric vehicles, due to their ability to completely prevent GHG emissions as well as the technological and market developments supporting their increased adoption. EPA also evaluated the supply chain of

[493] *See* 90 Fed. Reg. 36306 (alleging that "our GHG emission standards mandate an increased and faster shift from gasoline fueled vehicles to electric vehicles on the theory that a substantial reduction in GHG emissions is necessary to address global climate change concerns").

[494] *See generally* 89 Fed. Reg. 27842 (2024 LMDV preamble), 89 Fed. Reg. 29440 (2024 HDP3 preamble), 2024 LMDV Rule RIA, 2024 HDP3 Rule RIA.

materials to produce such technologies—including batteries, battery components, and critical minerals—concluding that such materials were sufficiently available within the lead-time provided.[495]

Despite the voluminous technical findings contained in the 2024 Rules and earlier GHG rules, EPA proposes its repeal without saying anything about them. While EPA generally discusses intervening developments—such as Congress's sunsetting of certain IRA tax credits or the disapproval of preemption waivers for California's Advanced Clean Cars II and Advanced Clean Trucks programs—in another context,[496] EPA nowhere asserts that those developments mean the GHG pollution control technology no longer exists or cannot be deployed within the lead-time provided. Nor does EPA account, as it must, for new technological and market developments since the 2024 Rules that affect feasibility. As such, the agency ignores this statutory factor, neglects a key aspect of the problem, and does an inexplicable about-face.

EPA's DRIA cannot cure its proposal's defects with respect to technological feasibility, as the agency disclaims reliance on its DRIA. The DRIA does assert that in the absence of certain IRA tax credits regulated manufacturers could not comply with model year 2032 standards for light-duty and model years 2027 and later standards for heavy-duty.[497] But EPA's model is riddled with mistakes, such as assuming the repeal of the 45X advanced manufacturing tax credit, even when Congress chose not to repeal that credit,[498] assuming the end of the 2024 LMDV Rule's criteria standards when those remain in place,[499] and conflating increased payback time for heavy-duty vehicles with noncompliance.[500] And even taking EPA's modeling on its own terms, it does not show that compliance is infeasible, as the agency itself concedes with statements like "[i]n reality, noncompliance in 2032 would likely not play out as the model projects."[501] Rather, EPA assumes a specific relationship between purchaser costs (which increase due to reduced tax credits) and EV adoption, further assumes a limited set of manufacturer compliance strategies, and in turn models non-compliance in some years. But this model does not accurately represent reality. For example, as EPA concedes, there are other available compliance strategies the model does not account for, such as increased use of credit banking and trading flexibilities, increased adoption of non-modeled technologies (such as hybrid vehicles for heavy-duty), increased sales of cleaner vehicles and fewer sales of dirtier vehicles, and so forth.[502]

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[495] Although not part of the statutory inquiry, EPA also assessed the infrastructure for charging electric vehicles and refueling hydrogen vehicles. We discuss this further in section VII.C.

[496] See 90 Fed. Reg. 36306–07 (discussing these developments in the context of repealing the Endangerment Finding).

[497] DRIA 28–29.

[498] DRIA 27.

[499] DRIA 26.

[500] DRIA 29.

[501] DRIA 28.

[502] *See* DRIA 28–29.

Our updated assessment of the GHG vehicle technologies demonstrates the continued technological feasibility of the GHG standards within the leadtime provided. We acknowledge recent domestic policy changes related to clean vehicles, including those enumerated by EPA. These include the changing tariff policies directed by President Trump, the One Big Beautiful Bill Act's repeal of certain clean vehicle related tax credits and zero-out of NHTSA CAFE compliance penalties, the NHTSA CAFE and fuel efficiency interpretive rule, the Congressional resolutions purporting to disapprove EPA's grant of preemption waivers for California's Advanced Clean Cars II and Advanced Clean Trucks programs, various challenges to California's Clean Trucks Partnership, as well as this proposal. This Administration's policies have greatly directly undermined clean vehicle investments[503] and reduced clean vehicle production and sales forecasts.[504]

Despite these domestic policy changes, the fundamental technological feasibility of the 2024 Rules and earlier rules remains unchanged. We first discuss light-duty passenger cars and trucks, with a focus on EVs.[505] Since the issuance of the 2024 Rules, manufacturers have continued to produce—and consumers and businesses have continued to purchase—clean vehicles in record numbers. The first half of 2025 saw a record 740,000 light-duty EV purchases in the US.[506] A record 5.7 million EVs are on the road today.[507] And despite reduced forecasts since the change in Administration, analysts still project significant and increasing US EV sales going forward.[508]

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[503] *See $22 Billion in Clean Energy Projects Cancelled in First Half of 2025 $6.7 Billion Cancelled in June* (July 24, 2024), https://e2.org/releases/june-25-clean-economy-works/.

[504] *See* BloombergNEF, *Global Electric Vehicle Sales Set for Record-Breaking Year, Even as US Market Slows Sharply, BloombergNEF Finds*, https://about.bnef.com/insights/clean-transport/global-electric-vehicle-sales-set-for-record-breaking-year-even-as-us-market-slows-sharply-bloombergnef-finds/ ("Despite the global growth of EV sales, BNEF has reduced its long-term and short-term passenger EV adoption outlook for the first time largely due to the various policy changes in the US. The roll-back of federal fuel-economy standards, the phase-out of the EV tax credit and the potential removal of California's ability to set its own air quality standards, result in a notable decline in EV adoption in the US, impacting global adoption rates.").

[505] In this section, EVs include battery electric vehicles, plug-in hybrid electric vehicles, extended range electric vehicles, and fuel-cell electric vehicles. We focus on EVs because manufacturers have chosen EVs as the primary technology for achieving large marginal reductions in GHGs currently and going forward, particularly in the light-duty sector. Other clean vehicles technologies may also be relevant, particularly in the heavy-duty sector. For most applications, EVs also remain the most cost-effective way to reduce vehicular GHG emissions, as we discuss in the subsequent section on costs of compliance.

[506] Argonne National Laboratory, LDV Total Sales of PEV and HEV by Month (updated through June 2025), https://www.anl.gov/sites/www/files/2025-07/Total%20Sales%20for%20Website_June%202025.pdf.

[507] *EV Model Availability and Sales*, Argonne National Laboratory, https://www.anl.gov/ev-facts/model-sales.

[508] *See* Bloomberg NEF, Electric Vehicle Outlook 2025 Executive Summary at 3 & fig. 3.

See also 89 Fed. Reg. 27848–50 (noting that fluctuations in manufacturer EV investments do not necessarily reflect long-term changes in manufacturer intentions, and stating that "[g]iven the

Beyond production numbers, other metrics demonstrate a vibrant and rapidly maturing market. Notably, the number of EV models has increased considerably over the last year, from 113 models in Q1 2024 to 149 models in Q1 2025, an increase over 30% in just a year.[509] These offerings span all market segments, including sports passenger cars, utility vehicles, pickups, and vans. The market players have also diversified considerably, reflecting market maturation.[510]

Consistent with their rapidly increasing EV sales, vehicle manufacturers have made significant commitments to and investments in clean vehicle and related manufacturing, with over $211 billion in announced investments on 230,000 announced jobs.[511] Despite cancelled investments and jobs due to the Administration's policies, the vast majority of these investments remain intact and in many cases factories are already in operation. These multi-billion dollar investments help lock-in significant EV technology development and production over the coming decades. Moreover, nearly all major global automakers, including the major US legacy automakers, have identified EVs as the future of transportation and the core element of their business strategy.[512] Companies, moreover, are making enormous capital investments in the EV technologies of the future, for example, pursuing solid-state batteries that promise dramatic improvements in range and charging speed,[513] developing Extended Range EVs (EREVs) as a new technology for reducing emissions while mitigating range anxiety,[514] and reworking EV production processes to dramatically increase efficiency and decrease costs, as reflected in Ford's recent "Model T moment" for its EV business.[515]

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unprecedented rate and size of recent investment activity in PEV technology, adjustments to previously announced plans would ordinarily be expected to occur, and to date have included both reductions and increases in investment amounts and pacing.").

[509] *Compare* Alliance for Automotive Innovation, Get Connected: Electric Vehicle Quarterly Report 2025 (Q1), https://www.autosinnovate.org/posts/papers-reports/Get%20Connected%20EV%20Quarterly%20Report%202025%20Q1.pdf, *with* Alliance for Automotive Innovation, Get Connected: Electric Vehicle Quarterly Report 2024 (Q1), https://www.autosinnovate.org/posts/papers-reports/Get%20Connected%20EV%20Quarterly%20Report%202024%20Q1.pdf.

[510] *See* Cox Automotive, Electric Vehicle Sales Report Q2 2025, https://www.coxautoinc.com/wp-content/uploads/2025/07/Q2-2025-Kelley-Blue-Book-EV-Sales-Report.pdf.

[511] *See* Blue Green Alliance, EV Jobs Hub https://evjobs.bgafoundation.org/.

[512] Miller, C. "Six Major Automakers Agree to End Gas Car Sales Globally by 2040," Car and Driver (Nov. 10, 2021) https://www.caranddriver.com/news/a38213848/automakers-pledge-end-gas-sales-2040/.

[513] Kothari, "All Current And Upcoming EVs With Solid-State Batteries [Updated]," Inside EVs (Sept. 15, 2025), https://insideevs.com/news/771402/every-solid-state-battery-ev/.

[514] D'Allegro, J. "As EVs stumble, automakers are bringing back a kind of hybrid that promises long range," CNBC (May 30, 2025). https://www.cnbc.com/2025/05/30/automakers-bringing-back-a-kind-of-hybrid-that-promises-long-range-.html

[515] Schreiner, B. "Ford hits the pedal on EV production with $2 billion overhaul of Kentucky plant," AP (Aug. 11, 2025),

https://apnews.com/article/ford-louisville-assembly-plant-electric-vehicles-bde8fee4209176be186e6b4f91252dd2.

Vehicle manufacturers also operate in a highly competitive global environment, with enormous policy and market pressures driving increased EV adoption. Global EV sales are projected to grow by 25% in 2025, with two-thirds of sales in China.[516] Chinese manufacturers are producing EVs at unprecedented scale and cost, with the BYD Seagull EV retailing at less than $8,000, a fraction of the cost of American-made cars.[517] Europe continues to set stringent motor vehicle CO2 standards, with a commitment to all zero-emitting vehicles by 2035.[518] Global economic trends shape both US EV adoption and long-term corporate international and national competitiveness. Within the US, many state and local governments,[519] as well as select Federal policies,[520] continue to actively support EV adoption.

The cost of batteries, one of the principal components of EVs, also continues to decrease precipitously. For example, in 2024, the battery price reached a record low of $115/kWh.[521] Analysts predict further price decreases in the coming years, alongside continued increases in economies of scale and learning.[522] Decreased battery prices will support lower EV prices, further increasing the attractiveness of EV technologies.

Turning to the medium and heavy duty sector, there has been rapid growth in the last few years in overall EV sales, model availability, and supporting infrastructure. Medium- and heavy-duty EV sales grew from less than 60,000 EVs in 2023 to over 120,000 EVs in 2024, a doubling in just one year.[523] While the absolute increase was principally driven by class 2B-3 sales, class

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[516] BNEF, 2025 Electric Vehicle Outlook, Executive Summary, at 1-2.

[517] Johnson, P. "BYD has now sold over 1 million Seagull EVs, the $10,000 electric car that's going global," Electrek (June 18, 2025), https://electrek.co/2025/06/18/byd-seagull-sales-top-1-million-as-10000-ev-goes-global/.

[518] Philip Blenkinsop, *EU Says It Sticks To Zero-Emission Car Path To 2035*, Reuters (March 5, 2025), https://www.reuters.com/business/autos-transportation/eu-sticks-2035-zero-emissions-target-new-cars-2025-03-05/.

[519] *See eg.* NCEL blog, "States Can Lead the Charge on Electric Vehicle Policy," (April 23, 2025). https://www.ncelenviro.org/articles/states-can-lead-the-charge-on-electric-vehicle-policy/

[520] *See eg.* Tax credit 45X

[521] *See* BloombergNEF, Lithium-Ion Battery Pack Prices See Largest Drop Since 2017, Falling to $115 per Kilowatt-Hour: BloombergNEF (Dec. 10, 2024), https://about.bnef.com/insights/commodities/lithium-ion-battery-pack-prices-see-largest-drop-since-2017-falling-to-115-per-kilowatt-hour-bloombergnef/

[522] *See* EDF Comments (discussing a battery costs study conducted by Roush); IEA,

The battery industry has entered a new phase (Mar. 5, 2025) https://www.iea.org/commentaries/the-battery-industry-has-entered-a-new-phase; 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; Forbes, 2025 Energy Predictions: Battery Costs Fall, Energy Storage Booms, Carbon Removal Grows, Feds Pursue Permitting Reform (Jan. 6, 2025), https://www.forbes.com/sites/energyinnovation/2025/01/06/2025-energy-predictions-battery-costs-fall-energy-storage-booms-carbon-removal-grows-feds-pursue-permitting-reform/.

[523] Atlas EVHub, U.S. Market & Policy Update: Medium- and Heavy-Duty Electric Vehicles, https://www.atlasevhub.com/data-stories/u-s-market-policy-update-medium-and-heavy-duty-electric-

4-8 sales also saw a massive surge from under 900 units in 2023 to over 3,400 units in 2024, an increase of nearly 300%. The number of EV models remains strong, at 161 models in 2025, distributed across a range of weight classes and vehicle types. EV sales are also expanding geographically, with California retaining a large share of EV sales, but other states such as Texas and Florida seeing large increases in 2024.

Many vehicle manufacturers remain committed to medium- and heavy-duty electrification in the U.S., despite waning federal support. For example, Isuzu Trucks announced in February that it will build a new $280 million facility in South Carolina that will assemble both battery-powered and combustion vehicles and is expected to employ over 800 people by 2028.[524] U.S. fleets, including Pepsi, Schneider, Amazon and others, are also still committing to electrification because ZEVs drive down costs and increase driver satisfaction.[525]

Recent data show decreases in domestic heavy-duty EV prices in certain vehicle categories, but increases in other categories, even as costs in China and the EU have continued to decrease.[526] These increases do not appear to reflect increasing costs as much as other factors, such a lack of pricing transparency by manufacturers and still limited competition in the US, factors which could be successfully addressed by supportive ZEV policies. ICCT and Energy Innovation find that "Across all major vehicle segments, battery electric HDVs are projected to be cheaper on a per-mile basis than diesel models by 2030 in most states, provided policymakers address the factors currently driving new battery electric HDV prices in the United States above international norms"[527]—including through regulatory frameworks such as the Heavy-Duty Phase 3 Rule that increase heavy-duty ZEV deployment, "accelerate cost reductions and ensure modeled savings become real-world outcomes."[528]

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vehicles/. CALSTART and EDF also track medium and heavy-duty truck deployments. See CALSTART, Zeroing in on Zero-Emission Trucks, https://calstart.org/wp-content/uploads/2025/05/ZIO-ZET-June.pdf; EDF, EDF-Electric Fleet Deployment & Commitment List, https://docs.google.com/spreadsheets/d/1l0m2Do1mjSemrb_DT40YNGou4o2m2Ee-KLSvHC-5vAc/edit?gid=160011816#gid=160011816; EDF, 2024 was another record year for electric truck deployments, proving that the shift to zero-emission is not slowing down, https://blogs.edf.org/energyexchange/2024/11/19/2024-was-another-record-year-for-electric-truck-deployments-proving-that-the-shift-to-zero-emission-is-not-slowing-down/.

[524] Samora, S. Isuzu to establish $280 million commercial EV South Carolina plant," Manufacturing Dive (Feb. 21, 2025), https://www.manufacturingdive.com/news/isuzu-n-series-f-series-commercial-ev-piedmont-south-carolina-plant/740468/ .

[525] https://evchargingsummit.com/blog/top-companies-paving-the-way-in-heavy-duty-ev-fleets/

[526] *See* Yihao Xie and Ray Minjares, Battery electric commercial vehicle pricing in the United States (Sept. 2025), https://theicct.org/wp-content/uploads/2025/09/ID-422-%E2%80%93-BEV-pricing-commercial-vehicles_working-paper_final.pdf.

[527] Chris Busch, Hussein Basma, Mary Francis Swift, and Anish Sinha, DELIVERING AFFORDABILITY The Emerging Cost Advantage of Battery Electric Heavy-Duty Trucks and U.S. Policy Strategies to Unlock Their Full Economic Potential 2 (May 2025).

[528] *Id.* at 42.

Despite this data on US heavy-duty truck pricing, the costs of key heavy-duty EV components, including batteries, fuel cells, and hydrogen storage tanks, continue to decline due greater economies of scale and manufacturer learning. These declines reflect strong economic fundamentals toward increased heavy-duty EV adoption. BNEF projects that truck batteries will cost $213 per kWh in 2025 and drop to $80 per kWh by 2030 and the price of a fuel cell HD truck could fall 20-25% over the same timeframe.[529]

U.S. manufacturers do not operate in isolation, but face global competition. Decreasing prices and increasing deployments in Europe and China generate favorable economic fundamentals in support of lower prices in the US as well. In China, for example, government support, improved battery technology, increased manufacturer competition, declining costs and expanding charging infrastructure are driving significant deployment of heavy-duty EVs. BNEF estimates that electric vans and trucks will make up 19% of the commercial vehicle market in China in 2025 and that share will grow to 46% in 2030.[530] As with light-duty vehicles, these global economic trends shape both US EV adoption and competitiveness.

In sum, regardless of short-term fluctuations in the Administration's policies or the latest EV sales data, our analysis reflects that the long-term economic fundamentals continue to trend toward increasing adoption of EV technologies. Globally, EV costs continue to fall rapidly, driven by learning—particularly with respect to batteries—whereas internal combustion vehicles are already highly optimized after a century of high-volume production and are unlikely to fall as quickly. EVs have fewer moving parts and are thus simpler to manufacture at scale than internal combustion vehicles. Manufacturers have made billions of dollars in long-term capital investments in EV research, development, and manufacturing. Driven by these investments, the portfolio of EV models is multiplying rapidly into every market segment, supporting increased EV adoption across diverse use cases. EVs provide significant synergies with the vehicle industry's shifting focus to software features (like assisted and self-driving cars). EVs have significant total cost of ownership advantages in the long-term, due to savings on expensive gasoline and diesel, as well as reduced maintenance and repair expenses. Finally, global air pollution regulation and global competition are factors supporting EVs, generate zero vehicular tailpipe pollutants, a feat that no ICE vehicle is likely to ever achieve. The above fundamentals provide strong support for the technological feasibility of EVs and their long-term dominance. By extension, these facts highlight the likely benefits to vehicle manufacturers that successfully transition to an EV future, and the risks to those that fail to innovate, a topic we further discuss in VII.C.2.[531]

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[529] BNEF, 2025 Electric Vehicle Outlook, Executive Summary, at 6.

[530] BNEF, 2025 Electric Vehicle Outlook, Executive Summary, at 5.

[531] Even were the agency to credibly find that recent changes in domestic policy or otherwise mean fewer prospective GHG emissions reductions are feasible than EPA projected in the 2024 Rule—a finding which the proposal does not even allege and which we do not believe is supported by the evidence—such a finding would at most support weakening certain future GHG standards, not repealing the entire program. Further, there is no credible feasibility, lead-time, or costs argument in favor of repealing legacy GHG standards that vehicle makers have already complied with, as we explain in the following text.

Because EPA is proposing to repeal all vehicle GHG standards, including standards for past model years, technological feasibility for prior model year standards is also relevant. We find that compliance with prior model year standards has been and continues to be feasible.[532] Over the course of the Federal GHG program, vehicle manufacturers have developed and sold millions of vehicles with GHG pollution control technologies— ranging from advanced vehicle aerodynamics to ICE efficiency improvements to electric powertrains—and the GHG program has successfully catalyzed cutting-edge American innovation in these technologies. The vast majority of vehicles on the road today meet a Federal (or California) GHG standard, and increasing numbers of EVs are being produced and sold that create no tailpipe GHG pollution. This real-world evidence of feasibility is also backed up by quantitative compliance data. Given the multi-year nature of vehicle design cycles as well as EPA's Averaging, Banking, and Trading (ABT) program, regulated companies may overcomply in some years and under-comply in other years, so long as they meet their GHG obligations over time subject to the constraints of the ABT program. Industry-wide, the most updated data shows large banks of excess credits for GHG compliance, reflecting overall historical overcompliance.[533] This demonstrates the feasibility of prior model year standards, and because such credits can be carried forward to satisfy future GHG obligations, also supports the feasibility of prospective standards.

Our analysis demonstrates that electrification and other emission-reducing technologies remain technologically feasible ways of controlling GHG pollution within the lead-time provided. We also find that, despite the policies of this Administration, fundamental market dynamics favor EVs as not only feasible pollution control technologies, but also the economic future of onroad transportation. EPA failed to consider these important facts regarding technological feasibility and the motor vehicle industry, making the agency's proposal inconsistent with the statute and arbitrary and capricious.

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[532] We note that, consistent with the performance-based nature of EPA's GHG standards and the lack of any technological mandate, GHG technologies have often been adopted and deployed at different rates than EPA projected in its standard-setting rules. This, however, does not reflect a lack of feasibility, but rather demonstrates feasibility and cost-effectiveness in light of the flexible nature of EPA's performance-based standards and ABT program. Contrary to what the proposal suggests, EPA's program does not legally or factually mandate the use of any specific GHG control technology, such as battery electric vehicles. See, e.g., 2024 LMDV Rule RTC 312 & nn.215-17.

[533] For light-duty GHG, see EPA, The 2024 EPA Automotive Trends Report Greenhouse Gas Emissions, Fuel Economy, and Technology since 1975, 144, 146 (Nov. 2024), https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P101CUU6.pdf (identifying 2023 final industry-wide light-duty GHG credit balance of 122,977,514 Megagrams and noting that "[a]fter accounting for the use of credits, and the ability to carry forward a deficit, the industry overall does not face any non-compliance issues as of the end of the 2023 model year."). For heavy-duty GHG, see EPA, Addendum to Final Phase 1 EPA Heavy-Duty Vehicle and Engine Greenhouse Gas Emissions Compliance Report (Model Year 2022) 2-5, https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P101A2VS.pdf (for HD GHG vehicle standards, noting that "all manufacturers participating in ABT have generated a positive banked credit balance through model year 2022 in each of the three averaging sets for vehicles"; and for HD GHG engine standards, noting that "[a]ll engine manufacturers except for Ford Motor and Volvo Group have zero or positive credit balances in each of the averaging sets showing their overall compliance to the current Phase 2 program," with a large industry-wide net positive credit balance).

e. EPA failed to consider the costs of compliance

Congress specifically directed EPA to give "appropriate consideration to the cost of compliance" in assessing technological feasibility and lead-time.[534] The statutory costs factor relates to the cost of compliance for the regulated entities: manufacturers of new motor vehicles and new motor vehicle engines. While EPA may also consider costs to consumers and society in its discretion, those costs are not part of the required statutory analysis. The D.C. Circuit and EPA have consistently adhered to this plain text meaning of the statute.[535] EPA's proposal does not contest this longstanding interpretation.

EPA's proposal offers scant discussion of this key statutory factor. Compliance costs appear in the agency's third rationale for repealing the standards, relating to reduced fleet turnover. There, the agency generally asserts the GHG standards increase vehicle technology costs, which purportedly reduces consumers' purchases of new vehicles and fleet turnover.[536] While EPA cites to analyses performed in the 2020 Rule, it offers no updated analysis of the costs of compliance (or of fleet turnover, a topic we address fully later in this section VII.C).

EPA's generalizations are virtually meaningless and fail to constitute consideration, much less "appropriate consideration," of the statutory costs factor. As both Congress and the D.C. Circuit have recognized, any emission standards will create costs for regulated entities.[537] Or conversely, if an emission standard had to create zero costs of compliance to be justified, then no emission standard would pass muster. The statutory question is not whether the regulation creates some costs, but whether EPA has given "appropriate consideration" to such costs in revising the standards. EPA's conclusory discussion fails to do so.

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[534] Section 202(a)(2).

[535] *See, e.g.*, 2024 LMDV Rule RTC 308 & n.105 ("As for consumer costs, the statute does not require consideration of such costs."); *Motor & Equipment Mfrs. Ass'n Inc. v. EPA*, 627 F. 2d 1095, 1118 (D.C. Cir. 1979) ("Section 202's cost of compliance concern, juxtaposed as it is with the requirement that the Administrator provide the requisite lead time to allow technological developments, refers to the economic costs of motor vehicle emission standards and accompanying enforcement procedures. It relates to the timing of a particular emission control regulation rather than to its social implications."); *Int'l Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 640 (D.C. Cir. 1973) ("as long as feasible technology permits the demand for new passenger automobiles to be generally met, the basic requirements of the Act would be satisfied, even though this might occasion fewer models and a more limited choice of engine types. The driving preferences of hot rodders are not to outweigh the goal of a clean environment.").

[536] *See* 90 FR 36312-3 ("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."); 90 FR 36313/1 ("Slowing fleet turnover is of particular concern with respect to the EPA's 2024 vehicle GHG rules because of the large increase in vehicle technology costs which will likely lead to large increases in purchase prices, and the impact battery electric and fuel cell vehicle technologies will have on purchasing decisions of consumers (for light-, medium-, and heavy-duty vehicle buyers).").

[537] *See* CAA section 202(a)(2); *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.").

EPA has previously made detailed findings regarding the costs of compliance for its vehicle GHG rules. For example, the 2024 Rules applied state-of-the-art technical research and modeling techniques to calculate costs of compliance for regulated entities, including discrete costs for different classes and types of vehicles.[538] The 2024 Rules also assessed the reasonableness of those costs, for example, comparing them to the total manufacturing cost of a new vehicle and the compliance costs imposed by prior EPA emission standards. EPA also modeled the costs of various sensitivities, such as different battery prices or technology adoption rates (including no additional battery electric vehicle adoption beyond the baseline). On balance, EPA concluded that the costs of its GHG standards were reasonable.

For example, EPA estimated that between model years 2027 and 2032, the light-duty fleet would incur average costs of $1,200 per vehicle, which fell within the range of costs of prior GHG rules that industry has successfully complied with, and amounted to a mere 3% of average new vehicle costs.[539] Considering various sensitivities, EPA identified costs ranging from $130 to $1,700 (0.3 – 3.9% of new vehicle costs) for the more likely scenarios, with $2,500-$2,600 (5.8% of new vehicle costs) for two unlikely scenarios. EPA also noted that lower costs in the earlier years of the program (e.g., for the central case, $200 in MY2027) and the higher costs in the later years of the program (e.g., $2,100 in MY2032), consistent with providing greater lead-time to support larger market shifts in later years.[540]

Despite the agency's prior detailed findings on costs of compliance and the availability of analytical tools to estimate costs, EPA's proposal irrationally provides no compliance cost estimates. EPA also fails to acknowledge, much less address, its prior factual findings and policy judgments, whether in the 2024 Rules or any earlier GHG rule except the 2020 Rule. EPA does generally discuss changes to IRA tax credits and Congress's purported disapprovals of preemption waivers for California programs, but fails to quantify how those translate to changes in costs of compliance. EPA also fails to explain how consideration of costs relates to the repeal of all the GHG standards. For example, many of the standards established in the 2024 Rules have very low costs.[541] The legacy GHG standards also do not impose any new vehicle technology costs at all, but merely require that existing vehicles comply with the applicable standards over the course of their useful life.

EPA does address costs in its RIA. But such discussions cannot rescue the agency from its failure to consider costs since the agency disclaims reliance on the RIA. In any event, RIA

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[538] See 89 Fed. Reg. at 28086-92; 89 Fed. Reg. at 29588-91. The 2024 Rules' RIAs and supporting technical memoranda provide detailed explanations of EPA's methodologies and cost findings.

[539] See 89 Fed. Reg. at 27861 & tab.9, 28089-90.

[540] The 2024 Rules further contextualized compliance costs alongside purchaser costs and benefits, finding that purchasers would reap significant total cost of ownership savings from the standards principally due to lower fuel, maintenance, and repair expenses; as well as social costs and benefits, finding vast net benefits to society driven by fuel savings and climate and public health benefits. We further discuss purchaser and social costs and benefits in section VII.C.2.

[541] For example, EPA found that the MY2027 light-duty GHG standards only incur costs of approximately $200 per vehicle, which are significantly lower than certain costs found in prior GHG rules and amount to approximately 0.5 percent of the cost of a new vehicle. See 89 Fed. Reg. 27861 & tab. 9.

Scenario 1 adopts a similar methodology and reaches similar results as the costs analysis found in the 2024 Rules.[542] RIA Scenarios 2-5 apply a similar methodology as the 2024 Rules, but also account for changes in tax credits and the California Advanced Clean Truck program. These scenarios find slightly higher vehicle technology costs,[543] but also significantly higher benefits, likely due to greater fuel and other savings attributable to the GHG standards. The RIA does not explain how the agency can reach the same factual findings on costs but newly discover they are unreasonable, nor does the RIA purport to make such a finding.[544] We further address the RIA later in this section VII.C.

Updated technical analyses of both vehicle feasibility and compliance is presented in separate comments filed by EDF and NRDC. These analyses continue to demonstrate that the GHG standards remain feasible within the lead-time provided and with reasonable compliance costs.

ii. The proposal fails to consider several relevant factors.

Historically, including in the rulemaking for the 2024 Rules,[545] EPA has considered additional factors in setting Section 202(a)(1) GHG standards, such as:

- purchaser-related factors (e.g., purchaser acceptance, vehicle suitability, up-front vehicle costs, charging and refueling infrastructure availability and costs, fuel costs, maintenance and repair expenses, total costs of ownership, payback period),
- fleet turnover,
- regulatory certainty to support investments in clean vehicles,
- consumer interest in cleaner, more fuel-efficient vehicles,
- employment impacts,
- global competitiveness of the United States,
- oil conservation and energy security,
- grid reliability,
- vehicle safety,
- environmental justice, and
- net benefits.

EPA's proposal completely abandons consideration of these factors. While the statute does not require their consideration, EPA had previously recognized these factors as important

[542] Compare RIA Appendix A (listing total light, medium, and heavy vehicle technology costs of $750-800 billion), with 89 Fed. Reg. 27860 tab. 8 (2024 LMDV Rule) (listing LMDV technology costs of $760 billion), and 89 Fed. Reg. 29456 tab. ES-8 (2024 HDP3 GHG Rule) (listing heavy-duty vehicle technology costs at $-3.2 billion). All results presented in 2022 dollars at 3% net present value.

[543] Compare RIA 26, 27, 30-32 (listing vehicle costs of $750 billion under Scenario 1 and $800 billion under Scenarios 2-5). All results presented in 2022 dollars at 3% net present value.

[544] The RIA revealed preference scenarios do not separately identify costs of compliance. See RIA 37.

[545] *See, e.g.*, 89 Fed. Reg. at 27890, 27899-90.

and relevant considerations as part of its administrative record.[546] The agency's abrupt and unexplained change in policy is arbitrary and capricious. And while certain factors—namely oil conservation, energy security, and grid reliability—are discussed in the RIA, EPA discounts reliance on the RIA.

a. Purchaser factors

EPA's claims about purchaser factors in its assessment of the availability of "requisite technology" under the statute rely on unsupported and unsupportable assumptions, deviate inexplicably from prior analysis, are contradicted by the agency's own RIA findings, and are otherwise arbitrary and capricious.

EPA fails to reasonably explain, indeed to explain at all, its deviation from the 2024 Rules' detailed analyses of purchaser costs. EPA refers to the 2024 Rules' cost analysis only to reiterate that vehicle technology costs may be passed on to consumers as price increases.[547] EPA then recognizes that upfront cost is not the only cost that consumers consider, as "[t]he total cost of ownership involves many factors, including, for example, not only vehicle price, but also owning and operating costs (e.g., service and maintenance costs and fuel costs)."[548] Yet the agency fails to confront the data that EPA presented on these factors in the 2024 Rules.

