

CAA BARS TRUMP'S DEAL TO REPEAL ENDANGERMENT FINDING AND VEHICLE STANDARDS

by Bob Yuhnke

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Many Americans are baffled by the Donald Trump Administration EPA's proposal to revoke the Agency's 2009 finding that greenhouse gas (GHG) emissions endanger public health and welfare, and along with it the standards limiting carbon dioxide (CO₂) emissions from new cars and trucks.¹

After a year that began with the nation watching North Carolina struggle to recover from Hurricane Helene's massive flooding; followed by a week of multiple fires in Los Angeles that incinerated the homes of more than 16,000 families, killing 31 in the flames and another 400 from cardiovascular and respiratory conditions triggered by toxic smoke²; then a summer of heat waves across the nation that increased mortality among elders and children; punctuated by sudden catastrophic 30-foot floods that drowned sleeping young campers; and 100 million Americans across the Midwest and Northeast under a pall of deadly smoke from massive fires across Canada, we may well wonder how EPA can assert with a straight face that heat, fires, and floods exacerbated by climate change do not endanger public health and welfare?

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The author submitted comments regarding EPA's proposed rule on behalf of ECA, focusing on how the proposed changes violate CAA statutory provisions that govern vehicle standards. He does not represent ECA as legal counsel; the comments were drafted in his role as a member of ECA's Policy Committee.

1. Reconsideration of 2009 Endangerment Finding and Greenhouse Gas Vehicle Standards, 90 Fed. Reg. 36288 (Aug. 1, 2025).
2. Eugenio Paglino et al., *Excess Deaths Attributable to the Los Angeles Wildfires From January 5 to February 1, 2025*, 334 JAMA 1018 (2025), <https://doi.org/10.1001/jama.2025.10556>.

When candidate Trump asked oil industry executives to donate \$1 billion to his campaign,³ what might he have offered in return? Now we know: locking in a \$6 trillion market for fossil fuels by blocking for at least a decade the state and federal governments from pressing automakers to transition from petroleum-fueled internal combustion engines (ICEs)—the largest U.S. source of climate-warming GHGs and air pollution—to clean zero emission vehicles (ZEVs).

I. Summary

The Trump EPA is rescinding the endangerment finding (EF) for GHGs to implement the oil industry's strategy to prevent loss of its \$600-billion annual market for petroleum fuels for at least the next decade, and potentially until 2050. To save that revenue stream, industry must stop the transition to clean vehicle technologies that do not burn fossil carbon. Given the delays inherent in rulemaking and new opportunities for litigation before a corporate-dominated, regulation-hostile U.S. Supreme Court, EPA's rescission of federal emission standards and the EF on which they are based would allow the oil industry to obstruct any new GHG standards advanced by a president elected in 2028 until at least the 2036 model year.

Now that the U.S. Congress has blocked California's ZEV standards,⁴ EPA's revocation of the current federal CO₂ standards for new vehicles, along with the loss of tax credits for both ZEV purchasers and producers, will eliminate all incentives for manufacturers and dealers to promote ZEV sales. Programs to stimulate public demand for ZEVs will be gone.

Revoking federal CO₂ standards for cars and trucks will cripple expansion in ZEV market share beyond current levels (< 10% nationally in 2024). As explained below, at that level of market penetration, roughly 158 million of the

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3. Ben Lefebvre, *Trump Pressed Oil Executives to Give \$1 Billion for His Campaign, People in Industry Say*, POLITICO (May 9, 2024), <https://www.politico.com/news/2024/05/09/trump-asks-oil-executives-campaign-finance-00157131>; Lisa Friedman, *Candidate Trump Promised Oil Executives a Windfall. Now, They're Getting It*, N.Y. TIMES (July 30, 2025), <https://www.nytimes.com/2025/07/30/climate/trump-campaign-funding-oil-industry-tax-breaks.html>.
 4. John D. Graham, *Crippled by the CRA? Lawful Pathways to California's Electric Vehicle Transition*, 55 ELR 10520 (Sept. 2025), <https://www.elr.info/articles/elr-articles/crippled-cra-lawful-pathways-californias-electric-vehicle-transition>.