The 2024 Rules conducted sophisticated modeling of purchaser costs—accounting for increased upfront costs of clean vehicle technologies, [549] costs of charging infrastructure,[550] refueling and charging costs,[551] maintenance and repair expenses,[552] as well as other relevant

[546] As we explain in section VI, EPA misinterprets the statutory reference to "welfare" in section 202(a)(1) to require broad consideration of the welfare effects of compliance, such as consumer choice. Nonetheless, were that interpretation to be correct, "welfare" considerations would also reasonably include these factors, and EPA's failure to consider them would make the agency's proposal arbitrary and capricious.

[547] 90 Fed. Reg. 36312.

[548] 90 Fed. Reg. 36312.

[549] Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, Regulatory Impact Analysis at 4-1; Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles: Phase 3, Regulatory Impact Analysis at 429, 488.

[550] Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, Regulatory Impact Analysis at 5-30; Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles: Phase 3, Regulatory Impact Analysis at 105, 317.

[551] Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, Regulatory Impact Analysis at 4-1; Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles: Phase 3, Regulatory Impact Analysis at 120, 289, 296.

[552] Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, Regulatory Impact Analysis at 4-47; Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles: Phase 3, Regulatory Impact Analysis at 243; 292; 530.

costs, like driver rebound,[553] refueling time,[554] and congestion[555]—and identified favorable total costs of ownership for all regulated vehicle classes and types.[556] In addition, EPA also found that "an emerging consensus suggests that purchase price parity is likely to begin occurring by the mid- to late-2020s for some vehicle segments and models" for light-duty vehicles.[557]

Considering each of these factors, EPA concluded that its 2024 light- and medium-duty standards "would be beneficial for consumers because the lower operating costs would offset increases in vehicle technology costs," even without the IRA's EV tax credits.[558] EPA similarly concluded in its 2024 heavy-duty final rule that "costs for owning and operating a ZEV will be lower than a comparable ICE vehicle for all MY 2032 BEVs and FCEVs in our technology packages…" and "[i]n fact, all vehicles show several thousands of dollars in net TCO savings at the five-year point."[559] EPA found in the 2024 HDV Rule that the payback period for the wide range of HD vehicles that the rule covers would be between two years (light-heavy-duty vocational and short haul tractors) and five years (long haul tractors),[560] all of which are within the usual period of first ownership of a vehicle.[561] EPA fails to meaningfully explain why it no longer agrees with its earlier cost analysis.

EPA's conclusion about the standards' impact on purchaser costs is also internally inconsistent. EPA recognizes that the ending of the IRA tax credit for clean vehicles (30D) will affect purchaser costs, but fails to quantify the impact.[562] EPA's RIA does quantify the impact of removing the IRA tax credits, and it demonstrates that removing several IRA tax credits together with the California ACT program would *increase* consumer fuel savings and social benefits attributable to EPA's program.[563] EPA had also previously found that even without the tax

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[553] Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, Regulatory Impact Analysis at 4-22; 4-38; 8-6; Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles: Phase 3, Regulatory Impact Analysis at 736.

[554]Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, Regulatory Impact Analysis at 3-84; 4-41;; Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles: Phase 3, Regulatory Impact Analysis at 155.

[555] Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, Regulatory Impact Analysis at 4-54.

[556]Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, Regulatory Impact Analysis at 3-16; 10-11; Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles: Phase 3, Regulatory Impact Analysis at 82; 273; 469

[557] 89 Fed. Reg. 27991.

[558] 89 Fed. Reg. 28092.

[559] Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles: Phase 3, Regulatory Impact Analysis at 471.

[560] 89 Fed. Reg. 29457.

[561] 89 Fed. Reg. 29470.

[562] 90 Fed. Reg. 36313.

[563] Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards, Draft Regulatory Impact Analysis at 27-28.

credits, the standards would continue to be net beneficial given the overwhelming savings from fuel and maintenance.[564] As such, EPA's own analysis directly contradicts the assertions made in its preamble, rendering the agency's proposal arbitrary and capricious.

Indeed, perhaps recognizing the lack of technical support for its views, the agency's proposal uses unusually tentative language, explaining that the GHG standards "may" or "could" cause negative impacts.[565] It is arbitrary and capricious to base a regulatory action—much less the repeal of a 15-year-old program—on what the agency speculates "may" or "could" possibly happen, when rigorous technical analysis demonstrates that the exact opposite thing is likely to happen.

EPA's RIA findings align directionally with updated modeling analysis, which continue to demonstrate favorable lifetime ownership costs for vehicle purchasers, even absent the IRA tax credits. We present these results in separate comments filed by EDF and NRDC.

EPA also failed to address the factor of charging infrastructure in its proposal. In the 2024 LMDV Rule, the agency noted that, "[i]nvestments in PEV charging infrastructure have likewise grown rapidly in recent years and are expected to continue to climb."[566] U.S. public charging infrastructure investment reached $2.7 billion in 2023 alone.[567] And even though the Trump Administration has paused or revoked certain federal investments in infrastructure, significant state and private investment continues.[568] The 2024 LMDV Rule also notes that appropriate charging infrastructure will be available in sufficient time to support the final standards. Utility organizations commented that the rule sent "appropriate signals to support continued

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[564] *See* 89 Fed. Reg. at 28,092 ("EPA concludes 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 29,593 ("EPA estimates that the projected cost of vehicle technology (not including the vehicle or battery tax credits) and EVSE under the potential compliance pathway will be approximately $1.1 billion, and that the HD industry will save approximately $3.5 billion in operating costs (*e.g.,* savings that come from less liquid fuel used, lower maintenance and repair costs for ZEV technologies as compared to ICE technologies, etc.).").

[565] "*Depending* on the impacts of the GHG regulations on the specific vehicle category and the considerations relevant to the commercial vehicle purchaser, the impacts of GHG regulations *may* result in a decrease in new commercial vehicle sales." 90 Fed. Reg. at 36,312-313. "Increased prices and some consumers rejecting battery electric and fuel cell vehicle technologies *may* lead consumers to hold on to their existing vehicles longer." 90 Fed. Reg. at 36,313/1. "A delay in the turnover of the fleet also *could* lead to a higher risk to drivers and passengers and delay the safety benefits provided by new vehicles. . . ." 90 Fed. Reg. at 36313/2. "By increasing the price of new vehicles and existing vehicles subject to the standards at manufacture, our GHG emission standards *may* prevent some people from accessing the benefits of vehicle ownership." 90 FR 36313/2.

[566] 89 Fed. Reg. at 27850; see also 2024 LMDV Rule RIA chapter 5.

[567] 89 Fed. Reg. at 27850.

[568] For example, California recently announced a $1.4 billion investment. https://www.gov.ca.gov/2024/12/11/california-approves-1-4-billion-plan-to-build-thousands-more-vehicle-chargers-boost-zev-infrastructure/. New York announced a $60 million investment. https://www.governor.ny.gov/news/governor-hochul-announces-60-million-electric-vehicle-charging-infrastructure

infrastructure buildout" and investor-owned utilities stated they could "accommodate localized power needs at the pace of customer demand" required by the rule.[569] This proposal does not make a single reference to charging infrastructure, let alone explain why it is abandoning consideration of this important factor. We further discuss charging infrastructure investments in section VII.D on reliance interests.

b. Fleet turnover

In its third rationale for repealing the standards (preamble V.D), EPA gives dispositive weight to fleet turnover, despite making no supporting empirical findings. According to EPA, "GHG emission standards may harm, rather than advance, public welfare as defined in the CAA by reducing fleet turnover that improves air quality, safety, consumer choice, and economic opportunity."[570] EPA advances no quantitative analysis of any of these alleged impacts, but relies on three generalized footnote citations to the 2020 Rule.[571]

EPA fails to even mention the analysis of fleet turnover and associated emission and safety impacts contained in the 2024 Rules, which included qualitative analysis for all motor vehicle sectors, as well as quantitative modeling for the light-duty sector. For the light-duty fleet, the 2024 LMDV Rule modeled minimal effects on turnover, and concluded that the benefits of the standards vastly outweighed the minimal forgone benefits from reduced turnover, including due to the alleged safety impacts that EPA now spotlights.[572] For the heavy-duty fleet, the 2024 HDP3 Rule concluded that insufficient data existed to perform quantitative modeling, but found that turnover effects would "not occur at all, or if they do, occur in a limited way that will not significantly affect the GHG emissions reductions projected by this rule or that would unduly disrupt the HD vehicle market," particularly given the favorable total cost of ownership of zero-emission vehicles related to gasoline and diesel vehicles.[573] The agency has failed to mention, much less distinguish, its own prior contradictory factual findings.

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[569] 89 Fed. Reg. 27854.

[570] 90 Fed. Reg. 36311.

[571] EPA also claims 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 FR 36312-13 (citing "section VI.C of this preamble for a discussion of the heavy-duty vehicle and engine GHG regulatory requirements and compliance obligations"). While the GHG regulations do impose certain compliance obligations on operators, EPA does not appear to identify any specific obligation applicable to heavy-duty vehicle owners and operators as inappropriate based on its costs or any other reason. EPA's conclusory and unquantified assertions about costs of compliance for these regulated entities do not provide a valid basis for repealing these regulations. The lack of specificity also precludes the public from being able to provide meaningful comment.

[572] 2024 LMDV Rule RTC 1845–46.

[573] 89 Fed. Reg. 29698; see also HDP3 Rule RTC 1757; RIA 6.1.

Although EPA ignores its most recent analysis in the 2024 Rule, EPA seeks to rely on the older 2020 Rule.[574] As a preliminary matter, it is not entirely clear if EPA is only citing the 2020 Rule as general background on fleet turnover, or if it seeks to rely on the quantitative analysis found in that rule, and thus the agency fails to provide adequate notice as to the extent of EPA's reliance on the 2020 Rule's fleet turnover analysis. In any case, this reliance is misplaced. EPA's reliance on outdated analysis and internal logical inconsistencies further render the proposal's fleet turnover analysis arbitrary and capricious.

First, commenters on the 2020 Rule explained that the methodology used in that rule's fleet turnover analysis was arbitrary and capricious. EPA's reliance on that methodology was a dramatic departure from the agency's analysis of fleet turnover in prior rules, and it was based on the use of two new models, a sales model and a scrappage model, that had not been used in policy-making before and had not been published in any journal or subject to peer review prior to release with the 2020 Rule's proposal. Commenters noted three main flaws of the new models, rendering them arbitrary and capricious.

(1) The models operated independently of one another despite longstanding understanding that sales and scrappage are interrelated, producing absurd results. For example, the results showed that new vehicle sales would slow by about 1 million vehicles while the total vehicle fleet size would increase by 190 million vehicles. The models also showed that the scrappage of existing vehicles would slow well beyond the rate of new vehicles entering the fleet, making it impossible for an overall increase in 190 million vehicles.

(2) The models dramatically increased VMT leading to an indefensibly high number of accidents and fatalities.

(3) The models did not include consumer valuation of fuel savings. As commenters noted, EPA relied on the models in an attempt to assert that changes in vehicle standards significantly impact dynamics like vehicle sales, scrappage rates, and vehicle usage when these factors are fundamentally determined by much stronger forces, such as the state of the economy. Given that EPA now seeks to rely on the 2020 Rule without adducing any new data or analysis, we incorporate comments on the 2020 Rule by reference.[575]

Second, EPA stresses that the 2024 Rules' analyses are no longer reliable in light of changing events, so it is inexplicable as to why the agency thinks reliance on the older 2020 Rule is acceptable in this context. Relevant market conditions have changed considerably since the time of the 2020 Rule, including, for example, in the adoption of ZEV technologies. Total EV

[574] 90 Fed. Reg. 36313, see fn 111.

[575] *See, e.g.*, Comments of Environmental and Public Health Organizations, https://www.regulations.gov/document/EPA-HQ-OAR-2018-0283-5070; Comments of Joshua Linn, Resources for the Future, EPA-HQ-OAR-2018-0283, https://www.regulations.gov/comment/NHTSA-2018-0067-11789; Comments of Dr. Mark Jacobsen & Dr. Arthur van Benthem, EPA-HQ-OAR-2018-0283, https://www.regulations.gov/comment/EPA-HQ-OAR-2018-0283-2650; Environmental and Public Health Organizations' Petition for Reconsideration of EPA's Final Rule—The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks (June 29, 2020)..

sales in 2020 were just over 300,000 vehicles, while sales jumped to over 1.5 million in 2024—10% of all new passenger vehicles sales in the United States.[576] And the first half of 2025 saw a record 740,000 light-duty EV purchases in the United States.[577]

Third, EPA fails to explain how the analysis in the 2020 Rule, which applied only to light-duty vehicles, applies to the medium-duty and heavy-duty markets, which differ significantly from the light-duty market, given the differing economics of personal versus commercial vehicles.[578]

Fourth, EPA suggests that turnover occurs because consumers are more likely to rely on cheaper, used vehicles as opposed to buying more expensive, new vehicles, but fails to acknowledge research that shows no statistically significant increase in inflation-adjusted vehicle prices over decades of vehicle standards.[579]

Lastly, EPA's fleet turnover rationale does not apply to the legacy standards. While EPA asserts that this rationale suffices to repeal all the GHG standards, the agency fails to explain why repealing legacy GHG standards would affect turnover. EPA suggests that turnover occurs because consumers are more likely to rely on cheaper, used vehicles as opposed to buying more expensive, new vehicles. Today, most used vehicles are subject to the GHG standards, including light duty vehicles since MY 2012 and medium and heavy duty vehicles since MY 2014. For example, the average light duty vehicle is 12.6 years old,[580] that is, a MY 2013-14 vehicle. It is thus unclear why repealing legacy standards, particularly for the earlier years of the program, would affect fleet turnover at all, as those same legacy vehicles constitute the used vehicle market that EPA believes consumers are resorting to.

c. Regulatory certainty to support investments in clean vehicles

The 2024 Rules emphasized the importance of EPA regulatory action in creating regulatory certainty that supports existing investments and drives new investments in production of clean vehicles and their components (including batteries), critical minerals production, and development of charging infrastructure, and the resulting long-term benefits to domestic advanced manufacturing and national security.[581] While EPA seeks comment on "reliance

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[576] Aaron Isenstadt & Peter Slowik, *U.S. Passenger Electric Vehicle Sales and Model Availability Through 2024*, ICCT (Apr. 2025), https://theicct.org/wp-content/uploads/2025/04/ID-346-%E2%80%93-U.S.-passenger-EV-sales_spotlight_final.pdf.

[577] https://www.anl.gov/sites/www/files/2025-08/Total%20Sales%20for%20Website_July%202025.pdf

[578] See 89 Fed. Reg. at 29699 (explaining differences between light and heavy duty).

[579] Christ Harto, et al., *Vehicle Price Trends: Fuel Economy and Safety Improvements Come Standard* (Feb. 21, 2023), https://advocacy.consumerreports.org/wp-content/uploads/2023/02/CR-Vehicle-Price-Trends-Feb-21-2023.pdf.

[580] https://www.spglobal.com/mobility/en/research-analysis/average-age-vehicles-united-states-2024.html

[581] See 89 Fed. Reg. at 27851 ("The final standards will also provide regulatory certainty to support the many private automaker announcements and investments in PEVs . . . ."), 28017 ("we find that the final rule provides regulatory certainty to support increasing development of supporting electricity infrastructure as well as increasing adoption of strategies to mitigate infrastructure demands, such as

interests" created by the GHG standards, its proposal overlooks a host of them and, as to those it identifies, does not quantify them or explain how they should be weighed. The Proposal does not mention the importance of regulatory certainty to supporting the above-noted public and private sector investments. Indeed, the Proposal does not even mention regulatory certainty. It fails to confront salient facts, such as the virtual certainty of cancelled investments by the clean vehicle sector and related manufacturing sectors that will be caused by repealing the standards. Nor does the proposal address its perversely punishing effect on companies that have made significant investments in becoming clean technology leaders consistent with the GHG standards, or the windfall rewards it provides to companies who have chosen to be technological laggards. *See also* section VII.D (discussing reliance interests).

d. Consumer acceptance of and interest in cleaner, more fuel-efficient vehicles

EPA's Proposal also fails to consider or acknowledge consumer interest in cleaner, more fuel-efficient vehicles. EPA's Proposal purports to be at least in part about "consumer choice," *see, e.g.*, 90 Fed. Reg. at 36,291, but the agency provides little analysis of consumer interest beyond conclusory statements that "GHG emission standards harm public health and welfare by increasing prices and decreasing consumer choice," *id.*, and that "[c]hanges in consumers' interest in purchasing EVs," *id.* at 36,326, justify wholly disregarding the 2024 Rules. But the 2024 Rules considered consumer acceptance of various pollution control technologies and did not find consumer acceptance concerns to be a barrier to compliance—through the application of various technologies, including PHEVs and BEVs—at the levels set in the standards. *See, e.g.*, 89 Fed. Reg. at 28,026-28 (explaining growth in consumer interest in PHEVs and BEVs); 89 Fed. Reg. at 29,469 (explaining that EPA "carefully evaluated" "consumer acceptance of new pollution control technologies more broadly"); *id.* at 29,702-704 (explaining consumer acceptance considerations for heavy-duty vehicles). Under the 2024 Rules, purchasers of light-, medium-, and heavy-duty vehicles would still have available for purchase gasoline and/or diesel vehicles, with PHEV and BEV compliance rates projected to be at levels that EPA found feasible given current and projected consumer acceptance of projected compliance pathways, based on EPA's extensive consideration of that topic. Specifically, the 2024 Rules (and previous vehicles standards) included extensive consideration of consumer acceptance;[582] the 2024 light- and medium-duty rules used consumer acceptance of novel technologies as a modeling parameter, 89 Fed. Reg. at 27,983; and prior to proposing the rules, EPA commissioned a comprehensive peer-

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managed charging and other innovative tools"), 28055 & nn.1262-64 ("EPA finds that the final rule will promote the interest of national security . . . by providing regulatory and market certainty for the continued development of a secure domestic and allied supply chain for critical minerals . . . . This is consistent with views prevalent in the industry that acknowledge the value of regulatory certainty in driving investment in production.").

[582] *See, e.g.*, 89 Fed. Reg. at 28,092-28,096 (2024 LMDV Rule's consideration of consumer interests); 2024 LMDV Rule RIA at 2-85, 4-1, 4-5, 4-7, 4-8, 4-26, 4-37, 12-49; 89 Fed. Reg. at 29,702-704 (Phase 3 rule discussion of purchaser acceptance); Phase 3 RIA at 729-736; 75 Fed. Reg. 25,324, 25,510-512 (2010 LDV Rule, considering impacts on consumers); 77 Fed. Reg. 62,624, 62,917-918 (Oct. 15, 2012) (discussing consumer acceptance); 85 Fed. Reg. 24,174, 25,114-115 (Apr. 30, 2020) (considering consumer demand).

reviewed literature review of consumer preferences for electric vehicles[583]—a resource the Proposal fails to even acknowledge. The Proposal's failure to even consider the extensive analysis of consumer acceptance in the 2024 Rules, or to explain why the prior rules' conclusions about consumer interest no longer apply, while also purporting to advance "consumer choice," is arbitrary and capricious.

Light-duty vehicles. In the Proposal, EPA claims to value "consumer choice" in its consideration of whether to repeal the GHG emission standards, but mentions consumer choice only summarily and fails to actually delve into any analysis, let alone a detailed analysis, of consumer acceptance. By contrast, EPA's 2024 LMDV Rule "carefully considered acceptance of light-duty vehicle technologies, qualitatively and quantitatively," explaining that "consumer acceptance is an important factor for any innovation" and therefore a relevant discretionary factor to the standards' feasibility. 89 Fed. Reg. at 28,026. While the 2024 LMDV Rule was technology neutral, and compliance could be achieved with a variety of emission technologies including non-electrification technologies, 89 Fed. Reg. at 28,083-84 (showing that there is a "range of compliance options available to the industry to meet these standards," including a compliance pathway with no BEVs above the market baseline), the 2024 LMDV Rule concluded that consumer interest in both PHEVs and BEVs would, in the coming years, "yield significant increases" in consumer interest in and adoption of these technologies. *Id.* at 28,028. EPA came to this conclusion with good reason, including significant peer-reviewed support. While the 2024 Rules do not in fact "mandate an increased and faster shift from gasoline-fueled vehicles to electric vehicles," as the Proposal suggests, 90 Fed. Reg. at 36,306,[584] the LMDV Rule projected compliance through a "wide array of technologies, including various ICE, HEV, PHEV, and BEV technologies," 89 Fed. Reg. at 27,898, and EPA therefore considered consumer acceptance of all of these technologies including PHEVs and BEVs, which were projected to be an attractive—but not required—compliance pathway.

For example, EPA's 2024 LMDV Rule cited a study (Forsythe et al. (2023)) that examined consumer choices of plug-in electric vehicles (including BEVs and PHEVs) relative to conventional gasoline vehicles and found that when consumers' basic demands for vehicle attributes are met, they accept or prefer BEVs to combustion vehicles.[585] The Forsythe et al. (2023) analysis was conducted through a nationwide survey-based consumer discrete choice experiment from December 2020 to September 2021, in which new vehicle consumers—weighted to be representative of the U.S. population—chose among potential vehicle options in a

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[583] EPA & Lawrence Berkeley National Laboratory, *Literature Review of U.S. Consumer Acceptance of New Personally Owned Light Duty Plug-In Electric Vehicles* (Jan. 2023),

https://cfpub.epa.gov/si/si_public_record_report.cfm?Lab=OTAQ&dirEntryId=353465.

[584] *See, e.g.*, 89 Fed. Reg. at 27,842 ("emission standards…do not mandate use of particular technologies"); *id.* at 27,896 ("[W]e emphasize that the final standards are not a mandate for a specific type of technology"); *id.* at 27,898 ("[T]his rule does not mandate that any manufacturer use any specific technology to meet the standards in this rule; nor does the rule ban gasoline engines.").

[585] *See* 89 Fed. Reg. at 28,027 citing Connor R. Forsythe, Kenneth T. Gillingham, Jeremy J. Michalek & Kate S. Whitefoot, *Technology Advancement is Driving Electric Vehicle Adoption*, PNAS (May 2023), https://www.pnas.org/doi/epdf/10.1073/pnas.2219396120.

manner that mimicked the process of comparing vehicles on an automaker's website.[586] In order to examine how consumer preferences might change over time, the experiment was designed to be compared to an earlier discrete choice experiment conducted in 2012–2013.[587] The Forsythe et al. (2023) experiment was well-designed in that it (1) mitigated typical concerns of stated-preference experiments by "incorporat[ing] multiple features into the survey design that tend to improve the ability for survey responses to reveal comparable preferences as when making true purchase decisions";[588] (2) included a substantial number of participants (734 car-buyers and 862 SUV-buyers) recruited using both Amazon's Mechanical Turk (to mirror the earlier comparative study) and Dynata (which includes older and higher-income respondents), and weighted to ensure representativeness of the U.S. new vehicle buying population;[589] and (3) evaluated expected technology for a near-future hypothetical vehicle based on extensive research conducted by the National Academies of Sciences, Engineering, and Medicine, thus reflecting what electric vehicle models could realistically be available to consumers in the short term.[590] Forsythe et al. (2023) was the first study to examine "the degree to which consumer willingness to trade off relevant vehicle attributes associated with electrification (e.g., range, operating cost, price, etc.) may have changed over time due to technology improvements or other factors and what this could imply for the sales of new vehicles in upcoming years."[591] The results indicated that "any perceived disadvantages of BEVs relative to gasoline vehicles are often compensated by the BEV's improved operating cost, acceleration, and fast-charging capabilities, particularly for BEVs with a longer range,"[592] which many BEVs today have.[593]

Forsythe et al. (2023) revealed that the attributes consumers look for in their vehicles have most likely stayed consistent between the 2012 stated-preference experiment and Forsythe et al. (2023)'s most recent. As BEVs are able to provide more of those attributes, consumers

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[586] *Id*. at 1, 3.

[587] *Id*. at 1; *see also* J.P. Helveston, et al., *Will Subsidies Drive Electric Vehicle Adoption? Measuring Consumer Preferences in the U.S. and China*, 73 Transp. Res. Part A: Policy Pract. 96-112 (2015), https://doi.org/10.1016/j.tra.2015.01.002.

[588] Forsythe et al. (2023) at 3 (listing features incorporated to mitigate any limitations of stated-preference surveys). *See also* C.A. Vossler, M. Doyon & D. Rondeau, *Truth in Consequentiality: Theory and Field Evidence on Discrete Choice Experiments*, 4 Am. Econ. Journal: Microeconomics 145-171 (2012), https://www.aeaweb.org/articles?id=10.1257/mic.4.4.145.

[589] Forsythe et al. (2023) at 3.

[590] *Id.* at 2–3; *see also* National Academies of Sciences, Engineering, and Medicine, *Assessment of Technologies for Improving Light-Duty Vehicle Fuel Economy—2025-2035* (2021), https://nap.nationalacademies.org/catalog/26092/assessment-of-technologies-for-improving-light-duty-vehicle-fuel-economy-2025-2035.

[591] Forsyth et al. (2023) at 2.

[592] *Id.* at 2.

[593] Coltura, *Electric Car Range and Price Comparison* (updated 2025), https://coltura.org/electric-car-battery-range/; U.S. Dep't of Energy Vehicle Technologies Office, Median EV Range in Model Year 2024 Reached a Record High of 283 Miles per Charge (Dec. 30, 2024), https://coltura.org/electric-car-battery-range/ ; Tom Randall, *Americans Insist on 300 Miles of EV Range. They're Right*, Bloomberg (May 4, 2023), (noting that U.S. EVs have almost reached 300 mile average range).

choose BEVs more often. The authors ultimately concluded that reasonable forecasted improvements of BEV range and price—based on extensive research on technology development by the National Academies of Sciences—show that "consumer valuation of many BEVs is expected to equal or exceed their gasoline counterparts by 2030," resulting in 40% to nearing 60% of consumers choosing BEV powertrain options over combustion powertrain options for the same vehicle.[594] The study concluded that "[a] suggestive market-wide simulation extrapolation indicates that if every gasoline vehicle had a BEV option in 2030, the majority of new car and near-majority of new sport-utility vehicle choice shares could be electric in that year due to projected technology improvements alone."[595] *See also* 89 Fed. Reg. at 28,027 ("Forsythe et al. (2023) finds that 'with the assumed technological innovations, even if all purchase incentives were entirely phased out, BEVs could still have a market share of about 50 percent relative to combustion vehicles by 2030, based on consumer choice alone.'"). Recent research shows that this trend is largely true for pickup trucks as well, concluding that "if electric pickup trucks successfully meet National Academies' 2030 cost and range projections and are as widely available as conventional pickup trucks, the majority of new U.S. pickup truck sales could be electric."[596]

EPA's 2024 LMDV Rule also cited Gillingham et al. (2023), which shows that when EVs are available in a market segment, consumers already often choose the EV over the combustion vehicle. This study used data on all new light-duty vehicles sold in the United States between 2014 and 2020 (a dataset of over 106 million observations), and found that in the vehicle segments and classes where EVs were available, they were competing very successfully with comparable internal combustion engine vehicles, with relative market shares "exceeding 30% in recent years."[597] The results of this investigation imply that ZEV market share is influenced by "the (near-)absence of EV offerings in many segments of the vehicle market"[598] where purchasers are interested in purchasing vehicles. Up until recently, nearly all ZEV models on the market were sedans or hatchbacks, *see e.g.*, 89 Fed. Reg. at 28,027 ("Most early EVs were hatchbacks, which represents a very small portion of overall U.S. vehicle sales"), or vehicles in

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[594] *Id.* at 1, 5 Fig.3 (showing U.S. BEV car market shares in MY 2030 over 50% and U.S. BEV SUV market shares in MY 2030 over 40%).

[595] *Id.* at 1. These projected technology improvements follow the projections from National Academies of Sciences, Engineering, and Medicine, *Assessment of Technologies for Improving Light-Duty Vehicle Fuel Economy—2025-2035* (2021), https://nap.nationalacademies.org/catalog/26092/assessment-of-technologies-for-improving-light-duty-vehicle-fuel-e conomy-2025-2035.

[596] Connor R. Forsythe et al., *Will Pickup-Truck Buyers Go Electric?*, Carnegie Mellon Univ. & Yale Univ. (2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=5145781 (also concluding that "a large majority (74%) of pickup truck buyers belong to latent classes that prefer electric trucks or are indifferent between electric and gasoline trucks when they have identical price, range, towing and payload capacity.").

[597] 89 Fed. Reg. at 27,990, 28,094 (citing Kenneth T. Gillingham, Arthur A. van Benthem, Stephanie Weber, Mohamed Ali Saafi & Xin He, *Has Consumer Acceptance of Electric Vehicles Been Increasing? Evidence from Microdata on Every New Vehicle Sale in the United States*, American Economic Association: Papers & Proceedings 333–334 (May 2023)).

[598] *Id.* at 334.

the luxury car segment of the market,[599] leaving vehicle purchasers looking for other types of vehicles without many options. But now, with over 100 EV models available,[600] having attractive attributes like increased range and lower average costs, a "fit" superior to a comparable internal combustion engine vehicle is available for more consumers.

EPA's 2024 LMDV Rule described EV acceptance as "a virtuous cycle in which consumer demand…will continue to grow." 89 Fed. Reg. at 28,026. And research does indeed show that when considering the attributes consumers care about most, EVs are a great fit. Forsythe et al. (2023) found that the key factors Americans consider when purchasing vehicles and considering EV options are operating cost, range, fast-charging capabilities, and performance characteristics such as acceleration.[601] Consumer surveys and other studies have consistently found the same attributes, along with fuel economy, as key to purchase decisions.[602] EVs offer superior satisfaction of these consumer preferences.

First, EVs are increasingly favorable from an operating cost and total cost of ownership ("TCO") perspective, taking into account fuel and maintenance costs. As the 2024 LMDV Rules RIA explained, "[m]aintenance costs, and the differences between ICE vehicles and [hybrid electric vehicles] versus BEVs and PHEVs, are an important consideration in not only the full

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[599] *See, e.g.*, Gillingham et al. (2023) at 329, 332–333 (noting that EVs are overrepresented in the luxury market segments and that in the hatchback category—"a small market segment with a relatively large number of EV offerings"—sales of PEVs have been "close to 15% of the market in some years").

[600] Argonne National Laboratory, *EV Model Availability and Sales*, https://www.anl.gov/ev-facts/model-sales.

[601] Forsythe et al. (2023) at 1-2.