175 million new vehicles added to the national light-duty fleet between now and 2036 will be polluting ICE vehicles, instead of adding 92 million electric vehicles (EVs). Revocation will achieve the industry's goal: the total ICE fleet will grow from around 264 million now to 280 million units by 2036, with comparable increases in petroleum fuel combustion and CO₂ emissions.

Increased CO₂ emissions will contribute to the rapid acceleration in warming recorded since the Intergovernmental Panel on Climate Change (IPCC) 2018 report⁵ was issued, adding to the devastation happening since global mean temperature increase topped the 1.5 degrees Celsius (°C) benchmark last year. But more importantly, if another 160 million ICE vehicles are added to the national vehicle fleet by 2036, it will be impossible to phase out ICE vehicles, petroleum fuels, and CO₂ emissions from the transportation sector to achieve a net-zero economy by 2050, even if every new vehicle after 2036 were a ZEV.

ICE vehicles are also the primary source in the United States of the pollutants that cause urban smog and the soot that contributes most to diseases from air pollution and premature deaths. Nitrogen oxide (NO_x) emissions from ICE vehicles will seriously aggravate ozone nonattainment all across the country, and potentially prevent serious, severe, and extreme nonattainment areas from reducing emissions to the levels needed to meet Clean Air Act (CAA) smog standards. NO_x and carbon particles emitted from tailpipes will also contribute to violations of the new national ambient air quality standard (NAAQS) for fine particulate matter (PM_{2.5}).

This Comment explains (1) the role the Trump Administration's EPA is playing to prevent states and federal agencies from creating a regulatory framework to transition the U.S. transportation sector from the largest source of pollutants that cause climate warming and harm public health to zero emission technologies; (2) why the pseudo-science cited to withdraw the EF is invalid; (3) the implications that EPA's proposed actions have for future climate policy and on the health of 156 million Americans living in areas with harmful air pollution; and (4) why EPA's proposal to rescind CO₂ emission standards violates the CAA.

II. Clean Vehicles Are Essential to Stop Heating the Planet

To end climate warming and restore a stable climate, the Joseph Biden Administration committed to honoring the science in the IPCC's 2018 report, which made clear that the climate would continue to heat up until the planet achieved "net zero" GHG emissions.⁶ President Biden declared on Inauguration Day 2021 that the national policy was to "put the United States on a path to achieve net-zero emissions, economy-wide, by no later than 2050."⁷

After the United States reversed President Trump's decision to withdraw from the Paris Climate Agreement, climate envoy John Kerry submitted a "nationally determined contribution" (NDC) at the 26th Conference of the Parties that committed the United States to reduce CO₂ 50%-52% economywide by 2030.⁸ To meet the 2030 NDC and ultimately achieve "net zero" for the U.S. transportation sector, Biden assembled a multiagency task force that drafted the U.S. National Blueprint for Transportation Decarbonization,⁹ which recognized that transportation is the largest U.S. source of CO₂ and must transition to zero emission technologies for the United States to achieve a net-zero CO₂ economy by 2050.¹⁰

To support California's objective of achieving carbon neutrality by 2045 and protect Californians from the worst air pollution in the country, the California Air Resources Board (CARB) adopted Advanced Clean Cars emission standards for new vehicles requiring manufacturers to gradually phase out the sale of polluting vehicles until all new ICE cars, vans, and pickups would be banned after 2035,¹¹ and Advanced Clean Trucks standards requiring many classes of new trucks to be zero emission after 2035.¹² By 2024, 17 other states had adopted CARB's Clean Cars regulation, and 12 adopted the Clean Trucks standards.

EPA followed suit in 2024 with CO₂ emission standards for light-duty vehicles (LDVs), medium-duty vehicles (MDVs),¹³ and heavy-duty vehicles (HDVs)¹⁴ sold between 2027 and 2032 that pressed manufacturers to include ZEVs in their product mix. EPA estimated that to meet the fleetwide CO₂ standards by 2032, automakers would need to make ZEVs 68% of LDV sales, and about 30% of HDV sales would be ZEVs.

A. Transitioning to Clean Vehicles Threatens Oil Industry Profits

These initiatives to transition the transportation sector to zero emissions threaten the profits of the oil industry. To preserve a \$606.5-billion annual U.S. market for petro-

5. IPCC, GLOBAL WARMING OF 1.5° C (Valérie Masson-Delmotte et al. eds., 2018), https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SR15_Full_Report_LR.pdf.

6. *Id.*

7. Exec. Order No. 14008, §201, 86 Fed. Reg. 7619 (Feb. 1, 2021).

8. U.S. DEPARTMENT OF STATE, THE LONG-TERM STRATEGY OF THE UNITED STATES: PATHWAYS TO NET-ZERO GREENHOUSE GAS EMISSIONS BY 2050 (2021), <https://unfccc.int/sites/default/files/resource/US-LongTermStrategy-2021.pdf>.

9. U.S. DEPARTMENT OF ENERGY ET AL., THE U.S. NATIONAL BLUEPRINT FOR TRANSPORTATION DECARBONIZATION (2023), <https://www.energy.gov/sites/default/files/2023-01/EERE-Decarbonization-Transportation-Report-508.pdf>.

10. Exec. Order No. 14008, §201, 86 Fed. Reg. 7619 (Feb. 1, 2021).

11. CARB, *Advanced Clean Cars*, <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/advanced-clean-cars> (last visited Oct. 14, 2025).

12. CARB, *Advanced Clean Trucks*, <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks/about> (last visited Oct. 14, 2025).

13. Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, 89 Fed. Reg. 27842 (Apr. 18, 2024), <https://www.govinfo.gov/content/pkg/FR-2024-04-18/pdf/2024-06214.pdf>.

14. Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles—Phase 3, 89 Fed. Reg. 29440 (Apr. 22, 2024) [hereinafter HDV Standards].

leum fuels¹⁵ purchased at the pump by families and businesses, the oil industry needs to stop replacement of ICEs with ZEVs. Industry executives understand that no matter how deadly or costly climate-related disasters become, no political leader can risk shutting down gasoline or diesel fuel production as long as parents and workers must fill up at the gas pump to drive their kids to school or get to their jobs, and as long as products can only be delivered in diesel trucks. The petroleum fuel cycle, including well drilling, fracking, pipelines, and refineries, will remain safe from government climate action as long as the economy has no alternative to the ICE. Industry can also be confident that banks and insurance companies will continue to invest in drilling new wells and building new pipelines as long as drivers have no alternative source of energy.

Oil producers and refiners discovered painfully from the COVID-19 pandemic that only a few weeks of shuttered demand for motor fuels forced refiners to curtail production, which in turn caused crude oil storage facilities at the Cushing hub to fill, which then triggered the need to shut in wells and stop drilling rig operations for the development of new wells. By April 2020, the market price of oil dropped briefly to zero, and remained below the cost of production for months thereafter.¹⁶ By August 2020, active oil field drilling operations dropped to the lowest levels in 50 years,¹⁷ and refinery volumes tanked. Small producers went bankrupt.¹⁸ The vulnerability of oil production to a collapse of the fuels market became obvious.

The COVID-19 pandemic temporarily reduced vehicle miles traveled (VMT) by almost 30% nationwide.¹⁹ The oil industry came face to face with the prospect that if even 30% of the vehicle fleet powered by ICEs is replaced with zero emission technologies, production of new wells could end, potentially for years, before any new wells would be needed to maintain production. Replacement of polluting ICE vehicles with ZEVs is a threat to the economic power and political clout of the oil oligopoly.