[602] *See, e.g.*, Consumer Reports, *Consumer Attitudes Towards Fuel Economy: 2020 Survey Results* 3-4, 6 (Feb. 2021), https://advocacy.consumerreports.org/wp-content/uploads/2021/02/National-Fuel-Economy-Survey-Report-Feb-202 1-FINAL.pdf (showing high value placed on fuel economy in purchase decisions); Alexey Sinyashin, *Optimal Policies for Differentiated Green Products: Characteristics and Usage of Electric*, U.C. Berkeley Haas School of Business (Nov. 8, 2021) https://escholarship.org/uc/item/7073h6f7 (finding range and charging station availability as key elements in purchase decisions); J.D. Power, *EV Price Pressure Grows as Government Incentives and Lease Deals Wield Outsized Influence on Consumer Demand* (Mar. 29, 2023), https://www.jdpower.com/business/resources/ev-price-pressure-grows-as-government-incentives-and-lease-deals-wield-outsized-influence-on-consumer-demand#:~:text=At%20the%20current%20trajectory%2C%20J.D.,is%20expected%20to%20surpass%2075%25 ("Consumer interest in EVs is increasingly being heavily swayed by price"); Consumer Reports, *Consumer Attitudes Towards Fuel Economy: 2020 Survey Results* 6 (Feb. 2021), https://advocacy.consumerreports.org/wp-content/uploads/2021/02/National-Fuel-Economy-Survey-Report-Feb-2021-FINAL.pdf (finding that 94% of potential vehicle purchasers considered fuel economy to be "extremely important," "very important," or "somewhat important" when purchasing a vehicle); Consumer Reports, *Fuel Economy 2024: A Nationally Representative Multi-Mode Survey* (Oct. 2024), https://article.images.consumerreports.org/image/upload/v1730394977/prod/content/dam/surveys/Consumer_Reports_Fuel_Economy_August_September_2024.pdf (96% of American drivers say fuel economy is at least somewhat important to them when considering a vehicle purchase and 66% say it is very or extremely important).

accounting of social benefits and costs, but also the consumer decision-making process when comparing ICE/HEV technology versus BEV/PHEV technology." 2024 LMDV Rule RIA at 4-47. EPA's 2024 calculations, based on comprehensive repair and maintenance cost estimates developed by Argonne National Laboratory ("ANL"), found both repair and maintenance costs to be lower for BEVs as compared to ICE vehicles. *See id.* at 4-51, 4-54. Specifically, EPA projected per vehicle maintenance and repair savings with an annualized value of $16 billion. 89 Fed. Reg. at 28,105. Other analyses—both those that have relied on the same underlying ANL cost estimates and those that have relied on other data—have found similarly significant maintenance and repair savings. A 2022 ICCT study considering LDV costs and benefits in the United States between 2022 and 2035 also relied on the ANL cost estimates and found almost identical reductions in per vehicle maintenance costs.[603] The ICCT analysis concluded that maintenance costs for BEVs are expected to be about $2,650 lower than for gasoline vehicles over a six-year period,[604] which averages to about $442 savings per year. For consumers, lower gasoline consumption will result in significant overall savings. Slightly higher upfront costs are offset by lower operating and fuel costs, saving drivers money. An analysis by Atlas Public Policy compared the cost of owning two similar cars—a 2024 gasoline Nissan Rogue crossover utility vehicle and an electric Volkswagen ID.4—and found that over seven years (the average time a vehicle is kept by the original buyer), the Volkswagen ID.4 costs $7,099 less ($44,209 compared to $37,110).[605] The analysis also found that this comparison, with cheaper EVs compared to gasoline vehicles over seven years, existed across other car segments (compact cars, sedans, midsize SUVs, and pickup trucks).[606] Another recent Atlas Public Policy analysis found that "in all but one case, EVs today deliver savings to owners compared to a similar gasoline vehicle over a seven-year period—a common length of time a driver keeps a newly purchased vehicle. The savings can be significant, from more than $2,000 for a compact sedan to more than $8,000 for a mid-size SUV" for MY 2025 vehicles.[607] While this analysis included federal tax incentives, which have since been repealed, the study still found that even without the federal tax credits, two of the vehicle models (including the Model Y, one of the most popular EVs) cost less to own and operate than their gasoline counterparts in MY 2025.[608] Moreover, the analysis did not account for any state or local incentives.

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

[604] *Id.* at 24.

[605] Nick Nigro and Dan Wilkins, *Comparing the Cost of Owning the Most Popular Vehicles in the United States*, Atlas Public Policy, March 2024, https://atlaspolicy.com/wp-content/uploads/2024/03/Comparing-the-Cost-of-Owning-the-Most-Popular-Vehicles-in-the-United-States.pdf; NRDC, *Cleaner Cars and Fatter Wallets* (June 2024), https://www.nrdc.org/sites/default/files/2024-06/cleaner-cars-fatter-wallets-ib.pdf.

[606] *Id.*

[607] Dan Wilkins & Nick Nigro, *Comparing the Cost of Owning the Most Popular Vehicles in the United States: 2025 Update* (June 2025), https://atlaspolicy.com/wp-content/uploads/2025/07/Comparing-the-Cost-of-Owning-the-Most-Popular-Vehicles-in-the-United-States-2025-Update.pdf.

[608] *Id.* at 2.

These operating expense savings (which also include lower maintenance and repair costs, discussed *supra*) are highly significant, and only grow larger the longer the owner retains the vehicle. A survey conducted by Consumer Reports in 2019 and 2020 also found very significant self-reported consumer savings on repair and maintenance. The data from surveys of thousands of Consumer Reports members revealed that "BEV and PHEV owners are paying half as much as ICE owners are paying to repair and maintain their vehicles," with lifetime savings of BEVs and PHEVs over combustion vehicles being approximately 4,600.[609] Similarly, a study by UBS estimated that the Chevy Bolt (BEV) has total annual maintenance costs of $255 and the VW Golf (combustion vehicle) has repair and maintenance costs of $610.[610] An analysis using U.S. Office of Energy Efficiency and Renewable Energy data regarding maintenance and repair costs and U.S. General Services Administration data regarding federal vehicle use calculated that "a hypothetical full-electric government fleet would have saved just over $78 million in maintenance costs" in one year.[611] An analysis of repair and maintenance costs in Canada, which found 47% repair and maintenance cost savings for BEVs over combustion vehicles, noted that U.S. studies have found cost savings in similar ranges, and explained that when looking at the top 10 most common U.S. car repair items, none of the repairs in the list apply to a BEV.[612] These significant repair and maintenance savings are expected to occur because "[t]ypical BEV drivetrains have 90% fewer moving parts, require no maintenance such as oil changes or timing belts and their ability to use regenerative braking saves energy and makes their brake pads last longer."[613] Thus, U.S. drivers and vehicle purchasers stand to gain significant benefits from reduced automotive repair and maintenance needs for BEV. For the Proposal, EPA has conducted no additional research related to these costs and failed to explain its change in position from prior conclusions in the 2024 Rules.

Emission reduction technologies, including electric vehicles, also offer large fuel cost savings to American drivers, as EPA recognized in the 2024 LMDV Rule. 89 Fed. Reg. at 28,066; 28,092 (noting that "the effects of reduced fuel costs may be especially important for [lower-income] households"). EPA's vehicle standards, including its 2024 Rules have consistently been projected to save consumers significant dollars at the gas pump. *See, e.g.*, 77 Fed. Reg. at 62,633 (projecting fuel cost savings between $5,700 and $7,400 over the lifetime of a MY 2025 vehicle); 89 Fed. Reg. at 27,859 (projecting a total of $46 billion in reduced annual fuel costs). These savings are prioritized by American car buyers. A 2020 nationally

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[609] Chris Harto, *Electric Vehicle Ownership Costs: Today's Electric Vehicles Offer Big Savings for Consumers*, Consumer Reports at 9, 11 (Oct. 2020), https://advocacy.consumerreports.org/wp-content/uploads/2020/10/EV-Ownership-Cost-Final-Report-1.pdf.

[610] UBS, *UBS Evidence Lab Electric Car Teardown — Disruption Ahead?* 7 (May 18, 2017), https://neo.ubs.com/shared/d1ZTxnvF2k/.

[611] Nick Yekikian, *The Government Confirms Obvious: Electric Cars Cheaper to Maintain Than Internal Combustion Vehicles*, Motortrend (June 21, 2021), https://www.motortrend.com/news/government-ev-ice-maintenance-cost-comparison/.

[612] Ryan Logtenberg, James Pawley & Barry Saxifrage, *Comparing Fuel and Maintenance Costs of Electric and Gas Powered Vehicles in Canada*, 2 Degrees Institute at 5 (Sept. 2018), https://www.2degreesinstitute.org/reports/comparing_fuel_and_maintenance_costs_of_electric_and_gas_powered_vehicles_in_canada.pdf.

[613] *Id.*

representative survey of potential vehicle purchasers found that 94% of potential purchasers considered fuel economy to be important when purchasing a vehicle; a similar 2024 survey found this preference stayed consistent, with 96% of American drivers saying fuel economy is important to their vehicle purchasing decision.[614]

As operating costs are reduced, car buyers are willing to pay more for their vehicles. Forsythe et al. (2023) found car buyers willing to pay upfront an additional $1,960 per 1 cent/mile reduction in operating cost, and SUV buyers willing to pay an additional $1,490.[615] The paper also found that any perceived EV disadvantages were made up for by favorable operating costs (along with fast-charging capability).[616] Moreover, in recent years, average EV costs have appeared higher than average combustion vehicle costs at least in part because many EVs have been offered only in the luxury vehicle market. Gillingham et al. (2023)'s review of its dataset containing every new LDV sale in the United States between 2014 and 2020 revealed that, during that time period, "the market share of EVs and PHEVs is quite high in several price brackets at the high end, but the number of vehicles sold in these high price brackets is relatively small," and that "EVs can make up a large market share in the U.S. new car market," and "there is a great deal of untapped product space for EVs in the lower price brackets."[617] Regardless, EV owners can save $6,600 to $11,000 relative to owners of the comparative combustion-engine vehicle over a six-year ownership period, across all vehicle types, even without the existence of any state or federal incentives.[618]

Second, EVs have additional superior attributes widely attractive to drivers, which EPA recognized can enhance consumer acceptance of and preference for electric vehicles. For example, EPA's 2024 LMDV Rule notes that EVs can offer improved performance and handling, have a driving range similar to that of ICE vehicles, and many can even tow.[619] And commercial vehicles can offer "job-site utility with auxiliary power capabilities similar to portable worksite generators."[620] Attributes such as bi-directional charging potential; responsive and faster acceleration; improved performance and handling; and better noise, vibration, and harshness characteristics provide additional important benefits. *See, e.g.*, 2024 LMDV Rule RIA at 3-16. For example, BEVs with bi-directional charging capability have potential to serve as back-up

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[614] Consumer Reports, *Consumer Attitudes Towards Fuel Economy* at 3-4, 6; Consumer Reports, *Fuel Economy 2024: A Nationally Representative Multi-Mode Survey* (Oct. 2024), https://article.images.consumerreports.org/image/upload/v1730394977/prod/content/dam/surveys/Consumer_Reports_Fuel_Economy_August_September_2024.pdf (96% of American drivers say fuel economy is at least somewhat important to them when considering a vehicle purchase and 66% say it is very or extremely important).

[615] Forsythe et al. (2023) at 5.

[616] Forsythe et al. (2023) at 1-2, 6 (assuming sufficiently long range)

[617] Gillingham et al. (2023) at 331–332.

[618] 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/.

[619] 89 Fed. Reg. at 27990.

[620] *Id*.

home generators in temporary power outages, with a typical BEV storing about 67 kWh in its battery—more than three days' worth of electricity.[621] In fact, when a 2021 ice storm in Texas left millions of residents without electricity, Ford's hybrid F-150s served as home generators.[622] More makes and models are expected to offer bi-directional charging,[623] and more utilities are supporting bi-directional charging,[624] with the potential that this capability becomes the norm—an attractive additional benefit. Additionally, the EV driving experience adds to consumer appeal. Consumer Reports has explained that "most electric cars deliver instant power from a stop, and they are both smooth and quiet when underway. The driving experience is quite different from a traditional gasoline-fueled car because EVs feel like they glide effortlessly."[625] BEVs' lower center of gravity improves handling over combustion vehicles by allowing turning and cornering more quickly and smoothly than gas-powered cars.[626] In addition, BEVs' regenerative braking capabilities, which capture energy normally lost during braking, may also improve the driving experience by extending the vehicle's range and provide a smoother and more controlled braking experience.[627] Car and Driver tested dozens of EVs and compared the data with gasoline-powered cars, finding that EVs are quieter at "max-attack acceleration" as well as at 70 miles per hour, have a more even weight distribution due to battery packs positioned low and in the vehicle's center, and accelerate almost as quickly as their combustion counterparts.[628] Several other analysts have concluded that EVs accelerate faster than gas-powered vehicles because they

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[621] Michael J. Coren, *Electric Vehicles Can Now Power Your Home for Three Days*, Washington Post (Feb. 17, 2023), https://www.washingtonpost.com/climate-environment/2023/02/07/ev-battery-power-your-home/.

[622] *Id.*

[623] *Id.* (noting that makers of the Hyundai Ioniq 5, Lucid Air, Kia EV6, VW ID.4, Mitsubishi Outlander, and Chevy Silverado EV, in addition to Ford's F-150, have announced plans for offering electricity services in the next year or so).

[624] Kalena Thomhave, *GM Joins PG&E Bidirectional EV Charging Pilot in California*, Automotive Dive (Mar. 28, 2025), https://www.automotivedive.com/news/gm-energy-pge-bidirectional-charging-pilot/743392/ (describing PG&E's vehicle-to-everything pilot and partnership with GM); Breana Noble, *More EVs Will Support Homes During Power Outages, Add Energy Grid Capacity* (June 12, 2025), https://www.detroitnews.com/story/business/autos/2025/06/12/ev-bidirectional-charging-vehicle-to-home-grid-power-outage-v2h-v2g/84132200007/?gnt-cfr=1&gca-cat=pp&gca-ds=override.

[625] Consumer Reports, *Electric Cars 101: The Answers to All Your EV Questions* (March 2, 2023), https://www.consumerreports.org/cars/hybrids-evs/electric-cars-101-the-answers-to-all-your-ev-questions-a7130554728/.

[626] Matthew Beecham & Peeyush Garg, S&P Global, *Regenerative Braking Powers BEV Performance Gains* (Sept. 11, 2025), https://www.spglobal.com/automotive-insights/en/blogs/2025/09/regenerative-braking-powers-bev-performance-gains?utm_source=chatgpt.com.

[627] *Id.*

[628] Dave Vanderwerp, *How EVs Compare to Gas-Powered Vehicles in Seven Performance Metrics*, Car and Driver (May 15, 2021),

https://www.caranddriver.com/features/g36420161/evs-compared-gas-powered-vehicles-performance/; *see also* P. George, *Think EVs Are Bad In Winter? Here's Why They Have a Huge Advantage*, Inside EVs (Dec. 26, 2024) (explaining how EVs' "vastly better traction in snowy and icy conditions, prevent[s] wheel slip and, potentially, spin-outs much more effectively than internal-combustion vehicles can").

provide instant torque to the wheels.[629] Electric vehicles can also offer performance benefits especially for rural drivers: "Because of the high torque and low center of gravity, [EVs] have excellent performance, which is important on rough, curvy and steep roads."[630]

The fact that EVs must charge does not undermine their significant consumer benefits. Most U.S. light-duty vehicle trips are well below the average ZEV range, and charging for these trips can often be done when vehicles are parked at home, work, or in public in between trips. In fact, recent research has shown that 90% of trips could be completed in vehicles with 124 miles of range, and that the average American drives only 37 miles per day—well below the capabilities of the current average EV range in the United States (almost 300 miles).[631] Even as of 2016, researchers at MIT found that electric vehicles at the time could handle almost 90% of all car travel in the U.S.[632] Drivers with access to a garage or dedicated overnight parking spot may simply charge at home while they sleep, and most do.[633] Once a home charger is installed, "the home then has its own permanent home refueling station that can likely be used with all future EVs."[634] Research on parking has found that the average car is parked for 95% of its

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[629] *See, e.g.*, Jeremy Laukkonen, Lifewire, *Want a High-Performance Car? Think EV* (Sept. 29, 2021), https://www.lifewire.c/want-a-high-performance-car-think-ev-5203444; Matthew Beecham & Peeyush Garg, S&P Global, *Regenerative Braking Powers BEV Performance Gains* (Sept. 11, 2025), https://www.spglobal.com/automotive-insights/en/blogs/2025/09/regenerative-braking-powers-bev-performance-gains?utm_source=chatgpt.com.

[630] Maria Cecilia Pinto de Moura, *Survey Shows Pathway to Speeding Up EV Adoption in Rural Areas*, Union of Concerned Scientists (Mar. 14, 2023), https://blog.ucs.org/cecilia-moura/survey-shows-pathway-to-speeding-up-ev-adoption-in-rural-areas/.

[631] Coltura, *Electric Car Range and Price Comparison* (updated 2025), https://coltura.org/electric-car-battery-range/; U.S. Dep't of Energy Vehicle Technologies Office, Median EV Range in Model Year 2024 Reached a Record High of 283 Miles per Charge (Dec. 30, 2024), https://coltura.org/electric-car-battery-range/; Mario Herberz, Ulf J. J. Hahnel & Tobias Brosch, *Counteracting Electric Vehicle Range Concern with a Scalable Behavioural Intervention*, Nature Energy 503 (2022) (finding that 90% of trips could be completed in vehicles with 124 miles of range); Tom Randall, *Americans Insist on 300 Miles of EV Range. They're Right*, Bloomberg (May 4, 2023), (noting that U.S. EVs have almost reached 300 mile average range).

[632] Catherine Caruso, *Why Range Anxiety for Electric Cars is Overblown*, MIT Technology Review (Aug. 15, 2016), https://www.technologyreview.com/2016/08/15/158319/why-range-anxiety-for-electric-cars-is-overblown/.

[633] Gaurav Batra, Ankit Khatri, Akshi Goel & Menaka Samant, *EY Mobility Consumer Index 2022 Study* 5 (May 2022), https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/automotive-and-transportation/automotive-transporta tion-pdfs/ey-mobility-consumer-index-2022-study.pdf (finding that 80% of EV owners use home charging); Rob Stumpf, *Americans Cite Range Anxiety, Cost as Largest Barriers for New EV Purchases: Study* (Feb. 26, 2019), https://www.thedrive.com/news/26637/americans-cite-range-anxiety-cost-as-largest-barriers-for-new-ev-purchases-s tudy (over half of EV charging happens at home).

[634] David P. Tuttle & Ross Baldick, *Technological, Market and Policy Drivers of Emerging Trends in the Diffusion of Plug-In Electric Vehicles in the U.S.*, Electr. J. 7 (Aug./Sept. 2015), https://users.ece.utexas.edu/~baldick/papers/plugindiffusion.pdf.

useful life,[635] leaving plenty of time to charge in a large variety of locations when the car is not in use, saving drivers time at the pump.

Even in EPA's Draft Regulatory Impact Analysis ("DRIA") accompanying the Proposal, the agency acknowledges that consumer interest in both BEVs and PHEVs remains high, *see* DRIA at 5 (citing surveys and reports showing consumer interest remains steady and that "EV sales have increased compared to last year.").[636] With at least 60% of Americans stating they would consider buying an EV,[637] U.S. EV sales continuing to grow year-over-year,[638] and 92% of EV drivers saying they will never go back to combustion vehicles,[639] interest certainly remains high enough to keep pace with the standards set in the 2024 LMDV Rule.[640] EPA's Proposal to repeal the vehicle rules in part to support "consumer choice," while failing to provide analysis contrary to the 2024 LMDV Rule or the accompanying consumer acceptance literature review, and failing to consider the role EVs' benefits play in consumer choice and consumer acceptance, especially in light of the earlier rules' extensive investigation into consumer acceptance, is arbitrary and capricious.

Heavy-duty vehicles. EPA's Phase 3 heavy-duty vehicle GHG standards are also expected to provide significant benefits to purchasers, fleet managers, and drivers—something EPA considered and recognized in the 2024 HDP3 Rule Rule. In the Phase 3 Rule, EPA "considered several different factors related to purchaser acceptance of new technologies," 89 Fed. Reg. at 29,665, including, among other technologies, electrification technologies, and explained that when it comes to HDVs, "we are seeing increasing demand for, and increasing

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[635] Ruth Eckdish Knack, *Pay As You Park*, Planning Magazine (May 2005), http://shoup.bol.ucla.edu/PayAsYouPark.htm#:~:text=%22Most%20people%20in%20transportation%20focus,learn%20from%20that%2095%20percent.

[636] Citing K. Thomhave, *Consumers Sustain Interest in EVs But Range Anxiety Still a Concern*, Automotive Dive (2025), https://www.automotivedive.com/news/jd-power-ev-sales-consumer-interest-strong/748924/; J.D. Power.

EV Purchase Consideration Holds Steady amid Market Uncertainty, J.D. Power Finds (2025), https://www.jdpower.com/business/press-releases/2025-us-electric-vehicle-consideration-evc-study.

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

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

[639] Ellen Hiep, *Results World Wide EV-Drivers Survey: 92% of EV Drivers Will Never Go Back!*, Global EV Alliance (Dec. 10, 2024), https://globalevalliance.com/world-wide-ev-drivers-survey-92-of-ev-drivers-will-never-go-back/.

[640] *See, e.g.*, Plug in America, 2025 EV Driver Annual Survey Report (2025), https://pluginamerica.org/wp-content/uploads/2025/06/2025-EV-Driver-Annual-Survey-Report-1.pdf ("Both globally and domestically, 2024 was a year of continued growth in the EV market. Over 1.56 million plug-in electric vehicles were sold in the U.S. in 2024, marking the first time yearly sales have hit the 1.5 million mark. Almost 300,000 new electric vehicles were sold in the first quarter of 2025, marking an 11.4% year-over-year increase.").

investment in, ZEV technology prior to the adoption of the final standards," 2024 HDP3 Rule RIA at 730.

As with light-duty vehicles, heavy-duty ZEVs have many attributes that make them more appealing than their conventional counterparts. First and foremost is cost, and virtually all categories of heavy-duty ZEVs are expected to have a lower TCO when compared to combustion vehicles in the very near future, if not already. 89 Fed. Reg. at 29,592; 2024 HDP3 Rule RIA at 471. Second, as with LDVs, heavy-duty ZEVs have many additional attributes that appeal to drivers and operators, reinforcing EPA's conclusions in the Phase 3 rule that the standards set were feasible with current and projected consumer acceptance of various technologies. A "truck is also an office," where "[t]he operator has to be happy being in the cab, or else they just quit. Driver retention is a huge problem in trucking."[641] Research by RMI and NACFE shows that "drivers love electric trucks."[642] NACFE research sponsored by PepsiCo, Cummins, and Shell found that electric trucks are quieter ("no need to crank up the radio and drivers can hear what's going on around them"); offer better visibility and cleaner, simpler operation; have smoother torque; have superior air conditioning; and "[d]riving in traffic seems easier and safer."[643] Members of the trucking industry have made the following positive comments about HD ZEV operation:

- "They don't vibrate, they don't smell, they accelerate properly, so you're not constantly the slow one in traffic off a red light. Drivers don't come home at the end of the day and feel exhausted or feel like they've been operating a jackhammer for the past eight hours."[644]
- "The truck is so quiet, everything is smooth. It gives you time to focus on what's going on around you. With the diesel trucks there's rattling, there's driver fatigue, things you don't even know are going on. But as soon as I got in the electric truck, I realized this is the way of the future."[645]
- "EVs won't tow your boat? This beast will actually tow a bloody big boat, and a gross load of up 44 tonnes. And it will do so with ease. It will also do it in relative silence, with no crunching of gears, no loud braking, and no emissions. These huge machines are remarkably simple to drive. First of all, they are quiet. If you are outside, the noise reduction is 50 per cent [sic]. If you are inside, the noise reduction is nearly one-third. That means a lot for the community, and for the well-being and working conditions of the driver."[646]

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[641] Laurie Stone, *Reality Check: Electric Trucks Are Viable Today*, RMI (May 25, 2022), https://rmi.org/reality-check-electric-trucks-are-viable-today/.

[642] *Id.*

[643] NACFE, *Run on Less – Electric: Drivers Love Electric*, Run on Less, https://runonless.com/videos/drives-love-electric/.

[644] Comment by RMI Principal Dave Mullaney. Laurie Stone, *Reality Check: Electric Trucks are Viable Today*, RMI (May 25, 2022), https://rmi.org/reality-check-electric-trucks-are-viable-today/.

[645] Comment by Donald Disesa, driver for Penske. *Id.*

[646] Giles Parkinson, "*Not Like Anything I've Tried Before:" First Drive of Volvo's Heavy Duty Electric Truck*, The Driven (Sept. 19, 2022),

- "I've had a positive experience and enjoyed driving the truck. It's a whole different experience and it's a step up Driving the electric truck is smooth, quiet and it doesn't shift, so it's smooth from the take off The only noise you hear is the little whine from the motors, the tires rolling down the road and your radio. You kind of get used to it after a while and have to get back in the diesel to really notice the difference again . . . . You're helping the environment and the electric is definitely smoother and quicker."[647]
- "The guys love it.…The truck is quiet."[648]
- "I can't help but think that EVs may be a great way to attract the next generation of both drivers and technicians. The fact that EVs are 'clean' is a big plus; the fact that they are 'cool' might just be the boost we need to put the driver and technician shortages to bed."[649]
- "There was no noise—and no fumes…I wouldn't want to [return to driving a gasoline vehicle]. After being in this—it's just night and day."[650]
- "Diesel was like a college wrestler. And the electric [truck] is like a ballet dancer."[651]

Despite EPA's conclusions in the 2024 HDP3 Rule that purchaser acceptance in the heavy-duty vehicle market was at levels consistent with the feasibility of the standards set, and additional research reinforcing these conclusions, EPA's Proposal does nothing to explain why the rules must be repealed in order to further consumer choice.

e. U.S. global competitiveness and national security

Manufacturers of U.S. vehicles and their components and raw materials operate in a competitive global market that is shifting toward lower polluting vehicles and higher

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https://thedriven.io/2022/09/19/like-nothing-ive-tried-before-first-drive-of-volvos-heavy-duty-electric-truck/ (comments regarding Volvo's FH long-haul HD truck).

[647] The Schneider Guy, *Schneider Driver Tests New eCascadia Electric Semi-Truck*, Schneider, https://schneiderjobs.com/blog/driver-tests-ecascadia-electric-semi-truck (comments by Marty Boots, Schneider truck driver since 2017 and diesel technician for 30 years, who drove the Freightliner eCascadia for three months).

[648] Rob Verger, *Electric Garbage Trucks Are the Quiet, Clean Titans of Waste Collection*, Popular Science (Aug. 18, 2021), https://www.popsci.com/technology/nyc-sanitation-acquires-mack-electric-garbage-trucks/ (comments of Rocky DiRico, deputy commissioner with New York City's Department of Sanitation, on Mack's electric garbage truck).

[649] Comment by Gino Fontana, COO and EVP at Transervice Logistics Inc., and prior VP of operations at Berkeley Division and Puerto Rico. He has"more than 35 years of experience in the transportation and logistics industry with both operational and sales experience." *See* Gino Fontana, *Preparing Trucking to Safely Service Electric Vehicles*, Fleet Maintenance (May 26, 2023), https://www.fleetmaintenance.com/shop-operations/employees-and-training/article/53061731/preparing-trucking-to-safely-service-electric-vehicles.

[650] Comments of Gary LaBush regarding driving an electric Ford e-transit delivery truck. Shannon Osaka, *For Truckers Driving EVs, There's No Going Back*, Wash. Post (Jan. 18, 2024), https://www.washingtonpost.com/climate-solutions/2024/01/18/electric-truck-drivers-vehicles/.

[651] Comments of Marty Boots, regarding Freightliner eCascadia semi-truck. *Id.*

environmental standards. Global demand for, and investment in, electric vehicles has grown substantially in recent years and vehicle manufacturers have invested billions of dollars into clean transportation to stay competitive in a global economy. Strong, consistent federal standards protect investments, drive innovation, and help U.S. businesses lead in a market increasingly defined by long-term value and climate performance. Congress has specifically supported the importance of maintaining U.S. competitiveness in electric vehicles and GHG reduction technologies.[652]

In the 2024 Rules, EPA recognized the importance of strong GHG standards in driving long-term domestic investments toward production of clean vehicles, batteries, and critical minerals, thereby increasing U.S. competitiveness in these key industrial sectors and supporting national security.[653] The standards create a regulatory environment where manufacturers are rewarded for making favorable long-term capital investments in advanced technologies, even if other strategies (such as selling higher emitting vehicles) may create additional profits today. EPA's proposal purports to support "national security" pursuant to President Trump's "Unleashing American Energy" Executive Order.[654] Yet the agency's proposal contains zero analysis of the impacts of deregulation on U.S. global competitiveness or national security. The proposal fails to even mention critical facts regarding the global motor vehicle industry, such as that all major automakers have announced plans to phase out gas cars and shift to EVs,[655] the accelerating transition to clean vehicles in the European Union with a ban on ICE vehicle sales

[652] *See, e.g.*, 22 U.S.C. § 7905(a)(1) (establishing interagency working group to carry out a Greenhouse Gas Intensity Reducing Technology Export Initiative to "promote the export of greenhouse gas intensity reducing technologies and practices from the United States").

[653] 89 Fed. Reg. at 28031 ("we expect that the standards will provide increased regulatory certainty for domestic production of batteries and critical minerals, and for creating domestic supply chains, which in turn has the potential to strengthen the global competitiveness of the U.S. in these areas"), 28055 ("In fact, many of the same critical minerals and the same types of production capacity are necessary not only for complying with the standards, but also for the general competitiveness of the U.S. on a global stage, at a time when the need to reduce greenhouse gases, reduce other pollutants, and produce clean energy is being recognized across the world. The standards are thus consistent with, and are likely to promote, the competitiveness of U.S. industry as well as the national security benefits that accompany such an outcome."), 28122 ("Consistent with Congressional policy, this rulemaking further signals strong demand for PEVs domestically to meet GHG emissions reduction targets and contributes to a favorable regulatory environment for the United States to capture the increased manufacturing and employment associated with PEVs and their components. This positive impact is consistent with the history of EPA's Clean Air Act programs, where strong emission standards have historically contributed to the U.S. being a global leader in the supply of air pollution control equipment, with corresponding benefits for U.S. global competitiveness and domestic employment.").

[654] 90 Fed. Reg. at 36,291.

[655] For example, Ford and Mercedes both target 50% EV sales by 2030, GM plans to phase out combustion engines by 2035, Volvo has committed to 90% electric sales by 2030. https://acceleratingtozero.org/progress-update-navigating-the-electric-shift/

by 2035,[656] and China's ability to now produce EVs at unprecedented scale and cost, with the BYD Seagull starting at just $7,800[657]—less than half the price of the cheapest new car available in America. In 2024, "close to two-thirds of the battery electric cars sold in China were cheaper than their ICE equivalents, up from half in 2021 and just 10% in 2018."[658] China already accounts for about 70% of global EV production, and the International Energy Agency ("IEA") projects that "China is poised to continue leading in electric car sales to 2030, achieving a sales share of around 80% on the back of significant market momentum and competitively-priced EVs."[659] In the heavy-duty market, global electric trucks sales grew by nearly 80% in 2024, and over 80% of global electric truck sales were Chinese.[660] Of 17 million global EV sales in 2024, only about 1.6 million were American EVs,[661] and the United States "remained a net importer of electric cars; imports increased by nearly 40% in 2024, while exports fell by nearly 15%."[662]

Strong standards will also support domestic production of clean vehicle inputs, including batteries and critical minerals. As the global market turns rapidly toward wider EV penetration, it is imperative that America establish a place within the supply chain for EV inputs. In the EV industry where "access to raw materials is a critical factor,"[663] America needs to continue to form strategic partnerships with mining and battery producers and suppliers to secure the supply chain. Strong standards will give manufacturers and investors the predictability and certainty that makes these investments attractive and increasingly feasible.

For 2025, continued global growth is expected in the EV market. The International Energy Agency projects EV sales in 2025 to exceed 20 million, or more than one-quarter of global vehicle sales.[664] The first three months of 2025 saw sales growth of 35% year-over-

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[656]European Parliament, *EU ban on the sale of new petrol and diesel cars from 2035 explained* (Nov. , 2022), https://www.europarl.europa.eu/topics/en/article/20221019STO44572/eu-ban-on-sale-of-new-petrol-and-diesel-cars-from-2035-explained.

[657] Peter Johnson, *BYD's low-cost Seagull EV now starts at under $8,000 in China*, Electrek (Apr. 2025), https://electrek.co/2025/04/08/byds-low-cost-seagull-ev-now-starts-under-8000-china/

[658] Int'l Energy Agency, *Global EV Outlook 2025: Expanding Sales in Diverse Markets* 51 (July 2025), https://www.iea.org/reports/global-ev-outlook-2025.

[659] Int'l Energy Agency, *Global EV Outlook 2025: Expanding Sales in Diverse Markets* 11-12 (July 2025), https://www.iea.org/reports/global-ev-outlook-2025.

[660] Int'l Energy Agency, *Global EV Outlook 2025: Expanding Sales in Diverse Markets* 14 (July 2025), https://www.iea.org/reports/global-ev-outlook-2025.

[661] Int'l Energy Agency, *Global EV Outlook 2025: Expanding Sales in Diverse Markets* 12 (July 2025), https://www.iea.org/reports/global-ev-outlook-2025.

[662] Int'l Energy Agency, *Global EV Outlook 2025: Expanding Sales in Diverse Markets* 12 (July 2025), https://www.iea.org/reports/global-ev-outlook-2025.

[663] Mokter Hossain, *How Chinese Companies are Dominating Electric Vehicle Market Worldwide*, California Management Rev. (Mar. 25, 2024), https://cmr.berkeley.edu/2024/03/how-chinese-companies-are-dominating-electric-vehicle-market-worldwide/.