This threat to industry profits began to materialize as climate policy became the focus of the Biden Administra-

tion. The Inflation Reduction Act (IRA) enacted tax credits for purchasers of zero emission cars and trucks,²⁰ created investment credits aimed at developing domestic capacity to build both clean vehicles and batteries, and funded a national grant program to implement state plans to create vehicle charging networks along the national and interstate highway networks.²¹

The threat became mandatory with California's Advanced Clean Cars and Clean Trucks regulations. When 17 other states adopted the California Clean Cars rules, and 12 adopted its Clean Trucks rules, 60% of U.S. ICE vehicle sales would be replaced with ZEVs within a decade.

Together, multistate adoption of the California rules and EPA's national CO₂ standards for all future vehicles laid a foundation to begin transitioning the national vehicle fleet to ZEVs. Clean vehicles would replace polluting vehicles slowly during the first decade as older fossil fuel vehicles reached the end of their useful lives, but the oil industry would face a declining loss of market for petroleum fuels beginning in 2030 that would accelerate after 2035 when states adopting the California standards banned the sale of new fossil fuel vehicles.

By 2030, EPA was expected to adopt another round of standards for CO₂ applicable to the 2033 and future model years. This regulatory regime established the framework for transitioning the U.S. transportation sector to the zero emission technologies needed for a "net zero" economy by 2050.

To protect the market for fossil fuels, the oil industry needed to reverse the Biden Administration's initiatives to promote ZEVs. With Trump's reelection in 2024, the industry once again saw an opportunity to block the national and state climate strategies aimed at phasing out fossil fuels. During the first Trump Administration, EPA pulled the plug on the CO₂ standards adopted under the Barack Obama Administration. This time, to preserve the market for vehicle fuels longer than just the current term, they needed to do more than simply repeal Biden's emission standards. States had to be blocked from implementing the California CO₂ standards, and a potential climate-friendly president elected in 2028 would have to be prevented from issuing new CO₂ standards that accelerate the transition to a net-zero transportation sector.

B. Blocking New Federal Zero Emission Standards

The repeal of the 2009 EF²² is a key element in a strategy to prevent the loss of market for petroleum fuels for at least the next decade, and potentially until 2050, by revoking the statutory predicate for the CO₂ emission standards that

15. American drivers paid an estimated \$445 billion for gasoline and \$105 billion for diesel fuel in 2024. The U.S. Energy Information Administration (EIA) reports that U.S. gasoline sales totaled 134.9 billion gallons at an average cost of \$3.30/gallon for a total of \$445.2 billion, and diesel sales totaled 42.9 billion gallons at an average cost of \$3.76/gallon for a total of \$161.3 billion.
16. Matt French, *Crude Oil Prices Briefly Traded Below \$0 in Spring 2020 but Have Since Been Mostly Flat*, EIA (Jan. 5, 2021), <https://www.eia.gov/today-in-energy/detail.php?id=46336>.
17. EIA, *U.S. Crude Oil and Natural Gas Rotary Rigs in Operation (Number of Elements)*, https://www.eia.gov/dnav/ng/hist/e_ertr0_xr0_nus_cm.htm (last released Sept. 30, 2025).
18. Tsvetana Paraskova, *U.S. Oil Bankruptcies Shoot Up in Q1 2021*, OILPRICE.COM (Apr. 16, 2021), <https://oilprice.com/Energy/Energy-General/US-Oil-Bankruptcies-Shoot-Up-In-Q1-2021.html>.
19. *Impacts on Vehicle Miles Traveled During COVID-19*, UNIV. TEX. AUSTIN SCH. ARCHITECTURE (Apr. 24, 2020), <https://soa.utexas.edu/news/impacts-vehicle-miles-traveled-during-covid-19>; Rishav Jaiswal et al., *Impact of COVID-19 on Roadway Travel Behavior: A Comparative Study of the States of Washington and Maryland, USA*, in 2 PROCEEDINGS OF THE 7TH INTERNATIONAL CONFERENCE OF TRANSPORTATION RESEARCH GROUP OF INDIA (CTRG 2023) 47 (Prasanta K. Sahu et al. eds., Springer 2025), https://link.springer.com/chapter/10.1007/978-981-96-1037-2_4.