[664] Int'l Energy Agency, *Global EV Outlook 2025: Expanding Sales in Diverse Markets* 10 (July 2025), https://www.iea.org/reports/global-ev-outlook-2025.

year.[665] There is still time for the United States to catch up as an instrumental player in the global EV market.[666] The clear signals provided by EPA's vehicle emission standards can create private sector confidence in expanding investments in emission reduction technologies, and without them the United States would fall behind. Because the global market is rapidly moving in the direction of greater electrification, what is at stake is not just the global EV market, but the global vehicle market as a whole. Despite President Trump's and Administrator Zeldin's purported interest in supporting American manufacturing, the proposed repeal cedes advanced manufacturing—and with it cutting-edge research and intellectual property—to foreign nations.

f. Employment impacts

EPA has historically considered employment impacts of its standards. For example, the 2024 LMDV Rule quantified the impacts of the rule on vehicle manufacturing jobs, and estimated a "greater likelihood of overall job growth over the period of these standards" in the vehicle manufacturing sector, ranging from 17,400 to 188,100 net job creation in 2032.[667] Both 2024 Rules also contained lengthy qualitative analysis of employment impacts on manufacturing and other sectors, recognizing shifts from employment in ICE to EV and battery manufacturing, as well as increased employment in sectors like charging infrastructure deployment and maintenance. The rules also observed the labor-intensive nature of battery production, concluding that when battery production is accounted for in BEV production, BEVs consistently require more labor to build than ICE vehicles.[668] Indeed, clean vehicles have helped to create numerous manufacturing jobs in communities across the country. As of January 2025, manufacturers had announced investments of almost $200 billion toward electric vehicle manufacturing in the U.S. and 195,000 new U.S. electric vehicle-related jobs over the last decade.[669]

EPA's proposal cites the President's Executive Order titled "Unleashing American Energy" and the profound need to support job creation. And Administrator Zeldin even defined "Protecting and Bringing Back American Auto Jobs" as one of the five pillars of his "Powering the Great American Comeback" Initiative.[670] But EPA's proposal completely fails to discuss

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[665] Int'l Energy Agency, *Global EV Outlook 2025: Expanding Sales in Diverse Markets* 10 (July 2025), https://www.iea.org/reports/global-ev-outlook-2025.

[666] World Economic Forum, *China Has an Electric Vehicle Advantage But Can it Maintain its Edge?* (June 17, 2024), https://www.weforum.org/stories/2024/06/china-electric-vehicle-advantage/ (noting that "we're still in the early days of the automotive industry's EV revolution").

[667] 2024 LMDV Rule RIA 4-81, https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1019VPM.pdf.

[668] 89 Fed. Reg. at 28127.

[669] Env't Defense Fund, *U.S. Electric Vehicle Manufacturing Investments and Jobs* 2 (Jan. 2025),

https://library.edf.org/AssetLink/j1n8dp1041c0g2m68lf0m5qp7p1e2i45.pdf.

[670] U.S. EPA, *EPA Administrator Lee Zeldin Announces EPA's "Powering the Great American Comeback" Initiative* (Feb. 4, 2025), https://www.epa.gov/newsreleases/epa-administrator-lee-zeldin-announces-epas-powering-great-american-comeback. The Administrator stated, "Under President Trump, we will bring back American auto jobs and invest in domestic manufacturing to revitalize a quintessential American industry. We will partner with leaders to streamline and develop smart regulations that will

manufacturing jobs. It fails to confront salient facts, such as the 16,500 clean energy jobs lost within the first six months of 2025 as a result of the Trump Administration's policies,[671] and the virtual certainty of additional lost jobs in clean vehicle and related manufacturing that will be caused by this rulemaking.

Reports by the Economic Policy Institute, Seattle Jobs Initiative, and Climate Nexus have all found that total U.S. employment in the auto sector could increase with electrification, in particular if the share of vehicles sold in the United States that are produced in the United States increases. 89 Fed. Reg. at 28,124–126. Other analyses also have concluded that more stringent vehicle GHG standards can lead to positive job impacts. For example, several state-level analyses conducted by ERM using the Impact Analysis for Planning (IMPLAN) model found that state adoption of clean car standards would result in net job increases, assuming that incremental spending on EV batteries and electric drivetrain components would be in the United States.[672] Moreover, each of these analyses found that the jobs created would be high-quality, high-paying jobs, with average wages between 33% and 100% higher than average wages for the jobs being replaced.[673] Similarly, a state-level analysis conducted by the World Resources Institute (WRI) on increased EV penetration in Michigan found that the state "stands to gain tens of thousands of high-quality jobs," if it "seizes the opportunities" of the EV sector.[674] Because EVs are cheaper to drive, the analysis found that "[s]witching to EVs will allow drivers to save money on vehicle purchases, maintenance, and gasoline, which will improve household finances and have positive employment impacts" as consumers spend their extra money throughout the rest of the economy—thereby creating more jobs.[675] Analysis on the nationwide impacts of California's clean car policies also projects significant overall job gains resulting from increased production of EVs—with over 7.3 million full-time equivalent job-years of employment created

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allow for American workers to lead the great comeback of the auto industry." In announcing this rollback on March 12, 2025, the Administrator again stated, "These actions will create American jobs, including incredible progress to bring back American auto jobs." U.S. EPA, *EPA Launches Biggest Deregulatory Action in U.S. History* (Mar. 12, 2025), https://www.epa.gov/newsreleases/epa-launches-biggest-deregulatory-action-us-history.

[671] E2, *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/.

[672] Dave Seamonds et al., *New York Advanced Clean Cars II Program*, ERM 20 (Feb. 2023), https://www.erm.com/globalassets/documents/global-policies/new-york-advanced-clean-cars-program-report_2023.pdf (evaluating impacts of Advanced Clean Cars II adoption in New York); Sophie Tolomiczenko et al., *The Benefits of the Colorado Clean Car Standard*, ERM 19–20 (May 2023), https://www.erm.com/globalassets/foundation-annual-report-2023/co_acc_ii_final_report_15may2023.pdf (evaluating Colorado's Clean Car Standards); Sophie Tolomiczenko et al., *New Jersey Advanced Clean Cars II Program*, ERM 21 (April 2023), https://www.erm.com/contentassets/0ea3b193115448cd9dd5c7e3622373a0/new-jersey-advanced-clean-cars-ii-program.pdf (evaluating impacts of Advanced Clean Cars II adoption in New Jersey).

[673] *Id.*

[674] Devashree Saha et al., *A Roadmap for Michigan's Electric Vehicle Future*, World Resources Institute 3 (May 2023), https://files.wri.org/d8/s3fs-public/2023-05/roadmap-michigan-ev-future.pdf.

[675] *Id.* at 10–11.

through 2045.[676] Another nationwide study found that, compared to a "no new policy" scenario, a scenario with high levels of EVs would result in a peak of over 2 million jobs created in 2035, even without accounting for the impact of any additional on-shoring incentives such as those that were available under the Inflation Reduction Act.[677] There would also be significant employment opportunities associated with the installation and maintenance of charging infrastructure and related grid infrastructure. Research conducted on behalf of EV Infrastructure Strike Force suggests that deploying 500,000 EV public fast charging stations would support about 30,000 job-years.[678]

While certain employment sectors may be impacted over time by increased electrification, EPA's 2024 Rules correctly explained that this will "happen over a longer time span due to the nature of fleet turnover," with time to retrain workers for better, higher paying jobs, 89 Fed. Reg. at 28,129. A World Resources Institute study considering Michigan's automotive industry noted that many new EV-sector jobs will require skill development, with opportunities to "re-skill, upskill, or shift to jobs of equal or greater quality," and that much of this "could be addressed as part of normal rates of retirement, given that 52 percent of all current auto manufacturing workers in Michigan will reach age 65 by 2040."[679] Moreover, programs have already been implemented to train workers with the skills they will need for jobs within ZEV manufacturing. California's Energy Commission, for example, created the state's Clean Transportation Program to "invest[] in workforce training and development, working with a variety of public and private partners."[680] Electric bus company Proterra and community colleges in California joined together to provide a nine-week training program to become electric bus manufacturing technicians, which workers have already used to transition from lower-paying restaurant jobs, for example, to higher-paying union jobs at Proterra.[681] General Motors launched the Automotive Manufacturing Electrical College "to train current and future employees to work on evolving electrical systems in future GM vehicles."[682] States are also funding training for EV-

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[676] Austin L. Brown et al., *Driving California's Transportation Emissions to Zero*, University of California Institute of Transportation Studies 327 (Apr. 2021), https://escholarship.org/uc/item/3np3p2t0.

[677] University of California Berkeley Goldman School of Public Policy, *The 2035 Report: Transportation* fig. ES-4 & 22–24 (April 2021), https://www.2035report.com/transportation/wp-content/uploads/2020/05/2035Report2.0-1.pdf.

[678] Edward W. Carr, James J. Winebrake, and Samuel G. Winebrake, *Workforce Projections to Support Battery Electric Vehicle Charging Infrastructure Installation* 9, Energy and Environmental Research Associates, LLC (June 8, 2021), https://www.etcommunity.org/wp-content/uploads/2024/03/Workforce-ProjectionstoSupportBatteryElectricVehicleChargingInfrastructureInstallation.pdf.

[679] Saha et al., *A Roadmap for Michigan's Electric Vehicle Future* at 8, 10.

[680] California Energy Commission, *Workforce Development*, https://www.energy.ca.gov/programs-and-topics/programs/clean-transportation-program/clean-transportation-funding-areas-2.

[681] Jill Replogle, *Training a New Workforce for California's Move to Electric Vehicles*, Marketplace (June 28, 2021), https://www.marketplace.org/2021/06/28/training-a-new-workforce-for-californias-move-to-electric-vehicles/.

[682] General Motors, *Training Manufacturers for the Vehicles of Tomorrow*, https://web.archive.org/web/20250211035610/http://www.gm.com/stories/amec-electric-manufacturing-workforce.

related jobs.[683] Strong vehicle standards will increase all of these long-term strategic investments in EV manufacturing and related industries, such as charging infrastructure, creating high-quality and high-paying jobs.

Recent research, and EPA's prior conclusions show that the Proposal is likely to undermine important job growth, because U.S. employment in the auto sector is likely to increase as electrification of the vehicle fleet grows. The Proposal fails to acknowledge or consider this body of research.

g. Oil conservation and energy security

"Promoting energy independence and security through reducing demand for refined petroleum use by motor vehicles has long been a goal of both Congress and the Executive Branch because of both the economic and national security benefits of reduced dependence on imported oil, and was an important reason for amendments to the Clean Air Act in 1990, 2005, and 2007."[684] Consistent with legislative intent, EPA has historically considered oil conservation and energy security in its GHG standards rules. EPA has explained that "[t]he goal of U.S. energy independence is the elimination of all U.S. imports of petroleum and other foreign sources of energy, but more broadly, it is the elimination of U.S. sensitivity to variations in the price and supply of foreign sources of energy." 89 Fed. Reg. at 28,113. Despite increases in domestic oil production that have made the United States a net energy exporter, EPA should continue to consider the energy security impacts of GHG standards and their repeal. As EPA explained in the 2024 LMDV Rule, combustion vehicles continue to present an energy security risk because the United States remains vulnerable to "episodic oil supply shocks and price spikes." 89 Fed. Reg. at 28,114. U.S. refineries continue to import heavy crude oil from potentially unstable regions of the world, and sudden disruptions in supply pose a threat to U.S. financial and strategic interests. 2024 LMDV Rule RIA at 10-1. Moreover, "oil exporters with a large share of global production have the ability to raise or lower the price of oil by exerting the market power associated with the Organization of Petroleum Exporting Countries (OPEC) to alter oil supply relative to demand," *id.*, which would cause oil price shocks that have greater impacts when nations are heavily reliant on oil. Because more stringent vehicle emission standards will significantly reduce U.S. reliance on foreign oil, *see* 89 Fed. Reg. at 28,114, Tbl.219 (showing decrease of 35,000 barrels of imported oil per day in 2027 and decrease of 2.1

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[683] *See, e.g.*, State of Illinois, *Illinois Drives Electric: Training and Degree Programs*, https://ev.illinois.gov/grow-your-business/training-and-degree-programs.html (noting various job programs with state funding); State of Michigan, *Gov. Whitmer Announces New EV Jobs Academy Website to Connect Michiganders to Careers in Electric Vehicle Industry* (Mar. 1, 2023), https://www.michigan.gov/leo/news/2023/03/01/gov-whitmer-announces-new-ev-jobs-academy-website-to-connect-michiganders-to-careers-in-ev-industry ("The EV Jobs Academy is designed to provide Michiganders with tuition assistance and supportive services, including 'earn while you learn' opportunities through a Registered Apprenticeship, to support and streamline onramps to high-wage, in-demand careers. With more than 100 partners including employers, industry stakeholders and education institutions, the EV Jobs Academy is driving the state's advanced mobility talent development for the future.").

[684] 89 Fed. Reg. at 28092 & n.1337 (collecting legislative authorities).

million barrels of imported oil per day by 2050), strong standards would enhance U.S. energy security and make progress toward the goal of energy independence.

The 2024 LMDV rule estimated it would reduce "U.S. gasoline consumption by 780 billion gallons through 2055," "reduc[ing] both financial and strategic risks caused by potential sudden disruptions in the supply of petroleum to the U.S., thus increasing U.S. energy security."[685] EPA monetized the energy security benefits at $1.6 billion to $2.1 billion per year, through 2055.[686] In the 2024 HD rule, EPA estimated the standards would reduce U.S. oil imports by 420,000 barrels per day by 2050, and similarly stated that the reductions would increase U.S. energy security.[687] The energy security benefits of the rule total $340–450 million annually by 2050.[688] EPA's proposal, however, does not even mention energy security.

In contrast to oil, electricity used in ZEVs will "improve the U.S.'s overall energy security position," 89 Fed. Reg. at 28,114, because electricity is generally more affordable and less price-volatile than oil, a point that numerous sources support.[689] Even more importantly, the electricity will be almost exclusively produced in the United States, "mov[ing] the U.S. towards the goal of energy independence." 89 Fed. Reg. at 28,114.

EPA also carefully assessed the mineral security implications of increasing EV use. In the 2024 Rules, EPA concluded that both ICE vehicles and EVs required critical minerals for their production. EPA also found that all vehicles—like most manufactured goods available today—are produced through complex global supply chains, such that mere reliance on imports does not create a unique national security vulnerability. Further, the agency identified sufficient quantities of critical minerals from a combination of domestic production and trade with friendly nations to enable EV production without undue reliance on suppliers that could raise national security concerns.[690]

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[685] 89 Fed. Reg. at 28092–93.

[686] 89 Fed. Reg. at 28093.

[687] *Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles: Phase 3, Regulatory Impact Analysis* at 803.

[688] 89 Fed. Reg. at 29457.

[689] *See, e.g.*, Talor Gruenwald, *Reality Check: The Myth of Stable and Affordable Natural Gas Prices*, Rocky Mountain Institute (Nov. 17, 2021), https://rmi.org/the-myth-of-stable-and-affordable-natural-gas-prices/ ("Electricity prices, which are driven by the costs of a variety of fuels including renewables, are much less susceptible to individual commodity price shocks."); Jeremy Martin, *Why Are Gasoline Prices So Volatile?*, Union of Concerned Scientists (Mar. 29, 2022), https://blog.ucsusa.org/jeremy-martin/why-are-gasoline-prices-so-volatile/ (explaining the price volatility of the oil market and noting that its global nature "means that US consumers remain vulnerable to changes in oil prices across the globe" and that "electricity prices are far less volatile than gasoline."); U.S. Department of Energy, *Saving Money with Electric Vehicles* (Sept. 28, 2022), https://web.archive.org/web/20230331153730/http://www.energy.gov/energysaver/articles/saving-money-electric-vehicles (noting that "electricity is less expensive than gasoline," and that "[p]etroleum prices are historically very volatile and change substantially over time," while "electricity prices are much more stable.").

[690] 89 Fed. Reg. at 28028–32.

EPA further concluded that critical minerals needed for EV batteries do not raise the same energy security concerns as petroleum because these minerals are not the source of energy for U.S. vehicles, but a component of their manufacture. The utilization of critical minerals is fundamentally different from the utilization of foreign oil. As EPA explained in the 2024 LMDV Rule, oil is consumed as a fuel and is a continuous input necessary for vehicle operation, while minerals are used only in the vehicle production phase and become a constituent of manufactured vehicles, with the potential to be recovered and recycled. 89 Fed. Reg. at 28,054. Minerals are "an input to the construction" of vehicles and their infrastructure rather than "a fuel that is combusted on an ongoing basis," meaning that "the near term risk is not one of 'traditional' energy security (short-term supply constraints or high prices)."[691] Critical minerals do not pose equivalent energy security concerns because, "unlike reliance on oil (where the resource is consumed with each trip) EVs consume locally produced electricity with each trip and additional lithium is only required when the battery is replaced or a new vehicle is purchased."[692] An event squeezing or shutting off the supply of oil would have "an almost immediate deleterious effect on transportation," but a squeeze in critical mineral supply would allow "batteries in existence [to] continue to function," and "there [would] not be a fundamental disruption of the transportation sector."[693] This is true in part because while ICE vehicles will always need oil, EV batteries can potentially substitute or replace particular critical minerals, with alternative novel battery formulations and battery recycling showing increasing promise.[694] Some firms have demonstrated novel electrolyte batteries that do not rely on the lithium-ion battery chemistry.[695] Solid-state battery technology has also made strides, including in the period since the 2024 Rules, promising batteries that charge much faster, pack more energy, and survive harsher conditions.[696] Moreover, whereas "fuel is burnt once," EV battery materials "can be reused and

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[691] Sara Hastings-Simon & Morgan Bazilian, *Critical Minerals Don't Burn Up – Why the Energy Security Playbook Needs a Re-Write*, Global Policy (July 23, 2020), https://www.globalpolicyjournal.com/blog/23/07/2020/critical-minerals-dont-burn-why-energy-security-playbook-needs-re-write.

[692] Fred Stein, *Ending America's Energy Insecurity: Why Electric Vehicles Should Drive the United States to Energy Independence*, 9 Homeland Security Affairs 14 (Feb. 2013), https://www.hsaj.org/resources/uploads/2022/04/9.1.4.pdf.

[693] *Id.*

[694] Amory Lovins, *Six Solutions to Battery Mineral Challenges*, RMI (2022), https://rmi.org/insight/six-solutions-to-battery-mineral-challenges/; Sudeshna Mohanty & Monkgogi Buzwani, *Understanding How EV Battery Recycling Can Address Future Mineral Supply Gaps*, RMI (2024), https://rmi.org/understanding-how-ev-battery-recycling-can-address-future-mineral-supply-gaps/; Alex K. Koech, Gershom Mwandila & Francis Mulolani, *A Review of Improvements on Electric Vehicle Battery*, Heliyon (2024), https://doi.org/10.1016/j.heliyon.2024.e34806.

[695] *Id.*

[696] Solid Power Battery, *BMW Group and Solid Power are Testing All-Solid-State Battery Cells in a BMW I7* (May 20, 2025), https://www.solidpowerbattery.com/investor-relations/investor-news/news-details/2025/BMW-Group-and-Solid-Power-are-Testing-All-Solid-State-Battery-Cells-in-a-BMW-I7/default.aspx; QuantumScape, *QuantumScape and PowerCo Debut Solid-State Batteries in Ducati Motorcycle at IAA Mobility* (Sept. 8, 2025), https://www.quantumscape.com/quantumscape-and-powerco-debut-solid-state-batteries-in-ducati-motorcycle-at-iaa-mobility/; Andrew J. Hawkins, *Stellantis' solid-state batteries can*

recovered in a circular loop to produce new batteries."[697] Recyclers such as Redwood Materials and Li-Cycle can recover up to 95% of the minerals from old batteries at commercial scale today.[698]

Paradoxically, EPA's RIA does monetize significant energy security costs to its proposal,[699] making the agency's failure to consider such costs even more arbitrary. That is, the agency itself knows that its proposal will create energy security harms, but nonetheless fails to consider such harms with no explanation.

h. Electric grid reliability

Recharging electric vehicles requires a supportive system of EV chargers and electricity infrastructure (distribution, transmission, and generation). To function well, the electric grid requires resource adequacy and grid reliability. EPA considered these factors in the 2024 Rules, finding there would be sufficient lead-time to develop supportive infrastructure to comply with the rule, that increasing EV penetrations in response to the rule would not significantly adversely affect grid reliability, that "increased use of electric charging and potential for vehicle-to-grid technologies … can benefit electric grid reliability,"[700] and that EPA's rules would create a supportive regulatory environment for existing and new infrastructure investments. In the HDP3 rule, EPA also made similar findings regarding the adequacy of infrastructure to support hydrogen refueling and the effect of the rule in supporting investments in such infrastructure.[701] In making these findings, EPA consulted with the Department of Energy and considered a landmark study produced by DOE and other experts.[702]

EPA recognized in 2024 that most major vehicle manufacturers, including Ford, GM, FCA, BMW, Audi, Nissan, Toyota, and Honda, had already been engaged in vehicle-grid

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fast-charge in just 18 minutes (Apr. 24, 2025), https://www.theverge.com/news/654768/stellantis-solid-state-batteries-charge-speed-temperature-factorial.

[697] Transport & Environment, *From Dirty Oil to Clean Batteries* 6–7, 41 (2021), https://www.transportenvironment.org/wp-content/uploads/2021/07/2021_02_Battery_raw_materials_report_final.pdf.

[698] Redwood Materials, *Recycling, Refining, and Remanufacturing Battery Materials for a Clean Energy Future*, Redwood Materials, https://www.redwoodmaterials.com/solutions/; Li-Cycle, *Full-Service Solution for Recycling Lithium-ion Batteries*, https://li-cycle.com/services/#closed-loop-battery-resource-recovery.

[699] *See* RIA Appendix A; *see also* RIA Appendix B (labeling "energy security" as "fossil-fuel risk"). For example, RIA Appendix A.1 at 26 shows $2.8–3.7 billion in annualized costs from "Energy Security, Refueling Time, & Drive Value" as a single category. Given that EPA claims it is using a similar methodology as the 2024 Rules in Appendix A, it is likely that the energy security costs represent a significant portion of the estimated values.

[700] 89 Fed. Reg. at 27900.

[701] *See* 89 Fed. Reg. at 29528–31.

[702] *See* U.S. Dep't of Energy, *Multi-State Transportation Electrification Impact Study: Preparing the Grid for Light-, Medium-, and Heavy-Duty Electric Vehicles*, v (Mar. 2024), EPA-HQ-OAR-2022-0985-3202, https://www.regulations.gov/document/EPA-HQ-OAR-2022-0985-3202 (concluding that the proposed

integration (VGI) efforts with research institutes, electric vehicle supply equipment (EVSE) providers, regulators, and electric utilities including Southern California Edison, Pacific Gas & Electric, and San Diego Gas & Electric.[703] These partnerships found that "the ability to shift and curtail electric power loads improves grid operations and, therefore, grid reliability" and "create[ing] value for electric vehicle drivers, electric grid operators, and ratepayers."[704] As EPA noted, managed EV charging can "reduce overall costs to utility ratepayers by delaying electric utility customer rate increases associated with equipment upgrades and may allow utilities to use electric vehicle charging as a resource to manage intermittent renewables or provide ancillary services."[705]

Third-party analyses have also found that ZEVs, if deployed strategically, can improve grid operations. For example, ZEVs can "contribute significantly to grid stability" and provide value to the grid through "deferred or avoided capital expenditure on additional stationary storage, power electronic infrastructure, transmission build-out, and more."[706] Additionally, utilities can deploy proven and emerging rate designs that ensure utilities recover costs, reliably serve ZEV charging load, improve ZEV owner experience, and take advantage of grid strengthening services from these vehicles.[707]

Researchers from Lawrence Berkeley National Laboratory estimate that using smart charging of light-duty EVs as a means to comply with California's energy storage procurement

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2024 Rules would "[r]esult in an incremental increase of 3% in annual electric vehicle charging infrastructure installations (including public and private infrastructure), [r]esult in an incremental distribution grid investment that equates to approximately 3% of current annual utility investments, [r]esult in a 30% reduction of those annual utility investments using basic managed charging techniques, illustrating the potential for additional cost savings from local load optimization, and, [r]esult in net consumer benefits, primarily in fuel savings, 2.5 times greater than the incremental charging and distribution grid costs" (cleaned up)).

[703] EPA, *Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles: Regulatory Impact Analysis* at 5-49.

[704] *Id.*

[705] *Id.*

[706] Chengjian Xu et al., *Electric Vehicle Batteries Alone Could Satisfy Short-Term Grid Storage Demand by as Early as 2030*, Nature Commc'n, Jan. 17, 2023, at 1, https://doi.org/10.1038/s41467-022-35393-0.

[707] *See e.g.,* Brittany Blair et al., Smart Electric Power Alliance, *Managed Charging Programs: Maximizing Customer Satisfaction and Grid Benefits* (2023), https://sepapower.org/resource/managed-charging-programs-maximizing-customer-satisfaction-and-grid-benefits/; Enel-X, *Understanding Smart EV Load Management* (Apr. 8, 2022), https://info.evcharging.enelx.com/whitepaper-download-ev-load-management-utility-dive; Zachary Needell, Wei Wei & Jessika E. Trancik, *Strategies for beneficial electric vehicle charging to reduce peak electricity demand and store solar energy*, Cell Reps. Physical Sci., Mar. 15, 2023, https://www.cell.com/cell-reports-physical-science/fulltext/S2666-3864(23)00046-2; Lily Paul & Maureen Marshall, CALSTART, *Not Just Smart: The Importance of Managed Charging* (2021), https://calstart.org/wp-content/uploads/2022/01/Managed-Charging-Paper-Final.pdf; Karen Kirk, *Yes, the grid can handle EV charging, even when demand spikes,* Yale Climate Connections (Mar. 23, 2023), https://yaleclimateconnections.org/2023/03/yes-the-grid-can-handle-ev-charging-even-when-demand-spikes/.

mandate (designed to facilitate the integration of renewable energy) would save utility customers approximately $1.5 billion because it is cheaper to use batteries customers have already purchased on four wheels than to pay private companies to deploy standalone battery storage.[708] The same study also found that enabling V2G technology, allowing EVs to supply power back to the grid during times of stress, could save $13-15 billion in stationary battery costs.[709] "By displacing the need for construction of new stationary grid storage, EVs can provide the dual benefit of decarbonizing transportation while lowering the capital costs for widespread renewables integration," the researchers concluded.[710]

Focusing on the Midwest to underscore the point, researchers concluded that very high levels of renewable energy penetration in the Midcontinent Independent System Operator region could result in "negative valleys" (requiring excess renewable energy to be exported or curtailed), but that "[c]ontrolled (EV) charging [both smart charging and smart discharging back onto the grid] is able to reduce these negative valleys, and with sufficient numbers of EVs can eliminate them altogether, obviating the need for either export of excess renewable generation or curtailment."[711] This would provide both increased environmental benefits by facilitating the integration of high levels of renewable generation and significant customer benefits. Put simply, it is cheaper to pay individual utility customers to use batteries on wheels they have already bought and paid for than it is to pay corporations to buy big batteries and park them on the grid.

In fact, EV charging has already put downward pressure on electric rates, to the benefit of all utility customers. Because much EV charging can be accomplished when there is spare capacity on the grid, charging can spread the costs of maintaining the system over a greater volume of electricity sales, reducing the per-kilowatt-hour price of electricity to the benefit of all customers. This has already been demonstrated in the real world. In fact, empirical data compiled by Synapse Energy Economics shows that EV drivers are not being subsidized by other utility customers and, in fact, they are putting downward pressure on rates. Between 2011 and 2021, EV customers in California contributed approximately $2.2 billion in net revenue to the body of utility customers.[712] That net revenue is returned to the body of utility customers in the form of electric bills that are lower than they would otherwise be.

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[708] Jonathan Coignard, et al., Clean Vehicles as an Enabler for a Clean Electricity Grid. Environmental Research Letters. V. 13, No. 5. (May 2018), at 4, 5, http://iopscience.iop.org/article/10.1088/1748-9326/aabe97.

[709] *Id.* at 5, 6.

[710] *Id.* at 1.

[711] Jeffery Greenblatt, et al., *Quantifying the Potential of Electric Vehicles to Provide Electric Grid Benefits in the MISO Area: Final report to the Midcontinent Independent System Operators. Lawrence Berkeley National Laboratory*, at 6, 56, https://www.researchgate.net/publication/340952556_Quantifying_the_Potential_of_Electric_Vehicles_to_Provide_Electric_Grid_Benefits_in_the_MISO_Area.

[712] Sarah Shenstone-Harris et al., *Electric Vehicles Are Driving Rates Down for All Customers*, Synapse Energy (May 2024), https://www.synapse-energy.com/sites/default/files/Electric%20Vehicles%20Are%20Driving%20Rates%20Down%20for%20All%20Customer%20California%20May%202024%2024-023.pdf; Sarah Shenstone-Harris et al., Electric

VGI continues to see meaningful advancement in the United States with advancements in bidirectional charging technology,[713] models for use of EV fleets as virtual power plants,[714] utilization of artificial intelligence,[715] and supportive policy frameworks. A January 2025 DOE report confirmed that VGI offers significant benefits to grid reliability, noting that while developing VGI requires significant work, "the benefits to the country are undeniably worth the effort."[716] According to DOE, "[a]ppropriately planned and implemented VGI will benefit all electricity consumers, including individuals and businesses, not only grid operators and EV owners."[717] RMI found that by 2030, "virtual power plants" including parked vehicles supplying energy to the grid could reduce peak loads in the United States by 60 gigawatts.[718] As this

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Vehicles are Driving Rates Down for All Customers, at 1 (Jan. 2024), https://www.synapse-energy.com/sites/default/files/Electric%20Vehicles%20Are%20Driving%20Rates%20Down%20for%20All%20Customer%20Update%20Jan%202024%2021-032.pdf.

[713] U.S. Dep't of Energy, *Bidirectional Charging and Electric Vehicles for Mobile Storage*, https://www.energy.gov/femp/bidirectional-charging-and-electric-vehicles-mobile-storage; EV Industry Blog, *7 Companies Driving Innovation with Vehicle-to-Grid (V2G)*, https://evchargingsummit.com/blog/companies-driving-innovation-with-vehicle-to-grid-v2g/; Driivz, *Emerging trends and future use cases for bidirectional charging*, https://driivz.com/blog/emerging-trends-and-future-use-cases-for-bidirectional-charging; Schneider Electric Blog, *Unleashing the potential of bidirectional vehicle charging for energy resilience and decarbonization*, https://blog.se.com/energy-management-energy-efficiency/2025/01/08/unleashing-the-potential-of-bidirectional-vehicle-charging-for-energy-resilience-and-decarbonization/; UL Solutions, *Strategies to Proactively Tackle bidirectional charging*, https://www.ul.com/insights/strategies-proactively-tackle-bidirectional-charging.

[714] Layra Nicli, *A Step Toward Zero Emissions with Virtual Power Plant*, City of Boulder News (Oct. 15, 2024) https://bouldercolorado.gov/news/step-toward-zero-emissions-virtual-power-plant; Sean Wolfe, *Flinders University deploys fleet-based vehicle to grid virtual power plant* (Oct. 5, 2023) https://www.renewableenergyworld.com/news/flinders-university-deploys-fleet-based-vehicle-to-grid-virtual-power-plant/; *Tesla Virtual Power PLant with PG&E*, https://www.tesla.com/support/energy/virtual-power-plant/pge; *Honda and Next Kraftwerke prequalify EV fleet for primary control reserve in Amprion's TSO zone*, Next Kraftwerke (Nov. 25, 2022), https://www.next-kraftwerke.com/news/control-reserve-honda; *2025 U.S. Vehicle-to-Grid (V2G) Market Outlook*, NUVVE, https://nuvve.com/2025-u-s-vehicle-to-grid-v2g-market-outlook/;

[715]Nagarajan Munusamy et al., A*I and Machine Learning in V2G technology: A review of bi-directional converters, charging systems, and control strategies for smart grid integration*, e-Prime - Advances in Electrical Engineering, Electronics and Energy (2024), https://www.sciencedirect.com/science/article/pii/S2772671124004352; Christoph Sommer and M.J. Hossain, *Artificial Intelligence-driven optimization of V2G and charging point selection en-route: A systematic literature review*, Energy Conversion and Management (Apr. 2025), https://www.sciencedirect.com/science/article/pii/S2590174525001102

[716] US Department of Energy, Vehicles-to-Grid Integration Assessment Report ii (Jan. 2025), https://www.energy.gov/sites/default/files/2025-01/Vehicle_Grid_Integration_Asseessment_Report_01162025.pdf.

[717] *Id*.

[718] Kevin Brehm, Avery McEvoy, Connor Usry & Mark Dyson, *Virtual Power Plants, Real Benefits*, Rocky Mountain Institute (2023), https://rmi.org/insight/virtual-power-plants-real-benefits.

capability continues to develop, there could be additional "revenue opportunities for [EV] owners for providing these grid services."[719] Research in Germany has shown that bidirectional EV charging can generate significant revenue for the typical German household: between 310 and 530 euros per year.[720] A recent successful vehicle-to-grid ("V2G") demonstration in North Carolina, taking place over two years, reveals the potential for V2G not only to improve grid optimization and resilience, but also to save consumers money. The North Carolina Clean Energy Technology Center explained that "[q]uantifying the potential value streams from bidirectional charging allows utilities to begin considering incentive payments and other EV program options for customers and members. By demonstrating significant positive value, this study encourages utilities in similar market conditions to help customers overcome the financial barriers to purchasing an EV, particularly in low- and moderate-income areas where these costs may restrict EV adoption."[721] Research by NREL has also considered net revenue generation from V2G services, including from private LDVs, and found significant potential.[722] The Union of Concerned Scientists has estimated that VGI enables electricity system savings, ranging from $1.8 billion (1 percent of system costs) to $11.7 billion (5 percent of system costs) per year in 2045.[723]

Successful examples of vehicle-grid integration abound. PG&E's Vehicle-to-Everything (V2X) pilot offers financial incentives for residential and commercial customers to participate.[724] In Oakland, California, the city uses 74 electric buses with bidirectional chargers to provide grid services during periods of high demand.[725] Similarly, SDG&E is exploring VGI through a "Dynamic Export Rate Pilot" that allows commercial customers to sell excess energy back to the

[719] Tuttle & Baldick (2015) at 11 (citing Quinn, C. et al., *The Effect of Communication Architecture on the Availability, Reliability and Economics of Plug In Hybrid Vehicle-to-Grid Charging*, 195 J. Power Sources 1500-1509 (Mar. 5, 2010)).

[720] Timo Kern, Patrick Dossow & Elena Morlock, *Revenue Opportunities by Integrating Combined Vehicle-to-Home and Vehicle-to-Grid Applications in Smart Homes*, 307 Applied Energy 1 (Feb. 2022), https://www.sciencedirect.com/science/article/pii/S0306261921014586.

[721] North Carolina Clean Energy Technology Center, *NC Cooperative Demonstration of Vehicle-to-Grid Smart Charger Concludes with Positive Results* (May 8, 2023),

https://nccleantech.ncsu.edu/2023/05/08/nc-cooperative-demonstration-of-vehicle-to-grid-smart-charger-concludes/.

[722] Darlene Steward, *Critical Elements of Vehicle-to-Grid (V2G) Economics*, NREL (Sept. 2017), https://www.nrel.gov/docs/fy17osti/69017.pdf.

[723] Samantha Houston et al., .*Harnessing the Power of Electric Vehicles* (June 16, 2025), https://www.ucs.org/resources/harnessing-power-electric-vehicles.

[724] Vehicle to Everything (V2X) Pilot Programs, https://www.pge.com/en/clean-energy/electric-vehicles/getting-started-with-electric-vehicles/vehicle-to-everything-v2x-pilot-programs.html.

[725] Oakland is now first in the US to deploy a 100% electric school bus fleet - and it's V2G, https://electrek.co/2024/08/19/oakland-is-now-first-in-the-us-to-have-a-100-electric-school-bus-fleet-and-its-v2g/.

grid.[726] The University of Delaware has partnered with local electric utilities and a regional transmission organization to have their vehicles plugged in and available when called upon for grid support, with the transmission organization paying the university the market rate, or roughly $1,200 per year per BEV.[727]

EVs equipped for VGI can also operate as mobile energy storage to supply critical household loads and community facilities during grid failures, strengthening resilience in disasters.[728] DOE has found that V2X-capable EVs can power homes (V2H) and buildings (V2B) and even assist with black-start and restoration following blackouts when properly integrated.[729] This is already available commercially: for example, Ford's F-150 Lightning "Home Backup Power" provides automatic whole-home backup and, depending on load, can sustain a home for multiple days.[730] These benefits are especially salient for rural households, which experience outages more often and for longer—2023 American Housing Survey data show 35.4% of rural households reported an outage (vs. 22.8% urban),[731] and EIA finds cooperative-utility customers (predominantly rural) have longer interruptions—making EV-based VGI a practical resilience tool beyond cities.

i. Safety

EPA has also failed to adequately consider the safety of EVs. The agency considered safety in previous light, medium and heavy-duty rules, finding that the safety of EVs is not a constraining factor in the appropriateness of protective GHG emissions standards. Although EPA briefly discusses safety in its fleet turnover discussion and alleges that reduced fleet turnover will negatively affect safety, the agency fails to address its prior detailed safety analysis in the 2024 Rules, or the safety analysis provided by NHTSA to support those rules.

In the 2024 multi-pollutant rule, EPA considered the impact of projected changes in vehicle weight on safety, including heavier BEV vehicles.[732] EPA relied on analysis developed by the National Highway Traffic Safety Administration (NHTSA), which found no statistically

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[726] *Dynamic Export Rate Pilot*, SDGE, https://www.sdge.com/sites/default/files/FINAL_S2570004-DynamicExportRatePilot-FS_ONLINE.pdf.

[727] U.S. Department of Energy, Federal Energy Management Program, *Bidirectional Charging and Electric Vehicles for Mobile Storage*, https://www.energy.gov/femp/bidirectional-charging-and-electric-vehicles-mobile-storage.

[728] U.S. Department of Energy, Vehicles-to-Grid Integration Assessment Report (Jan. 2025), https://www.energy.gov/sites/default/files/2025-01/Vehicle_Grid_Integration_Asseessment_Report_01162025.pdf.

[729] *Id.*

[730] What is Ford Home Backup Power?, https://www.ford.com/support/how-tos/electric-vehicles/home-charging/what-is-ford-home-backup-power/.

[731] Patrick Madamba, *About 1 in 4 Households Experienced a Power Outage in the Span of a Year*, Census.Gov (Oct. 2, 2024), https://www.census.gov/library/stories/2024/10/power-outages.html

[732] 89 Fed. Reg. at 28137-8; RIA Ch. 9.4.

significant impact on safety due to vehicle weight changes, holding vehicle footprint constant.[733] EPA notes in the final rule there is "strong reason to believe that PEVs are at least as safe as ICE vehicles, if not more so."[734] EPA also considered the possible safety effects of changes in fleet composition due to changes in new vehicle sales and fleet turnover, also relying on underlying analysis by NHTSA.[735] Based on these analyses, EPA concluded that "there are no changes to the vehicles themselves, nor the combined effects of fleet composition and vehicle design, that will have a statistically significant impact on safety."[736]

EPA also explained in its Phase 3 Heavy-Duty GHG rulemaking that numerous standards and codes are required by manufacturers to govern heavy-duty BEV safety.[737] The agency noted that BEVs must meet the same federal safety requirements and undergo the same safety testing as combustion vehicles.[738] EPA also requested input from NHTSA during the rulemaking process and included a summary of the correspondence to the docket.[739] Among other conclusions, NHTSA noted that when considering BEV weight risk, it is "not aware of differences in crash outcomes between electric and non-electric vehicles" and continues to monitor the topic closely and conduct extensive ongoing research. As part of NHTSA's Battery Safety Initiative, the agency works closely with the U.S. Department of Energy, U.S. Department of Homeland Security, vehicle manufacturers, standards development organizations, first responders, vehicle owners, and others to help advance high-voltage battery safety.[740] NHTSA is currently chairing the development of Phase 2 of Global Technical Regulation No. 20 for Electric Vehicle Safety at the United Nations.[741]

j. Environmental justice

EPA's proposal contains no mention of environmental justice, despite the well-established disproportionate public health and economic impacts of climate change on overburdened communities, as well as of criteria pollution on communities near freight corridors. While the statute does not require consideration of environmental justice, such considerations are unquestionably relevant to the statutory analysis of emissions impacts on public health and welfare. In contrast, both the 2024 Rules included a thorough discussion, including scientific

[733] 89 Fed. Reg. at 28137.

[734] *Id.*

[735] RIA Ch. 9.4.

[736] 89 Fed. Reg. at 28138.

[737] 89 Fed. Reg. at 29493; Phase 3 RIA Ch. 1.5.2.

[738] Dept. of Energy, *Maintenance and Safety of Electric Vehicles,* Alternative Fuels Data Center, https://afdc.energy.gov/vehicles/electric_maintenance.html.

[739] Landgraf, Michael. Memorandum to docket EPA–HQ–OAR–2022–0985. Summary of NHTSA Safety Communication. February 2024. https://www.regulations.gov/document/EPA-HQ-OAR-2022-0985-3561.

[740] Battery Safety Initiative, https://www.nhtsa.gov/battery-safety-initiative.

[741] *Id.*

assessments, of the impacts of GHG and non-GHG emissions on vulnerable or overburdened populations and the elevated concentrations of pollutants near roadways.[742]

Environmental justice "encourages agencies to consider whether the projects they sanction will have a disproportionately high and adverse impact on low-income and predominantly minority communities." *Sierra Club v. FERC*, 867 F.3d 1357, 1368 (D.C. Cir. 2017) (cleaned up). *See also Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 541 (8th Cir. 2003). Courts have recognized the importance of environmental justice. *See Friends of Buckingham v. State Air Pollution Control Bd.*, 947 F.3d 68, 87 (4th Cir. 2020) (quoting *Triangle Improv. Council v. Ritchie*, 402 U.S. 497, 502 (1971)) (Douglas, J., dissenting) ("As often happens with interstate highways, the route selected was through the poor area of town, not through the area where the politically powerful people live.")). Indeed, while "the term 'environmental justice' is of fairly recent vintage, the concept is not." *Jersey Heights Neighborhood Ass'n v. Glendening*, 174 F.3d 180, 195 (4th Cir. 1999) (King, J., concurring).

Communities that are overburdened with pollution from sources such as major roadways, industrial sites, and agriculture are predominantly low-income, and a large percentage of residents of these communities are people of color and non-English speakers.[743] The disproportionate impacts of pollution on these groups are not limited to conventional pollutants; EPA recognized in the 2009 Endangerment Finding that vulnerable populations, including economically and socially disadvantaged communities and Indigenous or minority populations, are especially vulnerable to climate change. 74 Fed. Reg. at 66498, 66534. EPA's previous rules cite ample evidence 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." 88 Fed. Reg. 29184, 29393–94 (May 5, 2023).

Additionally, EPA's own 2021 analysis on climate change and social vulnerability sets out the disproportionate climate impacts on vulnerable populations.[744] The report quantifies the increased risks of climate change for socially vulnerable populations in six categories: Air Quality and Health; Extreme Temperature and Health; Extreme Temperature and Labor; Coastal Flooding and Traffic; Coastal Flooding and Property; and Inland Flooding and Property, using data on where people live as an indicator of exposure.[745] The report concludes that Black and African American individuals will likely face higher impacts of climate change for all six impacts analyzed compared to all other demographic groups. Black and African Americans are 40% more likely to live in communities with the highest increase in premature mortality from extreme temperatures, and 34% are more likely to live in areas with the highest increases in

[742] 89 Fed. Reg. at 28130–36; 89 Fed. Reg. at 28691–97.

[743] *See* Gina M. Solomon et al., *Cumulative Environmental Impacts: Science and Policy to Protect Communities*, 37 Ann. Rev. of Pub. Health 83 (Jan. 6, 2016), https://www.annualreviews.org/content/journals/10.1146/annurev-publhealth-032315-021807.

[744] EPA, *Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts*, EPA 430-R-21-003 (Sept. 2021) ("Six Impacts"),https://www.epa.gov/system/files/documents/2021-09/climate-vulnerability_september-2021_508.pdf.

[745] *Id.* at 9.

$PM_{2.5}$ childhood asthma diagnoses with 2°C (3.6°F) of global warming.[746] Hispanic and Latinos are also significantly more likely to live in areas where impacts are projected to be highest.[747] Low-income individuals and those without a high school diploma have 25-26% greater risk of living in areas with the highest extreme temperature labor hours lost.[748]

With each unfolding disaster, it becomes clear that vulnerable populations suffer the most from climate change-fueled extreme events. For example, economically disadvantaged individuals, low-wage outdoor workers, and homeless and elderly people disproportionately died from heat stroke in the Northwest heat wave in 2021,[749] an event that researchers found would have been "virtually impossible without human-caused climate change."[750] In New York City, many people who could only afford to live in illegal basement apartments died as a result of flooding during Ida.[751] During western wildfire season, those without homes or means do not have the luxury of filtered air to protect their lungs.[752]

Updated analyses of environmental justice impacts may be found in separate comments filed by Climate Justice Alliance, Environmental Justice Leadership Forum, Moving Forward Network, Environmental Justice Health Alliance, and the Equitable and Just National Climate Platform. EPA's proposal utterly fails to consider any of these environmental justice impacts, or to explain why it no longer believes environmental justice considerations are relevant, and is thus arbitrary and capricious.

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[746] *Id.* at 79.

[747] *Id.* at 76.

[748] *Id.* at 77.

[749] *See, e.g.*, Umair Irfan, *Extreme Heat is Killing American Workers*, Vox (July 21, 2021), https://www.vox.com/22560815/heat-wave-worker-extreme-climate-change-osha-workplace-farm-restaurant; Nicholas Geranios, P*acific Northwest Strengthens Heat Protections for Workers,* AP News (July 9, 2021), https://apnews.com/article/business-science-health-environment-and-nature-washington-c463fc55ab6b601cf70b2fd73644f973; Danny Peterson, New Data ShowsScope of Heatwave-Related Homeless Deaths (July 23, 2021), https://www.koin.com/news/special-reports/new-data-shows-scope-of-heatwave-related-homeless-deaths/; Timothy Bella, *Historic Heat Wave in Pacific Northwest has Killed Hundreds in U.S. and Canada Over the Past Week, Wash. Post* (July 1, 2021), https://www.washingtonpost.com/nation/2021/07/01/heat-wave-deaths-pacific-northwest/.

[750] World Weather Attribution, *Western North American Extreme Heat Virtually Impossible Without Human-Caused Climate Change* (Jul. 7, 2021), https://www.worldweatherattribution.org/western-north-american-extreme-heat-virtually-impossible-without-human-caused-climate-change/.

[751] Matthew Haag & Jonah E. Bromwich, *As Ida Deaths Rise*, *N.Y. Leaders Look Toward Future Storms*, N.Y. Times (Sept. 3, 2021), https://www.nytimes.com/live/2021/09/03/nyregion/nyc-flooding-ida#nyc-illegal-basement-apartment-ida.

[752] *See, e.g.*, *Mara* Kardas-Nelson, *Racial and Economic Divides Extend to Wildfire Smoke, Too*, (Sept. 21, 2020), https://www.invw.org/2020/09/21/racial-and-economic-divides-extend-to-wildfire-smoke-too/.

k. Net benefits

In its draft RIA, EPA evaluates net benefits using seven scenarios across two major methodological approaches, which we term Method 1 and Method 2 in this section. EPA's analysis and resulting conclusions are riddled with errors. Given that EPA disclaims reliance on its DRIA,[753] we have chosen to highlight only the most egregious errors.[754] Should EPA decide to rely on the RIA in its final rule, the agency is legally obligated to notice a supplemental proposal and provide additional opportunity for public comment,[755] or else risk a final rule that is not a logical outgrowth of the proposal.[756]

Abandonment of consideration of net benefits. EPA presents the five Method 1 scenarios in the EO 12866 section of the preamble, with brief explanations. The supporting analysis for these scenarios is found in the RIA, on which, as already noted, EPA has disclaimed reliance. Absent the RIA, the preamble's net benefits analysis is technically unsupported. Although the agency's intent is murky, EPA's inclusion of net benefits solely in the EO 12866 preamble section, its disclaimer against reliance on the RIA, as well as the lack of mention of net benefits in any of the proposal's rationales, indicates the agency has abandoned consideration of net benefits in its rulemaking, despite the agency's history of doing so and the relevance of net benefits. EPA has failed to explain this change in position, rendering its proposal arbitrary and capricious.[757]

Failure to monetize emissions impacts. EPA's net benefits analyses entirely fail to monetize GHG impacts, despite the agency's history of monetizing such impacts, the existence of well-established methodologies for doing so, and the relevance of emissions reductions as a statutory factor and the statute's primary purpose. EPA also fails to monetize any public health impacts at all in Method 1. EPA's failure to monetize the emissions benefits of its proposed rule renders its cost-benefits analysis arbitrary and capricious.[758]

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[753] *See, e.g.,* 90 Fed. Reg. at 36326 ("The EPA has not relied upon any aspect of the draft RIA as justification for this proposed rulemaking.").

[754] Further discussion of the DRIA may be found in separate technical comments filed by EDF, NRDC, and other groups.

[755] *See* 42 U.S.C. § 7607(d)(3) (requiring EPA's proposal to include "a statement of its basis and purpose," including "a summary of the factual data on which the proposed rule is based; the methodology used in obtaining the data and in analyzing the data; and the major legal interpretations and policy considerations underlying the proposed rule.").

[756] *Env't Integrity Project v. EPA*, 425 F.3d 992, 996 (D.C. Cir. 2005) ("we have refused to allow agencies to use the rulemaking process to pull a surprise switcheroo").

[757] *Encino Motorcars, LLC v. Navarro* 136 S. Ct. 2117, 2126 (2016)). *See also Physicians for Soc. Resp.y v. Wheeler*, 956 F.3d 634, 644 (D.C. Cir. 2020); *FDA v. Wages & White Lion Invs., L.L.C.*, 604 U.S. 542, 567–569 (2025).

[758] *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (an agency action is arbitrary and capricious if it ignores important aspect of the problem), *Nat'l Ass'n of Home Builders v. EPA*, 682 F.3d 1032, 1040 (D.C. Cir. 2012) (an agency action is arbitrary and capricious if it relies on a flawed cost-benefit analysis).

Massive net social harms. Under scenarios 1 and 2 of Method 1, EPA estimates that the proposal creates large net harms to society. Scenario 2, which accounts for recent changes in IRA tax credits and the ACT program, shows the largest net harms, up to $350 billion. EPA fails to explain why it is adopting a rulemaking that creates such massive social harms.

Failure to monetize legacy standards and compliance provisions. EPA appears to only monetize the effects of repealing the 2024 GHG standards, even though it is proposing to repeal all the GHG standards and related compliance provisions. Nowhere does EPA consider, for example, the costs to vehicle owners of losing regulatory assurance of continued GHG performance and its relationship to fuel economy for in-use vehicles, extended battery and related warranties, and battery monitoring information. EPA's failure to consider these costs is arbitrary and capricious.

Arbitrary assumptions that cut across modeling scenarios. EPA makes clearly arbitrary assumptions that infect multiple modeling scenarios. For example, EPA confesses that all of its Method 1 models do "not account for the fact that standards for non-GHGs finalized in the LMDV rule (such as particulate matter (PM2.5) and non-methane organic gases plus nitrogen oxides (NMOG+NOX) standards) will remain in place."[759] In fact, EPA's analysis appears to arbitrarily attribute the entire cost of the 2024 LMDV multi-pollutant rule (including for the 2024 LMDV criteria pollutant standards) to the GHG standards, but neglects to account for any of the emissions benefits of that rule—whether the GHG benefits or the benefits of the 2024 LMDV multi-pollutant program. This makes no sense at all.

Arbitrary assumptions regarding lower fuel prices. EPA's Scenarios 3 and 5 assume lower liquid fuel prices. EPA alleges that such assumptions are appropriate based on "[r]ecent projections of future gasoline and diesel prices from the U.S. Energy Information Administration (EIA) as well as changes in Administration and policies."[760] The agency also acknowledges that "[p]redicting future gasoline and diesel prices, specifically 10 – 15 years or more in the future, is difficult due to high uncertainty."[761] EPA describes this assessment as "a fuel price sensitivity assessment which examines the impact lower fuel prices have on some program costs and benefits."[762]

The agency's lower fuel price sensitivity is biased and unreasonable. First, should EPA wish to reasonably consider the uncertainty in projecting future liquid fuel prices, the agency should assess both lower and higher price sensitivities, not merely lower price sensitivities. A higher sensitivity case for liquid fuel prices would show even greater net societal damages than the $350 billion in damages projected in Scenario 2, further demonstrating the arbitrary nature of EPA's proposed repeal.

[759] DRIA at 26.

[760] DRIA at 4.

[761] DRIA at 7.

[762] DRIA at 10.

Second, the agency uses "$1.00/gallon lower gasoline cost and a $0.25/gallon lower diesel cost" for the sensitivity,[763] and purports to justify these based on AEO2025 and changing Administration policies. We acknowledge that AEO2025's gas and diesel price projections are somewhat lower than the AEO2023 projections used in the 2024 Rules. But as EPA's own RIA shows, the AEO2025 projections do not support the fixed $1/gallon gasoline and $0.25/gallon diesel price reductions relative to AEO2023. For example, at no point does the AEO2025 gasoline price fall $1 or more per gallon relative to AEO2023.

Third, EPA paradoxically asserts 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."[764] The agency then presents the AEO2025 Alternative Transportation case, which explicitly models the Trump Administration's policy of rolling back vehicle tailpipe and fuel economy standards.[765] These policies are intended to reduce the deployment of more fuel-efficient internal combustion engine vehicles as well as electric vehicles, with the direct impact of increased liquid fuel use. The increase in liquid fuel demand naturally leads to an increase in liquid fuel prices, a fact that EPA recognizes elsewhere in its RIA.[766] Consistent with this basic economic logic, the AEO2025 Alternative Transportation case shows higher prices, especially gasoline prices, in many years relative to the AEO2025 base case. For example, EIA projects gasoline prices will *increase* by $0.72/gallon in 2050 due to the Trump Administration's transportation policies, relative to the AEO2025 base case, albeit EIA still projects a slight decrease of $0.15/gallon relative to AEO2023. EPA appears to endorse the EIA analysis but fails to explain how it can assert a $1/gallon drop in gasoline prices given EIA's contradictory factual findings. EPA's assumptions run counter to the agency's chosen evidence, basic economic logic, and the expert findings of a sister agency with expertise.[767]

Arbitrary assumptions regarding consumer valuation of fuel savings. EPA's Scenarios 4 and 5 assume only 2.5 years of fuel savings. EPA's reasoning is internally inconsistent and fails to explain deviations from past rulemakings. To begin with, EPA's

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[763] DRIA at 10.

[764] DRIA at 9.

[765] *See* Energy Info. Admin., *Annual Energy Outlook 2025 Narrative* (Apr. 15, 2025) https://www.eia.gov/outlooks/aeo/ ("Our Alternative Transportation case assumes the National Highway Traffic Safety Administration's Corporate Average Fuel Economy standards and EPA's vehicle tailpipe emission standards for model years 2027–2032 are not in place. The case also assumes the California Air Resources Board's zero-emission vehicle sale mandates for trucks issued since our last published AEO are not in place. Rules affecting fuel economy and tailpipe emissions that were issued for model years 2026 and earlier remain in place. In this case, introduction of new electric vehicle (EV) models and building of EV charging infrastructure are based on growth in EV sales and registrations rather than on announced public and private sector plans. In addition, manufacturer reshoring of EV and battery supply chains, including growth in eligibility for credits under the Inflation Reduction Act, is slower than in the Reference case.").

[766] *See, e.g.*, RIA at 42 ("the proposed action will increase U.S. fossil-fuel demand. . . . This annualized cost is estimated at about $1 billion to $2 billion."); *id.* at 21 (estimating net costs for "Energy Security, Refueling Time, & Drive Value").

[767] *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506 (D.C. Cir. 1983).

assumption of 2.5 years of fuel savings is inconsistent with the agency's own summary of its chosen research studies, which "consistently suggest that buyers value a large proportion—and perhaps even all—of the future savings that models with higher fuel economy offer."[768]

EPA also states that "[i]f instead consumers systematically undervalue the cost savings generated by improvements in fuel economy when choosing among competing models due to some market failure such as an information asymmetry that leads to an underinvestment in fuel-saving technology, then more stringent fuel economy standards will lead manufacturers to adopt improvements in fuel economy that buyers might not choose despite the cost savings they offer and thus improve consumer welfare."[769] In other words, if consumers truly do undervalue fuel savings, then adopting "more stringent" standards will generate fuel economy improvements that "improve consumer welfare." This makes sense—where there is a market failure and consumers exhibit economically irrational behavior, government regulation can ensure greater social surplus.[770] But this directly contradicts EPA's analysis in Scenarios 4 and 5, which claim that consumers' valuation of 2.5 years of fuel savings mean the GHG standards are harmful to society.

Even assuming EPA is correct that consumers only value 2.5 years of fuel savings at the point of purchasing a new vehicle, EPA fails to explain why that means EPA should only value 2.5 years of fuel savings in its net benefits analysis. That is, even if the consumer does not account for later year fuel savings at the point of purchasing the new vehicle, the consumer nonetheless accrues such savings over time. For example, imagine if fuel savings are $500 / year. Perhaps the consumer values only $1,250 of fuel savings at the time of purchase, but the consumer nonetheless saves $500/year in years 3, 4, 5, etc. Those savings are real, and thus logical to value in assessing consumer benefits. EPA, moreover, has historically already accounted for human tendency to value near-term benefits over future benefits by discounting future year fuel savings.

The same principles remain true when assessing social benefits, which is the goal of the EO12866 analysis. Indeed, OMB's Circular A-4 specifically addresses fuel savings and in that context states that "any direct costs that are averted as a result of a regulatory action should be monetized wherever possible and either added to the benefits or subtracted from the costs."[771] As with consumer savings, social benefits also incorporate discounting to reflect the human tendency to value near-term benefits over future benefits. EPA fails to explain its deviation from OMB's guidance and established principles for benefit-cost analysis.

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[768] DRIA at 15.

[769] DRIA at 13.

[770] *See also* Exec. Order No. 12866, 58 Fed. Reg. 51735, 51736 (1993)("Federal agencies should promulgate only such regulations as are required by law, are necessary to interpret the law, or are made necessary by compelling public need, such as material failures of private markets to protect or improve the health and safety of the public, the environment, or the well-being of the American people."); Off. of Mgmt. & Budget, Exec. Off. of the President, Circular No. A-4, Circular A-4, 3–4 (2003) ("OMB Circular A-4")(same).

[771] OMB Circular A-4 at 38.

Failure to account for sensitivities modeled in the 2024 Rules. EPA suggests that changing circumstances affect the Regulatory Impact Analysis performed for the 2024 Rules, rendering their assumptions no longer appropriate. While we agree that updated modeling is appropriate in this rulemaking to account for updated facts, EPA fails to address its own prior conclusions that even with significantly changing facts, the agency had concluded the final standards were appropriate. For example, in the 2024 LMDV Rule, EPA modeled a large number of sensitivities,[772] including for example large increases in the costs of EVs associated with higher than predicted battery costs as well as significant lower consumer acceptance of BEVs, and nonetheless concluded that the standards were reasonable when considering the whole range of sensitivities.[773]

Revealed preference approach is arbitrary. EPA's revealed preference method for calculating benefits (termed "Method 2" above) is arbitrary and capricious for numerous reasons, as set forth in the separate technical comments of EDF and other organizations.

Change from 2% discount rate unexplained and arbitrary. EPA utilizes a three and seven percent discount rate for comparing near- and long-term costs and benefits.[774] In the RIA EPA explains the agency is following the OMB guidance which "recommends agencies to use three and seven percent annual discount rates."[775] This is in contrast to EPA utilizing a two percent discount rate in its 2024 Rules. EPA fails to explain its decision to revert to three and seven percent discount rates, and its choice is inconsistent with recent science and economics, which support retaining a 2% (or even smaller) discount rate to better reflect the impact of the proposal on future generations. We further discuss this issue in EDF's separate technical comments.

EPA's proposal would create massive net societal harms. Updated analyses demonstrate that the GHG standards continue to provide enormous net benefits for society—notwithstanding the recent changes to tax credits and other factors identified by EPA—and that EPA's proposal to repeal the standards would conversely cause enormous harms. We summarize these analyses in section II of this comment, with more detailed discussion present in separate comments filed by EDF and NRDC.

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[772] 89 Fed. Reg. at 28,068–85.

[773] 89 Fed. Reg. at 28,091 ("For this rule, EPA finds that standards are feasible in the lead time available, and that the expected compliance costs for automakers are reasonable, in light of the emissions reductions in air pollutants and the resulting benefits for public health and welfare. In making this finding we have considered our central case projection, as well as the full range of sensitivity analyses, considering the range of the projected costs, their respective likelihoods, the factors underlying them (e.g., differences in battery costs or consumer acceptance), and their relationship to the central case, for each of light-duty and medium-duty.").

[774] 90 Fed. Reg. 36,326.

[775] DRIA at 42.

iii. The 2024 Presidential election is not a cognizable legal basis to justify repealing the GHG standards.

EPA's proposal makes the extraordinary claim that "the election of a new Administration is an independent and sufficient basis for changing legal interpretation and policy within the boundaries set by statute."[776] For support, EPA cites Justice Rehnquist's separate opinion in *State Farm* and cases citing that opinion.

Undoubtedly, a new Presidential administration is entitled to adopt new policies within the constraints of existing law. But an administration change does not dispense with the agency's obligation to comply with the Administrative Procedure Act or the requirements of reasoned decisionmaking, under which the agency must acknowledge policy changes, explain why the agency is adopting the new policy, and adduce a more detailed justification where the new policy undermines serious reliance interests or contradicts prior factual findings.[777] Nor does it give the agency carte blanche to ignore statutory factors, as Justice Rehnquist's separate opinion in *State Farm* notes, albeit in a section EPA fails to cite.[778] No election is an excuse to dispense with the rule of law.

D. EPA failed to adequately consider reliance interests

EPA has set steadily more stringent greenhouse gas emission standards for new vehicles since 2010, providing regulatory certainty for vehicle manufacturers and myriad upstream and downstream businesses that supply the materials and infrastructure necessary to build less polluting vehicles. For over 15 years, vehicle manufacturers and entities spanning the entire supply chain, from mining critical minerals to battery making, charging stations, and vehicle-to grid integration, have built their business plans in response to standards that carefully account for technical feasibility, industry costs and lead time, enabling sound corporate asset allocation and planning for years and even decades into the future.[779] America's business community has invested hundreds of billions of dollars in reliance on this regulatory stability.[780] It made these investments in reliance on reasonable expectations of profits, and their investors and

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[776] 90 Fed. Reg. at 36,297.

[777] *See generally FDA v. Wages & White Lion Invs., LLC*, 145 S. Ct. 898, 917–18 (2025)("White Lion") (citing *Encino Motorcars, LLC v. Navarro*, 579 U. S. 211, 221–22 (2016); *FCC v. Fox Television Stations*, Inc., 556 U. S. 502, 515 (2009); *Motor Vehicle Mfrs. Ass'n of United States, Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U. S. 29, 43 (1983)).

[778] *State Farm*, 463 U.S. 29, 59 n.* (1983) (Rehnquist, J., concurring in part and dissenting in part) ("Of course, a new administration may not choosenot to enforce laws of which it does not approve, or to ignore statutory standards in carrying out its regulatory functions.").

[779] For example, EPA's 2012 vehicle greenhouse gas rule alone prescribed standards through 2025, creating industrial certainty for 13 years.

[780] Blue Green All. Found., *EV Job Hubs* ("BGA EV Job Hubs"), https://evjobs.bgafoundation.org/ (last updated Sept. 18, 2025).

shareholders have made their decisions on the same basis. Vehicle manufacturers have also relied on a thriving credit market to facilitate this long-term business planning.

The public also relies heavily on and benefits from EPA's rules. Consumers looking to purchase new (and used) vehicles now have ever-increasing choices among the light-, medium- and heavy-duty vehicle fleets, from fully electric vehicles to various forms of hybrids, with luxury or scaled-down trims and featuring different driving ranges, styles, sizes, functions and price ranges.[781] They have invested in the EV market in numerous ways – they have paid for their vehicles and home chargers,[782] purchased and installed solar systems to charge those vehicles,[783] and learned where and how to charge their vehicles on the road. They will continue to rely on EPA's rules as they continue these activities and seek to purchase ever less polluting vehicles coming to market that feature ever more options.

Americans also rely, now and in the future, on well-paying jobs created by the industries up and down the electric vehicle supply chain, pinning their education, economic future and professional advancement on the continuation of EPA's greenhouse gas vehicle standards. As of 2024, the electric vehicle industry employed 410,000 people whose prospects are now uncertain.[784]

And most if not all of the nation's 50 states and numerous municipalities have relied on EPA's standards. As discussed below, among other things many have invested and plan to continue to invest in climate action plans, EV charging stations, grid infrastructure, and utility planning and infrastructure in anticipation of expanding electric vehicle charging. They have purchased electric vehicles for their government-owned fleets and are relying on strong rules to supply these vehicles and expand their vehicle choices. The states have also relied on these standards to maintain or come into compliance with National Ambient Air Quality standards. But all these reliance interests of regulated businesses, businesses in the supply chain, the public and the states are all in grave jeopardy if EPA finalizes the Proposal.

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[781] Coltura, *Electric Car Range and Price Comparison – Updated 2025*, https://coltura.org/electric-car-battery-range; *see also* Section III, *infra*.

[782] Over 94% of survey respondents report charging their EVs at home. Plug In Am., *2025 EV Driver Survey - Plug In America* (June 2025), https://pluginamerica.org/survey/2025-ev-driver-survey/, and 88% of EV drivers use dedicated 240 V outlets and cables for charging. Consumer Reps., *How to Find the Best Home EV Charger* (Aug. 2025), https://www.consumerreports.org/cars/hybrids-evs/how-to-choose-the-best-home-wall-charger-for-your-electric-vehicle-a6908889697/.

[783] The correlation between owners of EVs and ownership of home solar installations is strong. A 2024 NREL study showed that in 2018, 25% of electric vehicle owners also owned a photovoltaic solar system, while only 8 percent of the non-electric vehicle owners owned solar systems. Am. Pub. Power Ass'n, *NREL Study Shows Correlation Between EV Ownership and Household Solar Panels* (Jan. 2024), https://www.publicpower.org/periodical/article/nrel-study-shows-correlation-between-ev-ownership-and-household-solar-panels.

[784] *Clean Jobs America 2024, IRA Drives Clean Economy Job Surge, E2's Ninth Annual Analysis of U.S. And State Clean Energy Sector Employment,* at E2 (Sept. 2024), https://cleanjobsamerica.e2.org/wp-content/uploads/2024/09/E2-2024-Clean-Jobs-America-Report_September-17-2024.pdf.

When agencies change their position or prior policies, they must consider the reliance interests that have arisen from those prior positions.[785] They must both be "cognizant that longstanding policies may have engendered serious reliance interests that must be taken into account," and also provide "[a] reasoned explanation . . . for disregarding facts and circumstances that underlay or were engendered by the prior policy."[786] Stated another way, when rescinding a rule, an agency, because it is "not writing on a blank slate," must "assess whether there were reliance interests, determine whether they were significant, and weigh any such interests against competing policy concerns."[787]

That EPA here *is* changing its position is indisputable, as it disavows all of its prior, inconsistent rulemakings, declares them to be "no longer good law"[788] and "abandon[s] decades-old practice."[789] But aside from vaguely noting – though mischaracterizing and minimizing – limited reliance interests by auto manufacturers, importers and sellers, EPA fails even to identify the numerous other stakeholders, let alone provide reasonable explanations for why it can ignore their interests. Instead, EPA asks *commenters* to state whether any reliance interests might exist.[790] Yet the massive reliance interests by numerous entities are glaringly obvious *now*, and EPA's failure to identify them *in its Proposal* deprives the public of the ability to comment on what factual determinations EPA might make and what rationale it might advance.[791] Should EPA, in the final rule, discuss reliance interests beyond those it has nodded to here, or finally provide explanations about how it weighed those or any newly identified reliance interests against its policy choices, it must provide the public with a new comment period, which would be its "first occasion" for "meaningful commentary."[792] Finalizing the proposed rule based upon the Agency's defective approach to considering reliance interests would be arbitrary and unlawful.

i. EPA's disregard of vehicle manufacturer's reliance interests.

EPA casually swats aside even the few reliance interests it does acknowledge. It notes it is "aware that manufacturers, importers, and sellers have already expended resources complying with GHG emission standards for MYs 2012 through 2026," but opines that, "with the notable

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[785] *White Lion,* 145 S. Ct. at 917;. *Encino Motorcars,* 579 U.S. at 221–22; *FCC v. Fox Television Stations, Inc.,* 556 U.S. 502, 515.

[786] *White Lion*, 145 S. Ct. at 918, citing *Encino Motorcars* (internal quotation omitted).

[787] *Dept. of Homeland Sec.,* 591 U.S. at 33.

[788] *Fox Television,* 556 U.S at 517 (internal quotation marks omitted).

[789] *Encino Motorcars,* 579 U.S. at 218.

[790] *E.g.,*90 Fed. Reg. at 36324 ("We seek comment on the nature and extent of any reliance interests that may have arisen from our assertion of regulatory authority over GHG [vehicle] emissions.")

[791] *E.g.,* 90 Fed. Reg. at 36,324 (*"*We . . . are committed to assessing any such interests [identified by commenters], determining whether they are significant, and weighing such interests against competing rationales . . ..")

[792] *Fertilizer Inst. v. EPA,* 935 F.2d 1303, 1311 (D.C. Cir. 1991) (a final rule is not a logical outgrowth of a proposal if it states new arguments and evidence).

exception of the need to purchase compliance credits, this proposed action would have limited impacts on MYs 2012 to 2024, greater impacts for MYs 2024-2026, and would entirely relieve future regulatory obligations for MY 2027 and beyond."[793] It then adds that "we are confident that the Agency has adequate regulatory tools to address transitional compliance concerns and note that this proposed action would not, if finalized, mandate any particular response by regulated parties."[794] In other words, despite its awareness of this fraction of the overall problem, EPA nonetheless says nothing about what those "regulatory tools" might be, how it might apply them, or how the reliance interests should be weighed against other policies. It provides no analysis of the scope or monetary value of the rescissions' "impacts" on any of the three vehicle model year segments it names, and no explanation of why and how they should be weighed in context. In short, EPA provides no "reasoned explanation" for "disregarding facts and circumstances that underlay or were engendered by the prior policy."[795] And even though EPA promises to somehow address "the need to purchase compliance credits," there is no hint how EPA might actually do that.[796]

a. Vehicle manufacturer investments

As EPA notes, manufacturers and importers selling EVs in the United States have "already expended resources" to comply with greenhouse gas emission standards in effect from MY 2012 through MY 2026," but EPA omits disclosing the amount of these expenditures.[797] In fact, the total facility investments vehicle manufacturers and battery makers made from 2012 (the date by which the first vehicle greenhouse gas standard required compliance) to August 2025 in reliance on EPA's rules is $104 billion.[798] Of that amount, they spent $84 billion on projects now in operation, and $20 billion on projects now under construction.[799] During the same time period, other entities (those involved in mineral extraction, battery recycling, auto parts, and building EV chargers) collectively spent another $24.42 billion on projects now either in operation or under construction ($9.85 billion on mineral extraction, $7.58 billion on battery recycling, $6.05 billion on auto parts, and $1 billion on manufacturing EV chargers).[800] And, the total investments in facilities already in operation, under construction and announced by all businesses up and down the supply chain from 2007 to August 2025 amounts to $211 billion.[801] EPA has not justified why

[793] 90 Fed. Reg. at 36297.

[794] *Id.*

[795] *White Lion,* 145 S. Ct. at 917.

[796] 90 Fed. Reg. at 36297.

[797] *Id.*

[798] BGA EV Jobs Hub Investment Overview Data at "Investments" tab (data pulled Aug. 2025). A spreadsheet with the underlying data is included as an attachment to these comments (hereinafter "BGA EV Jobs Hub"). Note that these numbers do not include planned investments of facilities not yet operational or under construction.

[799] BGA EV Jobs Hub at "Investments" tab.

[800] *Id.*

[801] *Id.*

these enormous investments in reliance on EPA's greenhouse gas vehicles standards over nearly two decades should be disregarded.[802]

EPA states that for vehicle manufacturers, importers and sellers the Proposal would "have limited impacts on MYs 2012 to 2024, greater impacts for MYs 2024-2026, and would entirely relieve future regulatory obligations for MY 2027 and beyond."[803] This throwaway line does not come close to meeting EPA's legal obligations – it understates and misrepresents vast and complex reliance issues. Vehicle manufacturers must, and do, plan for and spend money to get ready to comply with new standards many years in advance of their effective dates, beginning even before 2010 when EPA finalized the first vehicle greenhouse gas rule. This *includes* MYs 2027 and later vehicles. MY 2027 vehicles will enter the market in early 2026, and vehicle manufacturers have already begun investing in building vehicles meeting the requirements for MY 2027 years and later.[804]

In addition, EPA ignores not only the investments vehicle manufacturers and others in the supply chain have already made, but also the fact that they invest – whether in EVs or hybrids or less emitting internal combustion vehicles – with reasonable expectation of generating future profits.[805] Those profits hinge to a large extent on the existence and continuation of reliable, incrementally more stringent regulations requiring the production of less emitting vehicles, leading to manufacturing at scale, reduction of overhead, lower margins, profitability and an eventual return on investment commensurate with the massive expenditures undertaken. EPA

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[802] *See* Rhodium Grp., *Global Clean Investment Monitor: Electric Vehicles and Batteries* (June 18, 2025) at 4–7, https://rhg.com/research/global-clean-investment-monitor-electric-vehicles-and-batteries/ (describing the global race towards clean transportation technology and the doubts U.S. policy changes have cast on the outlook for EV manufacturers and others in the supply chain in the U.S); Rhodium Grp., *Three Key Outcomes of the "One Big Beautiful Bill Act" on US Manufacturing and Innovation* (June 9, 2025) at 1–7, https://rhg.com/research/three-key-outcomes-of-the-one-big-beautiful-bill-act-on-us-manufacturing-and-innovation/ (describing risks of losses in clean energy investments as a result of the bill and other policy changes).

[803] 90 Fed. Reg at 36297; EPA's nod to credit implications is discussed below.

[804] "Engine design and development cycles [for vehicles] are typically much longer than three years." *Answering Brief for Respondent-Intervenor Alliance for Automotive Innovation* (July 29, 2024) at 18, *Iowa v. Granholm,* No. 24-1721, Entry ID 5418429 (8th Cir. 2024); *see also* EPA's own statement at 89 Fed. Reg. ag 28086 ("manufacturers generally require about five years to design, develop, and produce a new vehicle model").

[805] *E.g.,* "We're also deep into the development of our future electric vehicles, which we expect to be profitable, affordable, and high volume." Ford, *Helping Build a Better World* at 3 (2025), https://corporate.ford.com/content/dam/corporate/us/en-us/documents/reports/2025-integrated-sustainability-and-financial-report.pdf. "Ford's ability to optimize investments and planning for compliance is hampered by sudden or frequent changes in applicable emissions and fuel economy standards and ZEV requirements." *Id.* at 10. "Our long-term strategy is dependent upon our ability to profitably deliver a strategic portfolio of EVs." Gen. Motors Co., *Form 10-K* at 12 (Jan. 28, 2025), https://investor.gm.com/static-files/80738255-1f59-4f20-9b33-c6f958d50256.

says nothing about those reliance interests in its Proposal, which would massively disrupt the auto industries' decades-long effective deployment of capital.[806]

Moreover, historical evidence shows that repeal of the rules will very likely lead to vehicle manufacturers ending up with expensive, underutilized "sunk" or "stranded" assets that do not fully recoup the sums already expended, much less produce the profits expected. Even during the periods when emission standards simply remained flat (a much less drastic event than the unprecedented evisceration proposed here), vehicle manufacturers have *not* produced less polluting vehicles. EPA's own studies establish this effect. Figures 2.1 and 2.2 in EPA's 2024 Automotive Trends Report ("Trends Report") show vehicle manufacturers built less-polluting vehicles and thus achieved significant emissions reductions *only* during periods when vehicle mileage or emission standards *increased* in stringency. Specifically, Figure 2.2 shows an emission *decrease* of 41% from 1975 to 1987, and a similar *decrease* of 31% from 2005 to 2023, both periods when the stringency of standards steadily increased – but an emission *increase* of 14% from 1988 to 2004, when the standards' stringency remained flat.[807] This evidence, spanning data accumulated over 50 years, strongly indicates that the proposed rescission of all EPA greenhouse gas emission standards would have the same effect, creating stranded assets for vehicle manufacturers and their suppliers.

EPA has not identified or examined these reliance interests, much less explained how they should be weighed against competing interests or why they should be overridden. But without knowing, or at least estimating, what is at stake and what effects its Proposal will have on the automotive industry at large, it cannot begin to assess its significance or provide a reasonable explanation for its action.

b. Credits

The agency does identify a reliance interest arising from "the need to purchase compliance credits"[808] and vaguely refers to the availability of "regulatory tools to address transitional compliance concerns."[809] In reality, much more is at issue. A thriving credit market is a crucial compliance mechanism for vehicle manufacturers. If their average fleets fall short of the standards in any given year, they can avoid noncompliance by using offsetting credits they earned through earlier overcompliance or bought from others. Vehicle manufacturers use credits

[806] For example, Ford is already experiencing an oversupply in batteries because of weakened U.S. demand in response to changes in federal policies. EVXL, *Ford EV Batteries Face Oversupply as Demand Slows in U.S. Market* (Aug. 2025), https://evxl.co/2025/08/19/ford-ev-batteries-face-oversupply/.

[807] Trends Report at 6, 7; *see also* Consumer Reps., *EPA Trends Report Shows Automakers Failed to Deliver Fuel Economy Gains Between Model Years 2020 and 2021* (Dec. 12, 2022), https://advocacy.consumerreports.org/press_release/epa-trends-report-shows-automakers-failed-to-deliver-fuel-economy-gains-between-model-years-2020-and-2021; Consumer Reps., *Blog: Strong Efficiency and Emissions Standards Deliver Thousands in Fuel Svings for Consumers* (Jan. 14, 2025), https://advocacy.consumerreports.org/research/blog-strong-efficiency-and-emissions-standards-deliver-thousands-in-fuel-savings-for-consumers/.

[808] 90 Fed. Reg. at 36297.

[809] 90 Fed. Reg. at 36297.

for a total of eight years to make up for shortfalls – for up to five years after and up to three years before the end of any MY. They also use credits earned by overcompliance in one of their vehicle fleets to offset deficits in another. Vehicle manufacturers also trade credits, buying and selling them among themselves. Throughout the years, vehicle manufacturers have accumulated considerable and highly valuable credit banks for these purposes.

EPA's Trends Report shows credit usage over time. Figure 5.14 shows that at the end of MY 2023 (the latest date for which this information is available), all but three of the manufacturers selling vehicles in the United States had a positive credit balance for light-duty vehicles,[810] and truck manufacturers likewise carried positive credit balances from the Phase 1 into the Phase 2 heavy-duty GHG emissions standards,[811] meaning these vehicle manufacturers possessed valuable commercial instruments they could sell or trade. Vehicle manufacturers have relied for years to build their products and spread their costs over multiple MYs. But the Proposal would render them worthless at the stroke of a pen.

The effects of EPA's Proposal on credits is currently playing out in the context of a lawsuit challenging a recent rulemaking by the National Highway Traffic and Safety Agency's (NHTSA) in which it announced it will no longer enforce vehicle fuel efficiency standards under the Energy Policy Conservation Act for vehicles built after MY 2022. Though those credits account for overcompliance with vehicle mileage standards while EPA credits reward exceeding greenhouse gas standards, both credit systems foster manufacturer long-term planning through banking, trading and penalty avoidance. Data on credit trading prices is not publicly available and remains opaque (though EPA no doubt has or can obtain enough of that information to estimate the credit market's current overall value).[812] Evidence of that value includes a declaration filed by EV maker Rivian Automotive, explaining that Rivian now can no longer "trade credits [earned by complying with NHTSA's fuel efficiency standards] with contracted partners and finalize transactions for credits that it has sold to traditional manufacturers in years past."[813] For Rivian, this means that it cannot finalize already-negotiated credit transactions "valued at over $100,000,000."[814] This glimpse into the value of the reliance interest in credits of an automaker ranked just 44th by revenue among top publicly traded automakers[815] provides some indication of the huge size and monetary value of the overall credit market for all

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[810] Trends Report at 142–143.

[811] EPA, *Addendum to Final Phase 1 EPA Heavy-Duty VEhicle and Engine Greenhouse Gas Emissions Compliance Report (Model Year 2022)*, EPA-420-R-22-028C (Feb. 2024), at 4–5, tbls. 1 & 2, https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P101A2VS.pdf.

[812] Indeed, OMB sought information on the credit market from EPA in July 2025. *See* Email chain between OMB and EPA (July 2025), https://downloads.regulations.gov/EPA-HQ-OAR-2025-0194-0090/attachment_3.pdf.

[813] Zeta Petition *in ZETA v. NHTSA* at 2 ("ZETA Petition"); *Id.* at 23, Exhibit C, Decl. of Christopher Nevers, ¶12.

[814] Zeta Petition at 23, Exhibit C, ¶14.

[815] Cos. Mkt. Cap, *Top Publicly Traded Automakers by Revenue*, https://companiesmarketcap.com/automakers/largest-automakers-by-revenue/ (last visited Sept. 18, 2025).

automakers selling vehicles in the United States. Larger companies have reported on their credit expenditures. For example, Ford reported that in 2024, it entered into agreements to purchase some $4.3 billion in credits and had outstanding purchase obligations of about $4.2 billion,[816] and GM stated that in 2024, 2023 and 2022, it paid $2.0 billion, $.5 billion and $1.00 billion, respectively, to purchase credits.[817] No doubt the industry's credit market represents "serious" reliance interests.[818]

Rivian also identified another way in which its reliance interests in credits will be affected: automakers who now no longer need to use added technology to comply with NHTSA's vehicle standards by improving their combustion vehicles' mileage will save money, while the costs for electric vehicle makers will remain the same, causing those vehicles to become more expensive in relative terms.[819] Electric vehicle makers will see the same effect as the result of EPA's Proposal, upending their reliance on the existing system by suddenly tilting the competitive landscape decisively in favor of their competitors.

EPA is either not "cognizant" of these serious reliance interests or overlooks them on purpose; certainly, it has not provided "[a] reasoned explanation . . . for disregarding facts and circumstances that underlay or were engendered by the prior policy."[820] As the Supreme Court just recently held, consideration of reliance interests "must be undertaken by the agency in the first instance, subject to normal APA review."[821]

ii. EPA's failure to recognize the states' reliance interests in attaining and maintaining National Ambient Air Quality standards.

EPA's proposal fails to acknowledge any potential reliance interests on the part of the vehicle purchasing public or states and municipalities.[822] Yet numerous states, municipalities, companies, and individuals have made plans and investments in furtherance of their commitments to mitigate greenhouse gas emissions from their vehicles and vehicle fleets in reliance on federal regulations that increase the availability of these low- and zero-emission vehicles.

Notably, the states have also relied on federal vehicle greenhouse gas standards to attain and maintain the national ambient air quality standards (NAAQS). Every state must assure air

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[816] Ford Motor Co., *Form 10-K* at 10 (Feb. 2025), https://d18rn0p25nwr6d.cloudfront.net/CIK-0000037996/36cee874-3415-4088-a03e-8f255a43cd89.pdf.

[817] Gen. Motors Co., *Form 10-K* at 9 (Jan. 28, 2025), https://investor.gm.com/static-files/80738255-1f59-4f20-9b33-c6f958d50256.

[818] *See* E&E News, *Tesla Built Musk's Vast Wealth Through Climate Credits. Trump May End Them* (Jan. 15, 2025, https://www.eenews.net/articles/musk-made-a-fortune-on-climate-credits-trump-is-targeting-them/.

[819] Zeta Petition at 23, Exhibit C, ¶ 13.

[820] *White Lion,* 145 S. Ct. at 918, citing *Encino Motorcars* (internal quotation marks omitted).

[821] *Dept. of Homeland Sec.*, 591 U.S. at 41.

[822] *See* 90 Fed. Reg. at 36297.

quality within its geographic area for federally-set limits on carbon monoxide PM, ozone, and NO2, all of which are co-pollutants of tailpipe greenhouse gas emissions or formed by such co-pollutants, and every state must seek EPA approval of a State Implementation Plan (SIP) that sets forth how it will attain and maintain in compliance with the life-saving NAAQS standards.[823] Should EPA deem a SIP inadequate, it may substitute its own Federal Implementation Plan for the SIP or impose sanctions, or do both.[824]

As we explained in section VII.C and as EPA has recognized in prior GHG rules, manufacturers often comply with GHG requirements through technologies that also reduce criteria pollutants, such that the GHG standards create significant criteria pollutant benefits. Thus, to meet their NAAQS obligations and avoid these onerous federal sanctions, states rely on federal vehicle greenhouse gas standards in planning for, designing and implementing their SIPs. Many States have done so in reliance on EPA's own repeated statements that Federal GHG standards can help States meet the NAAQS, including statements EPA made to justify its GHG rules[825] as well as statements directed to the States' compliance with NAAQS requirements.[826] For example, New Jersey, New York, and Connecticut rely on the emission reductions required by the 2024 Rules and the MY2023–26 light-duty greenhouse gas standards to attain the 2015 70 ppb 8-hour ozone NAAQS.[827] Not only do states rely on the federal GHG emissions standards to help avoid sanctions, because these federal standards result in reduced emissions of criteria pollutants, states also rely on them to delay implementing additional costly control measures that would otherwise be required to achieve those same emission reductions. Without question, the continuing existence of federal rules curbing vehicle greenhouse gas emissions and the crucial part they play in attaining and maintaining the NAAQS constitute extremely serious reliance interests. EPA must explain in detail the facts and policy considerations that lead it now to propose to abandon its own key role in cleaning the country's air and shifting much of the burden to the states. EPA must also conduct a comprehensive review of the impacts of its proposal and

[823] 42 U.S.C. §§ 7407(a), 7410(a)(1), 7408(a).

[824] 42 U.S.C. §§ 7407(a), 7410(c), (m), 7509.

[825] *See, e.g.*, 89 Fed. Reg. 29592 ("EPA considers our analysis of the impact of the final CO2 emission standards on vehicle and upstream emissions for non-GHG pollutants as supportive of the final standards. The final standards will decrease vehicle emissions of non-GHG pollutants, and we expect those decreased emissions will contribute to reductions in ambient concentrations of ozone, particulate matter (PM2.5), NO2, CO, and air toxics.").

[826] EPA, *Rules that Help States Reduce Emissions and Meet Ozone Standards*, https://www.epa.gov/ground-level-ozone-pollution/rules-help-states-reduce-emissions-and-meet-ozone-standards (listing light and heavy duty GHG rules as rules that help states meet ozone standards); EPA, *MOVES5 Policy Guidance*, EPA-420-B-24-038 at3 (Nov. 2024), https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P101CTLB.pdf (providing guidance to States and local governments on the MOVES emissions model for SIP development and noting the incorporation of EPA's latest mobile source regulations, including the 2024 Rules into the emissions model).

[827] N.J. Dep't of Env't Prot., *SIP Revision for the Attainment and Maintenance of the Ozone NAAQS, 2015 70 ppb 8-Hour Ozone, Moderate Classification for the Northern New Jersey-New York-Connecticut Nonattainment Area* (Feb. 2025) at 3–31, 4–5, app. 4–6.

whether it "support[s] in any way . . . any activity which does not conform" to any approved SIP.[828] In fact, however, EPA has not even identified this grave problem.[829]

iii. EPA's failure to recognize the reliance interests of vehicle purchasers, including states and municipalities.

While the Clean Air Act does not restrict state, municipal or private vehicle purchasing decisions, it limits states' and municipalities' authority to directly require reductions in emissions from new motor vehicles.[830] Because, as discussed above, vehicle manufacturers have historically produced less-emitting vehicles only when required to do so by increasingly stringent standards, absent federal standards limiting greenhouse gas emissions from new motor vehicles, the vehicle purchasing public will face more constrained choice and more limited vehicle models. Moreover, due to economies of scale, if the pace of production of lower-emitting vehicles slows, the costs of purchasing even those vehicles that are produced will likely be higher, imposing greater costs on individuals, municipalities, and states that have committed to purchasing these vehicles.

At least 33 states have established policies or requirements to transition state-owned and leased vehicle fleets to zero-emission vehicles.[831] For example, by this year, California requires at least 15% of state heavy-duty (>19,000 lbs) vehicle purchases be zero emission,[832] New Jersey requires at least 25% of State-owned non-emergency light duty vehicles shall be plug-in electric,[833] Oregon requires 100% of light-duty state fleet purchases to be ZEVs,[834] Pennsylvania requires that 25% of cars in the state fleet must be battery electric and plug-in hybrid,[835] Rhode

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[828] 42 U.S.C. § 7506(c)(1).

[829] To the extent that the proposal will result in an increase in criteria pollutants for a state or region for which a nonattainment or maintenance plan exists, the Proposal would violate the Clean Air Act conformity provision, 42 USC §7506(c), because, at minimum, it would delay timely compliance with such plans. Several states are in exactly this position with respect to the ozone NAAQS, including New Jersey, New York, Connecticut, Georgia, Ohio, Texas and California (see the EPA "Green Book" at https://www.epa.gov/green-book/green-book-8-hour-ozone-2015-area-information), and increased NOx emissions will likely increase ozone concentrations and thus make timely compliance with the states' ozone State Implementation Plans (SIPs) more difficult.

[830] 42 U.S.C. § 7543.

[831] States and links to relevant statutes at: Elizabeth Stears, *Policy and Progress: The State Fleet Roadmap to Zero-Emission Vehicles*, Advanced Energy United (May 8, 20249, 2025), https://blog.advancedenergyunited.org/policy-and-progress-the-state-fleet-roadmap-to-zero-emission-vehicles#.

[832] CA AB739 (Oct. 2017), https://legiscan.com/CA/text/AB739/id/1652334#.

[833] NJ Bill S2252 (2018), https://www.njleg.state.nj.us/bill-search/2018/S2252; NJ Chapter 362, C.48:25-3(8)(a) https://pub.njleg.state.nj.us/Bills/2018/PL19/362_.PDF.

[834] OR H.B. 3550 § 3 (2023), https://olis.oregonlegislature.gov/liz/2023R1/Downloads/MeasureDocument/HB3550/Enrolled.

[835] PA Executive Order 2019-01 (Jan. 8, 2019), available at https://www.pa.gov/content/dam/copapwp-pagov/en/oa/documents/policies/eo/2019-01.pdf.

Island requires at least 25% of new light-duty state fleet purchases and leases to be ZEV,[836] and Washington requires 40% of state executive and small cabinet agency light-duty vehicle procurement to be battery electric vehicles.[837]

By the end of the decade, Colorado requires that the state electrify all state vehicles that have appropriate use cases,[838] Connecticut requires that 100% of state-purchase or leased cars and light trucks be ZEVs,[839] Hawaii set a goal that all state fleet light-duty vehicles be 100% ZEVs,[840] Illinois requires all passenger vehicles purchased or leased by governmental units must be ZEVs,[841] and Washington requires that 75% of light-duty fleets, 30% of class 2b-3 fleets, and 50% of class 4-8 fleets are battery-electric vehicles.[842]

Many states have established dates by which their vehicle fleets, or portions of those fleets are to be fully zero-emissions. For example, Maryland requires 100% zero emission passenger cars in the state fleet by 2031 and 100% of light-duty vehicles in the state fleet to be ZEVs by 2036,[843] Michigan requires 100% of light-duty vehicles in the state fleet to be ZEVs by 2033 and medium- and heavy-duty vehicles in the state fleet to be ZEVs by 2040,[844] New Jersey requires 100% of state-owned non-emergency light-duty vehicles to be plug-in electric by 2035,[845] New York requires the all non-emergency state light-duty vehicles be ZEVs by 2035,[846] Washington requires 100% of fleets be battery electric vehicles by 2040,[847] Massachusetts

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[836] RI Executive Order 15-17 (Dec. 8, 2015), available at https://governor.ri.gov/executive-orders/executive-order-15-17#.

[837] WA Executive Order 21-04 (Nov. 3, 2021), available at https://governor.wa.gov/sites/default/files/exe_order/21-04%20-%20Zero%20Emission%20Vehicles.pdf.

[838] 2023 Colorado EV Plan (Mar. 2023) at 47, available at https://drive.google.com/file/d/1R2WEarx6n2_pXXtd68tGV8ou6yrYoPMV/view.

[839] An Act Concerning the Connecticut Clean Air Act, SB 4 (2022), https://www.cga.ct.gov/2022/BA/PDF/2022SB-00004-R01-BA.PDF.

[840] H.B. 920 § 2 (2021), https://data.capitol.hawaii.gov/sessions/session2021/Bills/SB920_.HTM.

[841] Pub. Act 103-0581, https://witnessslips.ilga.gov/legislation/PublicActs/View/103-0581.

[842] Executive Order 21-04 (Nov. 3, 2021), available at https://governor.wa.gov/sites/default/files/exe_order/21-04%20-%20Zero%20Emission%20Vehicles.pdf.

[843] Climate Solutions Now Act of 2022 (S.B. 528) (codified at State Finance and Procurement Article § 14-418(B)), https://mgaleg.maryland.gov/2022RS/Chapters_noln/CH_38_sb0528e.pdf.

[844] Executive Directive 2023-5: Conversion of State Fleet (Dec. 5, 2023), available at https://www.michigan.gov/whitmer/news/state-orders-and-directives/2023/12/05/executive-directive-2023-5-conversion-of-state-fleet#.

[845] C.48:25-3(8)(b) https://pub.njleg.state.nj.us/Bills/2018/PL19/362_.PDF .

[846] https://www.nysenate.gov/legislation/bills/2023/S1346#.

[847] Executive Order 21-04 (Nov. 3, 2021), available at https://governor.wa.gov/sites/default/files/exe_order/21-04%20-%20Zero%20Emission%20Vehicles.pdf.

requires its state fleet to be 100% ZEVs by 2050.[848] A table detailing state clean vehicle and fleet commitments has been compiled by Advanced Energy United,[849] and the American Council for an Energy-Efficient Economy has likewise compiled state clean vehicle commitments.[850] Numerous municipalities have likewise adopted clean vehicle procurement commitments,

[848] Executive Order No. 594: Leading by Example: Decarbonizing and Minimizing Environmental Impacts of State Government § 2 (Apr. 22, 2021), https://www.mass.gov/executive-orders/no-594-leading-by-example-decarbonizing-and-minimizing-environmental-impacts-of-state-government.

[849] Elizabeth Stears, *Policy and Progress: The State Fleet Roadmap to Zero-Emission Vehicles* (May 8, 2024), at https://blog.advancedenergyunited.org/policy-and-progress-the-state-fleet-roadmap-to-zero-emission-vehicles#.

[850] Am. Council for an Energy-Efficient Economy (ACEEE), *State and Local Policy Database: Fleets*, https://database.aceee.org/state/fleets.

including New York,[851] Chicago,[852] Los Angeles,[853] Boston,[854] Philadelphia,[855] Durham,[856] Austin,[857] and Seattle.[858]

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[851] In October 2023, Mayor Eric Adams signed Intro. 279-A, the Zero-Emission Vehicles for New York City (ZEV4NYC) Act. New York City, Press Release: Mayor Adams Signs Bill Paving Way for Electrification of All City Government Vehicles (Oct. 23, 2023), https://www.nyc.gov/office-of-the-mayor/news/806-23/mayor-adams-signs-bill-paving-way-electrification-all-city-government-vehicles. The legislation will require that the entirety of NYC's municipal fleet, the country's largest with over 30,000 cars, trucks, and buses, be electrified. Light- and medium-duty city-owned vehicles must be all-electric and emission-free by 2035, and heavy-duty vehicles shortly thereafter. The fleet includes vehicles such as ambulances, fire trucks, police cars, sanitation trucks, school buses, and street sweepers. To accomplish this, the legislation sets important purchasing deadlines—dates after which only zero-emission vehicles (ZEVs) can be purchased by city agencies.

[852] In 2022, the City of Chicago developed a Climate Action Plan that aims to electrify 100% of the City's fleet by 2035. (2022 Chicago Climate Action Plan (2022), at 40, 92, https://www.chicago.gov/content/dam/city/sites/climate-action-plan/documents/Chicago-CAP-071822.pdf) In April 2023, the City committed $42 million to electrification of the municipal fleet of over 11,000 vehicles. (City of Chicago Commits $42M to Municipal Fleet Electrification Initiative, Chicago Electric (Apr. 21, 2023), https://www.chicago.gov/city/en/depts/mayor/press_room/press_releases/2023/april/MunicipalFleetElectrificationInitiative.html#)

[853] The Los Angeles City Council in 2022 adopted an Electric Vehicle Master Plan, which includes provisions for replacing approximately 6,000 municipal fleet vehicles with electric vehicles. Electric Vehicle Fleet (Apr. 6, 2022), https://cd9.lacity.gov/articles/electric-vehicle-fleet#.

[854] Boston in its Zero-Emission Vehicle Roadmap lays out its plan for electrifying the municipal fleet. *See* City of Boston, Zero-Emission Vehicle Roadmap (2020), https://www.boston.gov/sites/default/files/file/2020/12/Boston%20ZEV%20Roadmap_1.pdf.

[855] In 2021, Philadelphia adopted a Clean Fleet Plan to transition the city's municipal vehicle fleet to clean and electric vehicles, *Philadelphia's Municipal Clean Fleet Pla*n (Oct. 2021), https://www.phila.gov/media/20211006130414/Philadelphia-Municipal-Clean-Fleet-Plan-202110.pdf, which the city updated in 2024, P*hiladelphia's Municipal Clean Fleet Plan Update* (Apr. 2024), at https://www.phila.gov/media/20240405131919/Municipal-Clean-Fleet-Plan-Update_04042024.pdf.

[856] The City of Durham, North Carolina, is working to phase out internal combustion engine vehicles in its municipal fleet. The city adopted a roadmap to a zero emission fleet that involves replacing 100% of light-duty passenger cars and trucks with zero emission vehicles by 2040 and transitioning medium- and heavy-duty vehicles to ZEVs as technology matures. City of Durham, *Zero Emission Fleet*, https://www.durhamnc.gov/5075/Zero-Emission-Fleet. The plan provides that all vehicles purchased for Central Fleet be electric or other ZEVs, or best in class if an appropriate ZEV is unavailable, with the target that 100% of the light-duty vehicles be emissions by 2035, 100% of the medium-duty vehicles by 2050, and 100% of the heavy-duty vehicles by 2060. *Id.* at 6.

[857] In furtherance of its Climate Equity Plan, the City of Austin is working to reduce emissions from the city's 5,147 on-road vehicles, with a goal of 40% of total vehicle miles traveled using battery electric vehicles by 2030. Jo Clifton, Fleet department works to electrify the city's many vehicles, Austin Monitor (Mar. 29, 2024), https://austinmonitor.com/stories/2024/03/fleet-department-works-to-electrify-citys-many-vehicles/.

Private corporations have also made commitments to clean vehicle procurement, including Amazon's commitment to 100,000 electric delivery vehicles by 2030,[859] AT&T's commitment to reduce fleet emissions by at least 76% by 2035 by investing in electric vehicles and the infrastructure to support them,[860] DHL's commitment to achieve 60% of worldwide deliveries using electric delivery vehicles by 2030,[861] IKEA's commitment to achieving over 90% of home deliveries made by zero emission vehicles by 2028,[862] Lyft's commitment to 100% electric vehicles on the Lyft platform by 2030,[863] and Siemens' commitment to transition its fleet of vehicles below 3.5 tons to 100% electric by 2030 and electrifying 50% of its vehicles between 3.5 and 7.5 tons.[864]

States and municipalities have expended time and resources in developing clean vehicle roadmaps in reliance on low- and zero-emission vehicles being available. For example, Colorado has developed and periodically updated a plan to support 940,000 electric vehicles on the road by 2030.[865] Connecticut developed an EV Roadmap to advance its goal of 125,000-150,000 EVs on the road by 2025,[866] Delaware developed a plan to transition to zero-emission light-duty vehicles

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[858] *See Leading by Example: Seattle's Drive to a 100% Fossil-Fuel-Free City Fleet by 2030,* https://www.seattle.gov/environment/climate-change/transportation-emissions/transportation-electrification-blueprint/fossil-fuel-free-fleet.

[859] Amazon, *Everything You Need to Know About Amazon's Electric Delivery Vans from Rivian*, https://www.aboutamazon.com/news/transportation/everything-you-need-to-know-about-amazons-electric-delivery-vans-from-rivian.

[860] AT&T Corporate Responsibility, *Efficiency & Emissions*, https://sustainability.att.com/priority-topics/efficiency-emissions#.

[861] DHL, *DHL's Commitment to Sustainability Through Our Green Initiatives* (Feb. 27, 2025), https://www.dhl.com/discover/en-sg/logistics-advice/sustainability-and-green-logistics/our-commitment-to-sustainability#.

[862] IKEA, Taking Care of the Home We Share, https://www.ikea.com/in/en/this-is-ikea/sustainable-everyday/zero-emission-vehicle-pub00d952a0/#.

[863] Lyft, *Leading the Transition to Zero Emissions: Our Commitment to 100% Electric Vehicles by 2030* (June 16, 2020), at https://www.lyft.com/blog/posts/leading-the-transition-to-zero-emissions.

[864] Siemens, *Powering up Decarbonization in Business Operations*, https://www.siemens.com/global/en/products/services/gbs/our-insights/newsroom/fully-electrified-vehicle-fleet.html.

[865] *2023 Colorado EV Plan* (Mar. 2023),https://drive.google.com/file/d/1R2WEarx6n2_pXXtd68tGV8ou6yrYoPMV/view.

[866] Conn. Dept. of Energy and Envtl. Prot., *Electric Vehicle Roadmap for Connecticut (2020)*, https://portal.ct.gov/-/media/deep/air/mobile/evconnecticut/2020-04-22---ev-roadmap-for-connecticut---final.pdf.

and reduce transportation emissions,[867] and Florida developed an electric vehicle roadmap to reduce transportation sector emissions.[868]

EPA in its proposal fails to consider the reliance interests of these vehicle purchasers, who made significant investments of time and resources in expectation that federal vehicle GHG standards would continue in effect, and EPA failed to consider or address how these entities would be harmed by the resulting reduction in diversity and availability of clean vehicle models and high purchasing costs due to more constrained scale of production.

iv. EPA's failure to recognize the reliance interests of State and local governments that have invested in electric vehicle charging infrastructure.

Beyond investing time and resources in planning, states have invested heavily in the infrastructure necessary to support zero emission vehicles. They made these investments in reliance on the availability of electric and other zero-emission vehicles, and the benefit of these investments is jeopardized by EPA's proposed rescission of the federal vehicle greenhouse gas emissions standards. According to Atlas Public Policy, which aggregates data from across the country, state investment in public EV charging stations exceeded $1.6 billion by early 2023.[869]

State public utility commissions have also authorized their utilities to spend ratepayer money to support the build out of electric vehicle charging infrastructure in reliance on the continuing growth of electric vehicle sales. Atlas has documented nearly $7 billion in approved utility investments in transportation electrification across 33 states and the District of Columbia to date, including over $5.5 billion in charging infrastructure.[870] This includes nearly $3.7 billion in light-duty vehicle EV supply equipment and $1.85 billion in medium- and heavy-duty EV supply equipment.[871] These programs will support the development of over 15,000 direct current fast charging plugs, nearly 460,000 level 2 charging plugs, and over 25,000 MD/HD-designated ports.[872]

Recognizing that the distribution system upgrades required to support vehicle electrification can take longer to implement than it takes to add new EV load, state utility commissions have initiated "proactive planning" proceedings and begun awarding funding for

[867] Del. Dept. of Nat. Res. & Envtl. Control, *Delaware's Roadmap to Electric Vehicles (2025)*, https://documents.dnrec.delaware.gov/energy/transportation-program/2025-Delaware-EV-Roadmap.pdf.

[868] Fla. Dept. of Ag. & Consumer Servs., *Florida Electric Vehicle Roadmaps* (Dec. 2020), https://driveelectricusa.org/wp-content/uploads/2021/01/EV_ROADMAP_REPORT_2020.pdf.

[869] Atlas Pub. Pol'y, *Investment in Publicly Accessible EV Charging in the United States* at 4 (2023), https://atlaspolicy.com/wp-content/uploads/2023/05/Investment-in-Publicly-Accessible-EV-Charging.pdf.

[870] Data from Atlas Public Policy, EV Hub (current as of September 12, 2025). The raw and aggregated data are provided as an attachment to these comments (hereinafter "Atlas EV Hub data").

[871] Atlas EV Hub Data. The medium- and heavy-duty investments include those for MD/HD trucks, school buses, transit buses, mass transit, and port equipment.

[872] Atlas EV Hub Data ("MD/HD-designated" reflects ports intended for medium- and heavy-duty vehicles for filings that do not specify L2 versus DCFC).

distribution upgrades in anticipation of EV load.[873] For example, Colorado utilities are required to file distribution system plans that ensure the system can meet state and federal decarbonization laws, including transportation electrification policies.[874] Massachusetts has required each utility to file an "electric-sector modernization plan" to proactively upgrade the distribution system to "accommodate increased transportation electrification," among other objectives.[875] New Jersey's Board of Public Utilities has authorized utilities to recover for investments in "the wiring and backbone infrastructure" necessary to enable make-ready upgrades for medium- and heavy-duty publicly-accessible charging depots, public medium- and heavy-duty government vehicles, and certain private medium- and heavy-duty fleets.[876] Earlier this year, the New York Public Service Commission approved 36 urgent transmission upgrade projects totaling hundreds of millions of dollars as an initial step in its proactive planning docket.[877]

v. EPA's failure to recognize the reliance interests of private companies.

In addition to the private investments in vehicles covered above, private companies, their investors and shareholders have also made other investments in reliance on 15 years of federal standards requiring steadily decreasing greenhouse gas emissions, standards that foster technological innovation, infrastructure build-out, steady supply chains and materials - a predictable, desired and obvious response to this federal success story. Examples of these investments include private capital in public EV charging, which alone was nearing $13 billion

[873] *See, e.g.*, I/M/O Proactive Planning for Upgraded Electric Grid Infrastructure, *Order Establishing Planning Proceeding*, Dkt. No. 24-E-0364 (Aug. 15, 2024).

[874] Colo. S.B. 24-218 at 14–15 (2024), https://leg.colorado.gov/sites/default/files/2024a_218_signed.pdf.

[875] Mass. Gen. Laws ch. 164 § 92B(a),

https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXXII/Chapter164/Section92B.

[876] N.J. Bd. of Pub. Utilities., *Clean Energy Order, In the Matter of Medium and Heavy Duty Electric Vehicle Charging Ecosystem* at 6, 9, Docket No. QO21060946 (Oct. 23, 2024).

[877] N.Y. Pub. Serv. Comm'n, *Order Addressing Urgent Upgrade Filings*, Case 24-E-0364 (June 12, 2025), available at https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId={F05F6597-0000-C17B-B068-916CB5B91D67}

by early 2023.[878] Global venture capital funding for battery recycling firms was $1.5 billion during the third quarter of 2023 alone.[879]

As explained above, stagnant regulations result in stagnant emission performance,[880] while no regulations at all will lead to lack of innovation, sunk costs and stranded assets that never produce the returns on investments the private companies reasonably expected. EPA does not appear to be cognizant of these reliance interests or has overlooked them intentionally, and certainly has not explained why they do not count.

vi. EPA's failure to recognize the reliance interests of vehicle purchasers in battery warranty and performance requirements and in-use GHG emissions requirements.

As part of its proposed rescission of all current and prior vehicle GHG emissions standards, EPA proposes to eliminate critical durability and warranty provisions related to batteries in battery electric and plug-in hybrid electric vehicles and to the ongoing performance of emission controls. These actions disturb additional reliance interests of individuals who purchased vehicles with the investment-backed expectation that the mandated warranties and GHG emission levels would be honored. EPA's failure to consider these reliance interests is arbitrary and capricious.

EPA proposes to eliminate the emission defect warranty that applies to batteries in electric and plug-in hybrid electric vehicles.[881] As a consequence, these batteries would not be warranted as free from emission defects for 8 years or 80,000 miles, they would be under warranty for only two years or 24,000 miles.[882] EPA also proposes to eliminate regulatory limitations on battery degradation, deleting regulatory language requiring that "[b]atteries installed in light-duty program vehicles must meet a Minimum Performance Requirement such that measured usable battery energy is at least 80 percent of the vehicle's certified usable battery

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[878] Atlas Pub. Pol'y, *Investment in Publicly Accessible EV Charging in the United States* at 4 (2023), https://atlaspolicy.com/wp-content/uploads/2023/05/Investment-in-Publicly-Accessible-EV-Charging.pdf.

[879] TechCrunch, *From Prototype to Public* (2023), https://techcrunch.com/2023/09/11/battery-recycling-heats-up-with-ascend-elements-542m-series-d/. In the 2024 LMDV Rule, 89 FR 28056, EPA had noted many such private battery recycling ventures. private agreements between various companies and Redwood Materials to supply domestically processed cathode material, a partnership among Ford, Volvo and Redwood Materials that collects and recycles used batteries. *See* MotorTrend*, Recycled EV Batteries Are Coming From Redwood Materials* (Aug. 22, 2024), https://www.motortrend.com/news/ev-battery-cathode-recycling-redwood-materials*;* The News & Observer*, Toyota shares NC factory targets for shipping first batteries, hiring 3,000 workers* (Jan. 9, 2025), https://www.newsobserver.com/news/state/north-carolina/article298113263.htm.

[880] Trends Report at 7–9.

[881] *See* 90 Fed. Reg. at 36316.

[882] *Id.*; *see also* EPA Memorandum, *Redline Version of EPA's Proposed Regulations for the Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards* at 5 (July 2025) ("Redline Memo") (deleting 40 C.F.R. § 85.2103(d)(1)(v))..

energy after 5 years or 62,000 miles, or at least 70 percent of certified usable battery energy at 8 years or 100,000 miles."[883] Further, EPA proposes to eliminate in-use carbon dioxide exhaust emission limits for all vehicle classes, which currently require vehicles to continue to achieve certain levels of emission performance after purchase.[884]

All of these proposed actions upset critical reliance interests by vehicle purchasers. Retroactively reducing warranty and performance requirements for vehicle batteries reduces the value of BEVs and PHEVs previously subject to these safeguards, undermining consumers' investments in these vehicles. Moreover, eliminating in-use emissions standards undermines investment-backed expectations about the climate-related impacts from the vehicles.

vii. Reliance interests of workers in the electric vehicle market.

EPA has also entirely overlooked the Proposal's effect on the crucial reliance interests its vehicle greenhouse gas rules have engendered in workers employed in the electric vehicle sector. EPA's failure is particularly egregious given that its own 2024 Rules projected significant job growth from expanded EV manufacturing based on increased hours required to build both batteries and EVs.[885] The 2024 Rules also projected job growth in electrical installation, maintenance and repair, and related jobs in construction, software, planning and design, legal and administration.[886] Indeed, since 2012, vehicle manufacturers have announced 135,000 new jobs at or connected with facilities that make EVs and batteries;[887] 112,000 of these jobs are linked to facilities now in operation (75,000) or under construction (37,000).[888] In total, industries up and down the supply chain for EVs have announced some 230,000 new jobs, with 183,000 of them at or related to facilities that are already operational (108,000) or under construction (75,000).[889] As

[883] Redline Memo at 19 (deleting 40 C.F.R. § 86.1815–27(e)).

[884] Redline Memo at 23 (deleting 40 C.F.R. § 86.1818–12(d)), 30 (deleting 40 C.F.R. § 86.1819-14(b)).

[885] *E.g.,* 98 Fed. Reg. at 28123–24; RIA at 4–71 to 4–72. RIA at 116. The 2024 LMDV Rule also cited a DOE report projecting a shift of jobs from ICE manufacturing to EV manufacturing, 89 Fed. Reg. at 28,123, and reported on projects training new and existing employees for jobs in EV production, maintenance and repair, and charging infrastructure. 89 Fed. Reg. at 29706.

[886] 2024 LMDV Rule RIA at 3–83; 2024 HDP3 Rule RIA at 747.

[887] BGA EV Jobs Hub at "Jobs" tab.

[888] *Id.*

[889] *Id.*

of the end of 2024, the clean vehicle sector employed 410,000 workers, a number that has jumped 60% over the past three years.[890]

EV-related jobs generally are high-quality, high-paying jobs, with average wages by 2030 much higher than average wages for jobs being replaced.[891] Workers now in the EV industry have acquired serious reliance interests by investing in these jobs, becoming trained and proficient in the requisite skills, and staking their professional lives and income potential on them.[892]

EPA fails to recognize that the Proposal puts these serious reliance interests into jeopardy. As noted above, historical evidence shows that in the absence of enforceable standards, EV production will remain stagnant or decline,[893] forcing cancellation of production plans and loss of employment in the industry. Even though EPA's 2024 Rules carefully considered the employment impacts of its standards, recognizing the shifts from employment in internal combustion to electric vehicle and battery manufacturing and quantifying the number of new jobs it predicted,[894] EPA now does not acknowledge this prior work and does not explain why these well-paying jobs must be sacrificed to its current policy desires.

E. The proposed retroactive repeal of legacy standards would be arbitrary and capricious

EPA acknowledges that its proposed retroactive rescission of emission standards for model years (MY) 2012 to 2026 will have impacts on the reliance interests of manufacturers, importers, sellers and consumers. 90 Fed. Reg. 36,297. However, EPA fails to identify those impacts and instead asks commenters to supply it with information about the proposal's impacts on reliance interests. *Id*. Even worse, notwithstanding its conceded lack of information about

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[890] *Clean Jobs America 2024* at E2 (Sept. 2024), https://cleanjobsamerica.e2.org/wp-content/uploads/2024/09/E2-2024-Clean-Jobs-America-Report_September-17-2024.pdf.

[891] *See, e.g.,* Sophie Tolomiczenko et al., *The Benefits of the Colorado Clean Car Standard*, ERM 19–20 (May 2023), https://www.erm.com/globalassets/foundation-annual-report-2023/co_acc_ii_final_report_15may2023.pdf (evaluating Colorado's Clean Car Standards).

[892] *See, e.g., California Energy Commission, Workforce Development*, https://www.energy.ca.gov/programs-and-topics/programs/clean-transportation-program/clean-transportation-funding-areas; Gen. Motors Co., *Training Manufacturers for the Vehicles of Tomorrow*, https://www.gm.com/stories/amec-electric-manufacturing-workforce; State of Illinois, *Illinois Drives Electric: Training and Degree Programs*, https://ev.illinois.gov/grow-your-business/training-and-degree-programs.html (noting various job programs with state funding; State of Michigan, *Gov. Whitmer Announces New EV Jobs Academy Website to Connect Michiganders to Careers in Electric Vehicle Industry* (March 1, 2023), https://www.michigan.gov/leo/news/2023/03/01/gov-whitmer-announces-new-ev-jobs-academy-website-to-connect- michiganders-to-careers-in-ev-industry.

[893] Trends Report at 6, 7.

[894] EPA, *Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, Regulatory Impact Analysis* at 4–81 (Mar. 2024), https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1019VPM.pdf.

impacts on reliance interests, EPA blindly asserts that it is "confident that the Agency has adequate regulatory tools to address" those unidentified impacts. *Id*.

As a threshold matter and as discussed above in Section 6, EPA lacks authority for this proposed action as a whole, including the proposed retroactive rescission of the light-duty, medium-duty, and heavy-duty vehicle and engine standards for MYs 2012 through 2026. But even assuming EPA may in some circumstances take actions which have retroactive effect, this proposed retroactive rescission is invalid because it is arbitrary and capricious due to EPA's failure to balance the benefits of retroactive rulemaking with burdens on regulated entities.[895] As the courts have explained in reviewing past EPA actions with retroactive effect, to survive judicial review, the agency must "reasonably consider[] and mitigate[] any hardship caused to obligated parties by reason of the" retroactive action. *Americans for Clean Energy v. Environmental Protection Agency,* 864 F.3d 691, 718 (D.C. Cir. 2017).[896]

Here, EPA falls far short of this responsibility, failing to even identify the hardships its proposed action will cause, much less to identify with any specificity how it will mitigate those hardships.[897] The proposed retroactive rescission is also arbitrary and capricious because EPA entirely failed to consider an alternative that retains the GHG standards for model years 2012-2026, even if it repeals the model year 2027-2032 standards. As discussed in these comments, manufacturers' product plans and compliance strategies for those past model years are locked in and consumers who purchased those past MY vehicles did so with the understanding that they would have the benefit of EPA's in-use vehicle requirements, which extend into future years and ensure that vehicles continue to meet the emission standards that the purchaser paid for. This failure to even consider the possibility of retaining the legacy standards even if future MY standards are repealed is a textbook example of a failure to conduct the "reasoned analysis" required by the APA. See, *Motor Vehicle Mfrs. Ass'n v. State Farm Mutual Automobile Ins. Co*. ("*State Farm"*), 463 U.S. 29, 57 (1983).

Indeed, the very nature of EPA's request here highlights the arbitrariness and capriciousness of the proposed action. To comport with the requirements of Section 553(b)(2) the APA, 5 U.S.C. § 553(b)(2), it was incumbent upon EPA to supply commenters with the information the agency requests, not vice versa. *See Home Box Office, Inc. v. Fed. Commc'n*

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[895] As the D.C. Circuit has recognized, a rule that imposes new sanctions on past conduct is retroactive and invalid unless specifically authorized, while a rule that "upsets expectations," is "secondarily retroactive" and invalid when it is arbitrary and capricious. *See Nat'l Cable & Telecomms. Ass'n v. FCC,* 567 F.3d 659, 670–71 (D.C. Cir. 2009).

[896] *See also, Monroe Energy, LLC v. EPA*, 750 F.3d 909, 920–21 (D.C. Cir. 2014); *National Petrochemical & Refiners Association v. EPA*, 630 F.3d 145, 166 (D.C. Cir. 2010), citing to *Landgraf v. USI Film Products,* 511 U.S. 244, 272 (1994) (presumption against retroactive laws is strongest in cases involving "contractual or property rights, matters in which predictability and stability are of prime importance."

[897] *See e.g., Calumet Shreveport Refining LLC v. EPA*, 86 F.4th 1121, 1134 (5th Cir. 2023) finding that EPA used an "impermissibly retroactive" standard to deny refineries' petitions for hardship relief under the CAA's Renewable Fuel Standard program (EPA "cannot 'surprise' [petitioners] by penalizing [them] for 'good-faith reliance' on the agency's prior positions.").

Comm'n, 567 F.2d 9, 35 (D.C. Cir. 1977). Nor can EPA rectify this problem by waiting for issuance of a final rule to provide the missing information and analysis:

> [t]he notice required by the APA, or information subsequently supplied to the public, must disclose in detail the thinking that has animated the form of a proposed rule and the data upon which that rule is based.

Id.[898] Courts will not hesitate to strike down final rules based on such opaque proposals. *See, e.g. Horsehead Res. Dev. Co. v. Browner*, 16 F.3d 1246, 1268 (D.C. Cir. 1994) ("general notice that a new standard will be adopted affords the parties scant opportunity for comment."). Finally, EPA's gratuitous assumption that it can address impacts it lacks the ability to identify (90 Fed. Reg. at 36,297) demonstrates the lack of reasoned analysis that is the epitome of arbitrary and capricious agency action. *State Farm*, 463 U.S. at 46-50.

F. EPA has failed to meaningfully consider alternatives to a full repeal of its GHG standards.

Even if EPA finalizes its proposed rescission of the endangerment finding, that does not compel a full and simultaneous repeal of the GHG standards, as explained above. And finalizing that full repeal without meaningfully considering alternatives is arbitrary and capricious. Agencies are required to consider "'significant and viable and obvious alternatives'" to their proposed action. *Dist. Hosp. Partners, L.P. v. Burwell*, 786 F.3d 46, 59 (D.C. Cir. 2015); *see Spirit Airlines, Inc. v. DOT*, 997 F.3d 1247, 1255 (D.C. Cir. 2021) ("[T]he failure of an agency to consider obvious alternatives has led uniformly to reversal." (internal quotations omitted)); *Ky. Mun. Energy Agency v. FERC*, 45 F.4th 162, 188 (D.C. Cir. 2022) (finding FERC's lack of consideration of an alternative "amounts to failure of reasoned decisionmaking"). Courts have repeatedly affirmed the need to consider alternatives, particularly where an agency is reversing a prior action.[899] Moreover, an agency cannot broadly invoke the alleged illegality of one aspect of a regulation to justify its repeal of the entire regulation, especially where the agency has viable

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[898] *See also Prometheus Radio Project v. FCC*, 652 F.3d 431, 450 (3d Cir. 2011) ("the opportunity to comment must be a meaningful opportunity.").

[899] *State Farm*, 463 U.S. at 51 (finding that NHTSA had arbitrarily failed to explain its rejection of option requiring airbags despite its prior finding "that airbags are an effective and cost-beneficial life-saving technology"); *Pub. Citizen v. Steed*, 733 F.2d 93, 100 (D.C. Cir. 1984) (setting aside suspension of rule because NHTSA "failed to explain why alternatives, which the rulemaking record indicates were available to the agency, could not correct" problem agency relied on as basis for suspending rule); *Int'l Ladies' Garment Workers' Union v. Donovan*, 722 F.2d 795, 816 (D.C. Cir. 1983) (agency impermissibly failed to consider alternatives to repeal "raised in [the] original notice and the comments"); *Office of Commc'n of United Church of Christ v. FCC*, 707 F.2d 1413, 1439 (D.C. Cir. 1983) (agency improperly eliminated programming logs requirements without giving due consideration to the benefits of retaining a modified form of logs); *Delaware Dept. of Nat. Res. and Envtl. Control v. EPA*, 785 F.3d 1 (D.C. Cir. 2015) ("alternative way of achieving EPA's objective . . . should have been addressed and adequate reasons given for its abandonment"); *Shieldalloy Metallurgical Corp. v. NRC*, 624 F.3d 489 (D.C. Cir. 2010) ("[A]gencies must evaluate parties' proposals of 'significant and viable' alternatives.") (citing *Farmers Union Cent. Exch., Inc. v. FERC*, 734 F.2d 1486, 1511 n.54 (D.C. Cir. 1984)).

alternatives. *See Dept. of Homeland Sec. v. Regents of the Univ. of Cal.*, 591 U.S. 1, 28–31 (2020).

Here, EPA has made no attempt to consider alternatives to a full repeal of all vehicle GHG standards at the same time it rescinds the endangerment finding. Rather, it simply provides multiple alternative rationales for the same set of proposed actions. *See, e.g.*, 90 Fed. Reg. at 36,314 ("any one of these alternative proposals would provide a sufficient basis for repealing our existing GHG regulations for new motor vehicles and new motor vehicle engines"). But as our comments have shown, *see* EF Comments; *supra* Section V, the proposal to rescind the endangerment finding rests on flawed evidence and incoherent statutory analysis. EPA frequently cites a new draft climate report from the Department of Energy, which was not peer reviewed and fundamentally misstates the science on climate change. *See* NGO comments on CWG Report. And EPA's legal arguments for rescinding the endangerment finding lack any basis in the Clean Air Act or administrative law. *See supra* Section V.[900] EPA should, therefore, consider maintaining the existing GHG standards until the completion of the administrative and likely judicial proceedings regarding the endangerment finding rescission.

Moreover, the Clean Air Act does not permit EPA to repeal all of its GHG standards in these circumstances. *Supra* Section VI. And in any event, EPA has not justified their repeal or explained why this immediate rescission of the standards is appropriate or necessary. The Act establishes a detailed scheme for revising standards, including by authorizing EPA to "from time to time revise" the standards "in accordance with the provisions of this section." CAA § 202(a)(1). EPA's judgment as to *when* to revise the standards, absent statutory deadlines (none of which apply here), is subject to the agency's reasoned discretion. Nothing in the Act requires simultaneous action here. And in light of the reliance interests that EPA's standards have engendered, the agency would be wise to resolve the legality of its Endangerment Finding repeal—including through a final judgment at litigation—before upending a 15-year-old program and creating regulatory chaos.

EPA also has failed to consider an alternative that maintains its vehicle GHG program—either with the existing standards or with another set of standards—in light of the significant and longstanding reliance interests of industry and the public. As discussed above, *supra* Section VII.e, industry has relied on the existence of EPA's increasingly stringent standards for over a decade and has made investment decisions accordingly. Similarly, consumers have relied on the existence of these standards for availability of a wide-range of cleaner vehicles at lower costs. Having GHG standards in place provides critical certainty for the auto industry and consumers. But EPA has not evaluated these reliance interests and the disruption that its repeal of its entire GHG program would cause. Before EPA takes such a harmful action, it must issue a supplemental proposal that fully considers all of these reliance interests and examines options

[900] Even the Alliance for Automotive Innovation has recognized the vast and harmful uncertainty associated with EPA's attempt to rescind its endangerment finding and repeal all of its GHG emission standards. *See* Michael Hartrick, *Testimony Before EPA - GHG Endangerment Finding and Motor Vehicle Rule Rescission* (Aug. 21, 2025), https://www.autosinnovate.org/posts/agency-comments/energy-environment/2025-energy-environment/Testimony%20-%202025%20-%20EPA%20on%20GHG%20Endangerment%20and%20Rules%20Proposal.

that would not disrupt those interests. It is noteworthy that even the American Petroleum Institute has stated it "continues to support a federal role in regulating greenhouse gas emissions."[901]

Finally, EPA has also failed to consider an alternative that retains the GHG standards for model years 2012-2026, even if it repeals the model year 2027-2032 standards. Vehicle manufacturers have already made all of their manufacturing decisions for model year 2012-2026 vehicles, and they have done so with the understanding that they needed to comply with the GHG standards for those model years. These vehicles are already in use and subject to EPA's in-use vehicle program, which ensures their continued GHG emission performance. Moreover, EPA lacks authority to repeal GHG standards for previous model years. *See supra* Section VI. Nor has the agency justified such a retroactive repeal. *See supra* Section VII.E. Instead it asserts without support that each of its rationales for repealing the model year 2027-2032 standards also applies to previous model years. But its argument that more stringent standards result in slower vehicle turnover and higher emissions cannot apply to earlier model year vehicles, as that flawed argument is purely forward looking. So at least that rationale for repealing the standards cannot apply to earlier model year standards. For these reasons, EPA must meaningfully consider an alternative that retains the GHG standards for earlier model years.[902]

VIII. Impact to Other Programs of Removal of Certain Components of Regulations, Test Procedures, Emissions Models

Each of EPA's justifications for its proposed repeal of the GHG standards is fatally flawed, as discussed above. And none of those justifications could support a repeal or weakening of any portion of NHTSA's fuel economy standards or EPA's criteria pollutant and hazardous air pollutant standards. Indeed, EPA has disclaimed any attempt to alter those standards, *see, e.g.*, 90 Fed. Reg. at 36,290.

The agency also seeks comments on any proposed changes that may undermine non-GHG standards. *See id.* at 36,293, 36,324. EPA's proposed removal of battery durability, monitoring, and extended warranty requirements, *id.* at 36,317-18, contradict the agency's claim that it is not affecting the criteria pollutant program. The light- and medium-duty GHG standards for model years 2027 and beyond include a "battery capacity retention" requirement that PHEV and BEV batteries retain 80% of their certified energy for 5 years or 62,000 miles and 70% of their certified energy for 8 years or 100,000 miles, as well as a battery "state of health" monitor and extended the warranty period for batteries and related powertrain components. 89 Fed. Reg. at 27971. EPA explained that these requirements "support BEV and PHEV battery durability and thus support achieving the GHG and NMOG+NOX emissions reductions projected for the final

[901] Michael Copley, *Businesses Face 'Chaos' as EPA Aims to Repeal Its Authority Over Climate Pollution*, NPR, (Aug. 19, 2025), https://www.npr.org/2025/08/19/nx-s1-5501576/climate-pollution-epa-regulation-endangerment-finding.

[902] To the extent EPA adopts an alternative that involves weakening the GHG standards or delaying their effective date, for example based on new judgments regarding costs or feasibility, such an alternative is beyond the scope of the proposal and would not be a logical outgrowth. Any action to weaken or delay the GHG standards involves substantive changes to the regulations, which must be first proposed and the subject of a new public hearing and comment period, consistent with Clean Air Act section 307(d).

standards. Further, these requirements support the integrity of the GHG and NMOG+NOX emissions credit calculations under the ABT program as these calculations are based on mileage over a vehicle's full useful life. " 89 Fed. Reg. at 27,965. Similarly, in issuing the heavy-duty standards, EPA included new battery monitoring and warranty requirements, and noted among other things that "we are identifying the high-voltage battery, and the powertrain components that depend on it (including fuel-cell stack, electric motors, and inverters), as 'emission-related components' in HD vehicles under 40 CFR 1037.120(c) (components covered by warranty), as they play a critical role in reducing the vehicles' emissions and allowing BEV and FCEV to have zero tailpipe emissions in-use." 89 Fed. Reg. at 29,613. All these requirements need to be preserved to avoid higher criteria pollutant emissions and thereby less effective criteria pollutant standards. EPA should withdraw its proposal to remove any of these requirements, and it should retain these requirements in substantially the same form.

Moreover, in contrast to those requirements, the criteria pollutant standards treat PHEV batteries as "emission related components" with an 8 year or 100,000 mile warranty. 89 Fed. Reg. at 27971. But that warranty only covers defects that cause the vehicle to fail emission standards. It does not address capacity retention or normal aging. If a PHEV battery capacity degrades below the level available during certification, the vehicle's real-world criteria pollutant emissions will be higher than the certified level because the vehicle will run on gasoline for a greater portion of its miles than was assumed during certification.[903] And without the "battery retention capacity" requirement in the existing GHG standards, vehicle manufacturers would face no regulatory requirement to prevent such degradation and the resulting higher criteria pollutant emissions. To ensure the proposed repeal of the GHG standards does not result in higher criteria pollutant emissions and thereby less effective criteria pollutant standards, EPA must incorporate the "battery retention capacity" and "battery state of health monitoring" requirement from the GHG standards into the criteria pollutant standards for BEVs and PHEVs.

IX. Preemption

EPA requests comment on: 1) whether there are "any reliance interests in national uniformity and preemption would support adopting certain rationales and not finalizing other rationales;"(C-6); and relatedly requests comment on "the continued preemptive effect of the CAA in the event that the EPA finalizes the proposed rescission or otherwise concludes that it lacks authority to regulate GHG emissions under CAA section 202(a) or any other specific regulatory provision of the CAA," (C-10). EPA also offers its view that "this proposed action would not impact Federal preemption for motor vehicle and engine emission standards under CAA section 209(a) or under EPCA and EISA, including with respect to GHGs." 90 Fed. Reg. at 36,314.

There are no reliance interests in either national uniformity or preemption that support finalizing the proposed rescission and/or any of the alternatives or rationales. As discussed

[903] For example, the International Council on Clean Transportation reports that at a range of 20 miles, a PHEV can expect to cover around 45% of driving in electric mode, while a 50 mile range enables close to 75% electric driving. *See* Aaron Isenstadt et al., *Real World Usage of Plug-in Hybrid Vehicles in the United States*, ICCT at 3 (Dec. 2022). https://theicct.org/wp-content/uploads/2022/12/real-world-phev-us-dec22.pdf

above, EPA should abandon the proposed rescission and instead follow its duty to protect human health and the environment by continuing to implement and enforce the existing federal vehicle emission standards for all categories of vehicles. Furthermore, no EPA rules, determinations or preamble statements have any bearing on the preemptive effect of CAA Section 209(a); thus, there is no reason for EPA to solicit comment on that issue and no basis for EPA to fashion any final action based on a purported interpretation of the preemptive effect of Section 209(a).

As a general matter, agencies "have no special authority to pronounce on preemption absent delegation from Congress." *Wyeth v. Levine*, 555 U.S. 555, 577 (2009). Section 209(a) clearly does not delegate to EPA authority to decide whether a given state law is preempted, or even whether that state law is "related to the control of emission from new motor vehicles or new motor vehicle engines." 42 U.S.C. § 7543(a). Nor is EPA entitled to deference insofar as it purports to adopt an interpretation of the preemptive effect of Section 209(a). *See Wyeth*, 555 U.S. at 577; *Loper Bright Enterprises v. Raimondo*, 603 U.S. 369, 413 (2024).

EPA does not solicit comment on EPCA preemption but, as noted above, offers its view that "the proposed repeal would not impact Federal preemption under EPCA, as amended by EISA, related to fuel economy standards." 90 Fed. Reg. at 36,314. While EPA makes note of its limited "role in administering EPCA and EISA" (*id*.), the agency plays no role with respect to EPCA's preemption provision, 49 U.S.C. § 32919(a). Indeed, that provision provides no authority to NHTSA, EPCA's primary implementer, much less to EPA, to make any pronouncement regarding EPCA preemption. Accordingly, for all the same reasons stated above with respect to Section 209(a) of the CAA, EPA has no authority to make any pronouncement regarding EPCA preemption and/or how this proposed action may impact EPCA preemption.

X. Conclusion

EPA should abandon this ill-advised and illegal proposal. To the extent EPA wishes to finalize this rulemaking based on new analyses developed after the public comment period, including to address the myriad of fatal defects identified by our public comments, the agency must provide the public with renewed notice and opportunity to comment. *See* 42 U.S.C. § 7607(d)(3). Alternatively, EPA should reclassify the proposal as an Advance Notice of Proposed Rulemaking to allow the agency to gather additional information and clarify the many points of uncertainty necessary for EPA to meet its fundamental duties under the Clean Air Act and APA.

Signatures:

Alliance of Nurses for Healthy Environments
Center for Biological Diversity
Clean Air Council
Clean Air Task Force
Clean Wisconsin
Conservation Law Foundation
Earthjustice
Environmental Defense Fund
Environmental Law & Policy Center

Natural Resources Defense Council
Public Citizen
Rio Grande International Study Center
Sierra Club
Union of Concerned Scientists

Appendix A: Endangered Species

Using GIS analysis, we estimate that 249 federally listed species (including subspecies and DPSs) have critical habitat within 500 meters of a national highway freight corridor, listed in Table 1 below. Data sources are the U.S. Department of Transportation National Highway Freight Network (NHFN) Visualization Tool to map major highway freight corridors, available at https://ops.fhwa.dot.gov/freight/fpcb/tools_nhfn.aspx, NMFS critical habitat data available at https://noaa.maps.arcgis.com/home/item.html?id=f66c1e33f91d480db7d1b1c1336223c3 and USFWS critical habitat data available at https://ecos.fws.gov/ecp/report/critical-habitat

Table 1

Common Name	Scientific Name
No common name	Achyranthes mutica
Sturgeon, green [Southern DPS]	Acipenser medirostris
Gulf sturgeon	Acipenser oxyrinchus (=oxyrhynchus) desotoi
Sturgeon, Atlantic (Gulf subspecies)	Acipenser oxyrinchus desotoi
Sturgeon, Atlantic (Atlantic subspecies)[Carolina DPS]	Acipenser oxyrinchus oxyrinchus
Sturgeon, Atlantic (Atlantic subspecies)[Chesapeake Bay DPS]	Acipenser oxyrinchus oxyrinchus
Sturgeon, Atlantic (Atlantic subspecies)[Gulf of Maine DPS]	Acipenser oxyrinchus oxyrinchus
Sturgeon, Atlantic (Atlantic subspecies)[New York Bight DPS]	Acipenser oxyrinchus oxyrinchus
Sturgeon, Atlantic (Atlantic subspecies)[South Atlantic DPS]	Acipenser oxyrinchus oxyrinchus
Coral, staghorn	Acropora cervicornis
Coral, elkhorn	Acropora palmata
Palai la`au	Adenophorus periens
Yellow-shouldered blackbird	Agelaius xanthomus
Fat threeridge (mussel)	Amblema neislerii
San Diego ambrosia	Ambrosia pumila
California tiger Salamander	Ambystoma californiense
Frosted Flatwoods salamander	Ambystoma cingulatum
Arroyo (=arroyo southwestern) toad	Anaxyrus californicus
Mississippi sandhill crane	Antigone canadensis pulla
Georgia rockcress	Arabis georgiana
Franciscan manzanita	Arctostaphylos franciscana
Shivwits milk-vetch	Astragalus ampullarioides

Braunton's milk-vetch	Astragalus brauntonii
Holmgren milk-vetch	Astragalus holmgreniorum
Coachella Valley milk-vetch	Astragalus lentiginosus var. coachellae
Puerto Rican harlequin butterfly	Atlantea tulita
Ko`oko`olau	Bidens micrantha ssp. ctenophylla
Rusty patched bumble bee	Bombus affinis
Marbled Murrelet	Brachyramphus marmoratus
Vernal pool fairy shrimp	Branchinecta lynchi
San Diego fairy shrimp	Branchinecta sandiegonensis
Thread-leaved brodiaea	Brodiaea filifolia
Santa Ana sucker	Catostomus santaanae
Piping Plover	Charadrius melodus
Western Snowy Plover	Charadrius nivosus nivosus
Oahu elepaio	Chasiempis ibidis
June sucker	Chasmistes liorus
Sea turtle, green [Central North Pacific DPS]	Chelonia mydas
Sea turtle, green [East Pacific DPS]	Chelonia mydas
Sea turtle, green [North Atlantic DPS]	Chelonia mydas
Salt Creek Tiger beetle	Cicindela nevadica lincolniana
Wright's marsh thistle	Cirsium wrightii
Yellow-billed Cuckoo	Coccyzus americanus
Soft bird's-beak	Cordylanthus mollis ssp. mollis
diamond Darter	Crystallaria cincotta
Spectaclecase (mussel)	Cumberlandia monodonta
Haha	Cyanea acuminata
Haha	Cyanea calycina
haha	Cyanea crispa
Haha	Cyanea grimesiana ssp. grimesiana
Haha	Cyanea humboldtiana
Haha	Cyanea koolauensis
Haha	Cyanea lanceolata
Haha	Cyanea purpurellifolia
Haha	Cyanea st.-johnii
Haha	Cyanea truncata
Guadalupe Orb	Cyclonaias necki
Desert pupfish	Cyprinodon macularius
Ouachita fanshell	Cyprogenia sp. cf. aberti
Ha`iwale	Cyrtandra dentata

Haiwale	Cyrtandra gracilis
Ha`iwale	Cyrtandra kaulantha
Ha`iwale	Cyrtandra polyantha
Ha`iwale	Cyrtandra sessilis
Ha`iwale	Cyrtandra subumbellata
Ha`iwale	Cyrtandra viridiflora
Haiwale	Cyrtandra waiolani
Whale, beluga [Cook Inlet DPS]	Delphinapterus leucas
Coral, pillar	Dendrogyra cylindrus
San Bernardino Merriam's kangaroo rat	Dipodomys merriami parvus
Spring pygmy sunfish	Elassoma alabamae
Golden coqui	Eleutherodactylus jasperi
Chipola slabshell	Elliptio chipolaensis
Yellow lance	Elliptio lanceolata
Purple bankclimber (mussel)	Elliptoideus sloatianus
Southwestern willow flycatcher	Empidonax traillii extimus
Grouper, Nassau	Epinephelus striatus
Cumberlandian combshell	Epioblasma brevidens
Oyster mussel	Epioblasma capsaeformis
Upland combshell	Epioblasma metastriata
Southern acornshell	Epioblasma othcaloogensis
Snuffbox mussel	Epioblasma triquetra
Spotfin Chub	Erimonax monachus
Fountain darter	Etheostoma fonticola
Candy darter	Etheostoma osburni
Cumberland darter	Etheostoma susanae
Trispot darter	Etheostoma trisella
Tidewater goby	Eucyclogobius newberryi
Florida bonneted bat	Eumops floridanus
`Akoko	Euphorbia deppeana
`Akoko	Euphorbia rockii
Bay checkerspot butterfly	Euphydryas editha bayensis
Salado Salamander	Eurycea chisholmensis
Tapered pigtoe	Fusconaia burkei
Narrow pigtoe	Fusconaia escambia
Atlantic pigtoe	Fusconaia masoni
Longsolid	Fusconaia subrotunda
Nanu	Gardenia mannii
Bonytail	Gila elegans

Gila chub	Gila intermedia
Virgin River Chub	Gila seminuda (=robusta)
Desert tortoise	Gopherus agassizii
Whooping crane	Grus americana
California condor	Gymnogyps californianus
Finelined pocketbook	Hamiota altilis
Southern Sandshell	Hamiota australis
Orangenacre mucket	Hamiota perovalis
Shinyrayed pocketbook	Hamiota subangulata
Pecos (=puzzle, =paradox) sunflower	Helianthus paradoxus
Dakota Skipper	Hesperia dacotae
No common name	Hesperomannia arborescens
Rio Grande Silvery Minnow	Hybognathus amarus
Delta smelt	Hypomesus transpacificus
Aupaka	Isodendrion longifolium
wahine noho Kula	Isodendrion pyrifolium
Kamakahala	Labordia cyrtandrae
Guadalupe Fatmucket	Lampsilis bergmanni
Texas fatmucket	Lampsilis bracteata
Neosho Mucket	Lampsilis rafinesqueana
Contra Costa goldfields	Lasthenia conjugens
Slickspot peppergrass	Lepidium papilliferum
Vernal pool tadpole shrimp	Lepidurus packardi
Interrupted (=Georgia) Rocksnail	Leptoxis foremani
No common name	Lobelia koolauensis
No common name	Lobelia oahuensis
Canada Lynx	Lynx canadensis
No common name	Lysimachia filifolia
Peppered chub	Macrhybopsis tetranema
Blackburn's sphinx moth	Manduca blackburni
Alabama pearlshell	Margaritifera marrianae
Alameda whipsnake (=striped racer)	Masticophis lateralis euryxanthus
Spikedace	Meda fulgida
Alabama moccasinshell	Medionidus acutissimus
Alabama moccasinshell	Medionidus acutissimus
Coosa moccasinshell	Medionidus parvulus
Gulf moccasinshell	Medionidus penicillatus
Ochlockonee moccasinshell	Medionidus simpsonianus
Suwannee moccasinshell	Medionidus walkeri

Crimson Hawaiian damselfly	Megalagrion leptodemas
Blackline Hawaiian damselfly	Megalagrion nigrohamatum nigrolineatum
Oceanic Hawaiian damselfly	Megalagrion oceanicum
No common name	Melicope cornuta var. cornuta
Alani	Melicope hiiakae
Alani	Melicope lydgatei
Coral, rough cactus	Mycetophyllia ferox
Indiana bat	Myotis sodalis
Kolea	Myrsine juddii
Spreading navarretia	Navarretia fossalis
Black warrior (=Sipsey Fork) Waterdog	Necturus alabamensis
Neuse River waterdog	Necturus lewisi
Seal, Hawaiian monk	Neomonachus schauinslandi
Arkansas River shiner	Notropis girardi
Topeka shiner	Notropis topeka (=tristis)
Carolina madtom	Noturus furiosus
Poweshiek skipperling	Oarisma poweshiek
Choctaw bean	Obovaria choctawensis
Round hickorynut	Obovaria subrotunda
Salmon, chum [Columbia River ESU]	Oncorhynchus keta
Salmon, coho [Lower Columbia River ESU]	Oncorhynchus kisutch
Salmon, coho [Oregon Coast ESU]	Oncorhynchus kisutch
Steelhead [California Central Valley DPS]	Oncorhynchus mykiss
Steelhead [Central California Coast DPS]	Oncorhynchus mykiss
Steelhead [Lower Columbia River DPS]	Oncorhynchus mykiss
Steelhead [Middle Columbia River DPS]	Oncorhynchus mykiss
Steelhead [Puget Sound DPS]	Oncorhynchus mykiss
Steelhead [Snake River Basin DPS]	Oncorhynchus mykiss
Steelhead [South-Central California Coast DPS]	Oncorhynchus mykiss
Steelhead [Southern California DPS]	Oncorhynchus mykiss
Steelhead [Upper Columbia River DPS]	Oncorhynchus mykiss
Steelhead [Upper Willamette River DPS]	Oncorhynchus mykiss
Salmon, sockeye [Snake River ESU]	Oncorhynchus nerka
Salmon, Chinook [Central Valley spring-run ESU]	Oncorhynchus tshawytscha
Salmon, Chinook [Lower Columbia River ESU]	Oncorhynchus tshawytscha
Salmon, Chinook [Puget Sound ESU]	Oncorhynchus tshawytscha
Salmon, Chinook [Sacramento River winter-run ESU]	Oncorhynchus tshawytscha

Salmon, Chinook [Snake River fall-run ESU]	Oncorhynchus tshawytscha
Salmon, Chinook [Upper Columbia River spring-run ESU]	Oncorhynchus tshawytscha
Salmon, Chinook [Upper Willamette River ESU]	Oncorhynchus tshawytscha
Coral, lobed star	Orbicella annularis
Coral, mountainous star	Orbicella faveolata
Coral, boulder star	Orbicella franksi
Whale, killer [Southern Resident DPS]	Orcinus orca
Jaguar	Panthera onca
Lyon's pentachaeta	Pentachaeta lyonii
Pearl darter	Percina aurora
Sickle darter	Percina williamsi
DeBeque phacelia	Phacelia submutica
Wawae`iole	Phlegmariurus nutans
No common name	Phyllostegia hirsuta
No common name	Phyllostegia parviflora
Woundfin	Plagopterus argentissimus
Kuahiwi laukahi	Plantago princeps
No common name	Platanthera holochila
Sheepnose Mussel	Plethobasus cyphyus
Southern clubshell	Pleurobema decisum
Dark pigtoe	Pleurobema furvum
Southern pigtoe	Pleurobema georgianum
Ovate clubshell	Pleurobema perovatum
Oval pigtoe	Pleurobema pyriforme
Fuzzy pigtoe	Pleurobema strodeanum
Slabside Pearlymussel	Pleuronaia dolabelloides
Coastal California gnatcatcher	Polioptila californica californica
`Ohe`ohe	Polyscias gymnocarpa
Texas Hornshell	Popenaias popeii
Sawfish, smalltooth [U.S. DPS]	Pristis pectinata
Whale, false killer [Main Hawaiian Islands Insular DPS]	Pseudorca crassidens
Kopiko	Psychotria hexandra var. oahuensis
Kaulu	Pteralyxia macrocarpa
No common name	Pteris lidgatei
Triangular Kidneyshell	Ptychobranchus greenii
Southern kidneyshell	Ptychobranchus jonesi
Fluted kidneyshell	Ptychobranchus subtentus

Colorado pikeminnow	Ptychocheilus lucius
Rabbitsfoot	Quadrula cylindrica cylindrica
California red-legged frog	Rana draytonii
Oregon spotted frog	Rana pretiosa
dusky gopher frog	Rana sevosa
Sierra Nevada Yellow-legged Frog	Rana sierrae
Round Ebonyshell	Reginaia rotulata
Everglade snail kite	Rostrhamus sociabilis plumbeus
Atlantic salmon	Salmo salar
Salmon, Atlantic [Gulf of Maine DPS]	Salmo salar
Bull Trout	Salvelinus confluentus
No common name	Sanicula purpurea
No common name	Schiedea kaalae
Ocmulgee skullcap	Scutellaria ocmulgee
Bocaccio [Puget Sound-Georgia Basin DPS]	Sebastes paucispinis
Rockfish, yelloweye [Puget Sound-Georgia Basin DPS]	Sebastes ruberrimus
Buena Vista Lake ornate Shrew	Sorex ornatus relictus
Gierisch mallow	Sphaeralcea gierischii
Longfin Smelt	Spirinchus thaleichthys
Riverside fairy shrimp	Streptocephalus woottoni
Northern spotted owl	Strix occidentalis caurina
Mexican spotted owl	Strix occidentalis lucida
Eulachon [Southern DPS]	Thaleichthys pacificus
Northern Mexican gartersnake	Thamnophis eques megalops
Loach minnow	Tiaroga cobitis
No common name	Trematolobelia singularis
West Indian Manatee	Trichechus manatus
Texas fawnsfoot	Truncilla macrodon
Coachella Valley fringe-toed lizard	Uma inornata
No common name	Varronia rupicola
Rayed Bean	Villosa fabalis
No common name	Viola oahuensis
Least Bell's vireo	Vireo bellii pusillus
Razorback sucker	Xyrauchen texanus
A`e	Zanthoxylum oahuense
Preble's meadow jumping mouse	Zapus hudsonius preblei
Texas wild-rice	Zizania texana

Using GIS analysis, we estimate that 52 federally listed species (including subspecies and DPSs) have critical habitat within 5 miles of at least one petroleum refinery, including 19 species with critical habitat within 5 miles of multiple refineries, listed in Table 2 below. We used U.S. Energy Information Administration petroleum refinery data available at https://atlas.eia.gov/datasets/6547eda91ef84cc386e23397cf834524_22/about, NMFS critical habitat data available at https://noaa.maps.arcgis.com/home/item.html?id=f66c1e33f91d480db7d1b1c1336223c3 and USFWS critical habitat data available at https://ecos.fws.gov/ecp/report/critical-habitat.

Table 2

Common Name	**Scientific Name**
Round-leaved chaff-flower	Achyranthes splendens var. rotundata
Sturgeon, green [Southern DPS]	Acipenser medirostris
Gulf sturgeon	Acipenser oxyrinchus (=oxyrhynchus) desotoi
Sturgeon, Atlantic (Gulf subspecies)	Acipenser oxyrinchus desotoi
Sturgeon, Atlantic (Atlantic subspecies)[New York Bight DPS]	Acipenser oxyrinchus oxyrinchus
Ko`oko`olau	Bidens amplectens
Rusty patched bumble bee	Bombus affinis
No common name	Bonamia menziesii
Piping Plover	Charadrius melodus
Western Snowy Plover	Charadrius nivosus nivosus
Sea turtle, green [Central North Pacific DPS]	Chelonia mydas
Sea turtle, green [East Pacific DPS]	Chelonia mydas
Sea turtle, green [North Atlantic DPS]	Chelonia mydas
Soft bird's-beak	Cordylanthus mollis ssp. mollis
Whale, beluga [Cook Inlet DPS]	Delphinapterus leucas
`Akoko	Euphorbia celastroides var. kaenana
`Akoko	Euphorbia haeleeleana
`Akoko	Euphorbia skottsbergii var. skottsbergii
Longsolid	Fusconaia subrotunda
No common name	Gouania meyenii
No common name	Gouania vitifolia
(=Native yellow hibiscus) ma`o hau hele	Hibiscus brackenridgei
Delta smelt	Hypomesus transpacificus
wahine noho Kula	Isodendrion pyrifolium
Contra Costa goldfields	Lasthenia conjugens
Alameda whipsnake (=striped racer)	Masticophis lateralis euryxanthus

nehe	Melanthera tenuifolia
Seal, Hawaiian monk	Neomonachus schauinslandi
No common name	Neraudia angulata
Kulu`i	Nototrichium humile
Pecos bluntnose shiner	Notropis simus pecosensis
Steelhead [Central California Coast DPS]	Oncorhynchus mykiss
Steelhead [Puget Sound DPS]	Oncorhynchus mykiss
Salmon, Chinook [Sacramento River winter-run ESU]	Oncorhynchus tshawytscha
Salmon, Chinook [Puget Sound ESU]	Oncorhynchus tshawytscha
Whale, killer [Southern Resident DPS]	Orcinus orca
Coastal California gnatcatcher	Polioptila californica californica
Whale, false killer [Main Hawaiian Islands Insular DPS]	Pseudorca crassidens
California red-legged frog	Rana draytonii
Bull Trout	Salvelinus confluentus
Awiwi	Schenkia sebaeoides
No common name	Schiedea hookeri
Ma`oli`oli	Schiedea kealiae
Bocaccio [Puget Sound-Georgia Basin DPS]	Sebastes paucispinis
Rockfish, yelloweye [Puget Sound-Georgia Basin DPS]	Sebastes ruberrimus
Ohai	Sesbania tomentosa
Hine's emerald dragonfly	Somatochlora hineana
No common name	Spermolepis hawaiiensis
Longfin Smelt	Spirinchus thaleichthys
Polar bear	Ursus maritimus
No common name	Vigna o-wahuensis
Rayed Bean	Villosa fabalis

Using GIS analysis, we estimate that 133 federally listed species have critical habitat within 10 miles of at least one petroleum refinery, including 28 species with critical habitat within 10 miles of multiple refineries, as listed in Table 3 below.

Table 3

Common Name	**Scientific Name**
No common name	Abutilon sandwicense
Round-leaved chaff-flower	Achyranthes splendens var. rotundata
Sturgeon, green [Southern DPS]	Acipenser medirostris
Gulf sturgeon	Acipenser oxyrinchus (=oxyrhynchus) desotoi
Sturgeon, Atlantic (Gulf subspecies)	Acipenser oxyrinchus desotoi
Sturgeon, Atlantic (Atlantic subspecies)[New York Bight DPS]	Acipenser oxyrinchus oxyrinchus
Mahoe	Alectryon macrococcus
No common name	Asplenium (=Diellia) dielfalcatum (=falcata)
No common name	Asplenium unisorum
Ko`oko`olau	Bidens amplectens
Rusty patched bumble bee	Bombus affinis
No common name	Bonamia menziesii
rufa red knot	Calidris canutus rufa
Sea turtle, loggerhead [Northwest Atlantic Ocean DPS]	Caretta caretta
Kamanomano	Cenchrus agrimonioides
Piping Plover	Charadrius melodus
Western Snowy Plover	Charadrius nivosus nivosus
Oahu elepaio	Chasiempis ibidis
Sea turtle, green [Central North Pacific DPS]	Chelonia mydas
Sea turtle, green [East Pacific DPS]	Chelonia mydas
Sea turtle, green [North Atlantic DPS]	Chelonia mydas
Robber Baron Cave Meshweaver	Cicurina baronia
Kauila	Colubrina oppositifolia
Soft bird's-beak	Cordylanthus mollis ssp. mollis
Pauoa	Ctenitis squamigera
Haha	Cyanea acuminata
Haha	Cyanea calycina
Haha	Cyanea grimesiana ssp. grimesiana
Haha	Cyanea grimesiana ssp. obatae

Haha	Cyanea longiflora
Haha	Cyanea pinnatifida
Haha	Cyanea superba
No common name	Cyperus pennatiformis
Ha`iwale	Cyrtandra dentata
Oha	Delissea subcordata
Whale, beluga [Cook Inlet DPS]	Delphinapterus leucas
No common name	Diplazium molokaiense
Hala pepe	Dracaena forbesii
Hawaiian picture-wing fly	Drosophila aglaia
Hawaiian picture-wing fly	Drosophila hemipeza
Hawaiian picture-wing fly	Drosophila montgomeryi
Hawaiian picture-wing fly	Drosophila substenoptera
Hawaiian picture-wing fly	Drosophila tarphytrichia
Na`ena`e	Dubautia herbstobatae
Fosberg's love grass	Eragrostis fosbergii
Nioi	Eugenia koolauensis
`Akoko	Euphorbia celastroides var. kaenana
`Akoko	Euphorbia haeleeleana
`Akoko	Euphorbia herbstii
`Akoko	Euphorbia kuwaleana
`Akoko	Euphorbia skottsbergii var. skottsbergii
Taylor's (=whulge) Checkerspot	Euphydryas editha taylori
Mehamehame	Flueggea neowawraea
Longsolid	Fusconaia subrotunda
Nanu	Gardenia mannii
Palos Verdes blue butterfly	Glaucopsyche lygdamus palosverdesensis
No common name	Gouania meyenii
No common name	Gouania vitifolia
Abalone, black	Haliotis cracherodii
No common name	Hesperomannia arborescens
No common name	Hesperomannia arbuscula
(=Native yellow hibiscus) ma`o hau hele	Hibiscus brackenridgei
Santa Cruz tarplant	Holocarpha macradenia
Delta smelt	Hypomesus transpacificus
Aupaka	Isodendrion laurifolium
Aupaka	Isodendrion longifolium
wahine noho Kula	Isodendrion pyrifolium

Kio`ele	Kadua coriacea
No common name	Kadua degeneri
No common name	Kadua parvula
Hulumoa	Korthalsella degeneri
Kamakahala	Labordia cyrtandrae
Contra Costa goldfields	Lasthenia conjugens
`Anaunau	Lepidium arbuscula
nehe	Lipochaeta lobata var. leptophylla
No common name	Lobelia niihauensis
No common name	Lobelia oahuensis
Canada Lynx	Lynx canadensis
Alameda whipsnake (=striped racer)	Masticophis lateralis euryxanthus
nehe	Melanthera tenuifolia
Alani	Melicope christophersenii
No common name	Melicope cornuta var. decurrens
Alani	Melicope makahae
Alani	Melicope pallida
Alani	Melicope saint-johnii
Seal, Hawaiian monk	Neomonachus schauinslandi
No common name	Neraudia angulata
Kulu`i	Nototrichium humile
Pecos bluntnose shiner	Notropis simus pecosensis
Salmon, coho [Central California Coast ESU]	Oncorhynchus kisutch
Steelhead [Central California Coast DPS]	Oncorhynchus mykiss
Steelhead [Puget Sound DPS]	Oncorhynchus mykiss
Salmon, Chinook [Sacramento River winter-run ESU]	Oncorhynchus tshawytscha
Salmon, Chinook [Puget Sound ESU]	Oncorhynchus tshawytscha
Whale, killer [Southern Resident DPS]	Orcinus orca
Makou	Peucedanum sandwicense
No common name	Phyllostegia hirsuta
No common name	Phyllostegia kaalaensis
No common name	Phyllostegia mollis
No common name	Phyllostegia parviflora
Short's bladderpod	Physaria globosa
Kuahiwi laukahi	Plantago princeps
Sheepnose Mussel	Plethobasus cyphyus
Coastal California gnatcatcher	Polioptila californica californica

Whale, false killer [Main Hawaiian Islands Insular DPS]	Pseudorca crassidens
Kaulu	Pteralyxia macrocarpa
California red-legged frog	Rana draytonii
Bull Trout	Salvelinus confluentus
No common name	Sanicula mariversa
Awiwi	Schenkia sebaeoides
No common name	Schiedea hookeri
No common name	Schiedea kaalae
Ma`oli`oli	Schiedea kealiae
No common name	Schiedea nuttallii
No common name	Schiedea obovata
No common name	Schiedea trinervis
Bocaccio [Puget Sound-Georgia Basin DPS]	Sebastes paucispinis
Rockfish, yelloweye [Puget Sound-Georgia Basin DPS]	Sebastes ruberrimus
Ohai	Sesbania tomentosa
No common name	Silene lanceolata
No common name	Silene perlmanii
`Aiakeakua, popolo	Solanum sandwicense
Hine's emerald dragonfly	Somatochlora hineana
No common name	Spermolepis hawaiiensis
Longfin Smelt	Spirinchus thaleichthys
No common name	Stenogyne kanehoana
No common name	Tetramolopium filiforme
No common name	Tetramolopium lepidotum ssp. lepidotum
Opuhe	Urera kaalae
Polar bear	Ursus maritimus
No common name	Vigna o-wahuensis
Rayed Bean	Villosa fabalis
Pamakani	Viola chamissoniana ssp. chamissoniana