20. Internal Revenue Service (IRS), *Clean Vehicle Tax Credits*, <https://www.irs.gov/clean-vehicle-tax-credits> (last updated Sept. 24, 2025).
21. U.S. Department of Energy, *New and Used Clean Vehicle Tax Credits*, <https://www.energy.gov/energysaver/new-and-used-clean-vehicle-tax-credits> (last visited Oct. 14, 2025).
22. Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66496 (Dec. 15, 2009) [hereinafter 2009 EF].

provide automakers and truck makers with a mandate that drives their transition to ZEVs.

The Supreme Court highlighted the EF provision as the source of authority in the CAA to regulate GHG emissions, stating:

In relevant part, §202(a)(1) provides that EPA “shall by regulation prescribe . . . standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in [the Administrator’s] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.” 42 U.S.C. §7521(a)(1).²³

EPA’s decision to rescind the EF for GHGs is aimed at ending statutory authority for CO₂ standards.

This is primarily an oil industry strategy,²⁴ joined by some truck fleet operators.²⁵ Last December, automakers asked the incoming Trump Administration not to repeal the rules pushing the transition to ZEVs,²⁶ and heavy-duty engine manufacturers said they were preparing to comply with the new standards in 2027.²⁷

Rescinding the EF is designed to use the delays inherent in multiple rulemakings and new opportunities for litigation before a Supreme Court inclined toward protecting industry to ensure that new standards for CO₂ will not be effective before the 2036 model year at the earliest, and possibly not before 2050 given future opportunities for obstruction. This strategy gives the oil industry multiple litigation and political opportunities to prevent new rules from forcing automakers and truck makers to transition to carbon-free energy technologies. By revoking EPA’s 2009 EF, the Supreme Court’s *Massachusetts* decision would require any future administration to promulgate a new EF before being able to start a rulemaking to regulate any of the six GHGs that EPA listed in the current EF.²⁸

President Obama (through his EPA Administrator Lisa Jackson) was able to issue the first EF within his first year

in office. A new president could probably do the same, which then triggers a new litigation opportunity.²⁹ The current Supreme Court has proven much more hostile to GHG regulation than when Justices John Paul Stevens (author of the *Massachusetts* decision) and Anthony Kennedy were on the Court. Most notably, the Court applied the “major questions” doctrine to reject the Obama EPA’s Clean Power Plan, notwithstanding the Court’s recognition that the 2009 EF granted EPA authority to regulate GHG emissions from power plants.³⁰ To be able to challenge future tailpipe standards, industry fought hard to win this past term’s Supreme Court decision reversing the U.S. Court of Appeals for the District of Columbia (D.C.) Circuit’s holding that unregulated third parties lack standing to challenge tailpipe standards that directly regulate automakers, but do not regulate fuel producers.³¹

In a legal challenge to a hypothetical future EF issued in 2029, industry could at least count on a stay of the EF while the case is being litigated on the merits through the D.C. Circuit Court of Appeals and the Supreme Court, which could last one to three years. The court of appeals rarely grants a stay of EPA rules while an appeal is pending, but since 2016 the Supreme Court has become much more willing to intervene to grant stay petitions to stop new regulations imposing burdens on industry from taking effect pending disposition on the merits. The Court began this practice when it stayed the Obama Clean Power Plan,³² which remained blocked for six years until the Court issued a final decision on the merits in 2022. While any stay of a new EF is in effect, no new rulemaking to set emission standards for GHGs can take effect.

If after merits review either the D.C. Circuit or the Supreme Court remands the new EF rather than affirming it, the delay in commencing any new rulemaking to set CO₂ standards would carry over until after the 2032 election, providing industry with another opportunity to elect a president who would scuttle new CO₂ emission standards. At best, the EF would be affirmed, but a new administration that started a rulemaking to issue new CO₂ emission standards for cars and trucks in late 2031 could not likely complete a final regulation before the end of 2032.

The CAA itself adds another period of delay. New standards must allow time for the industry to develop and apply the requisite technology.³³ For HDVs, the Act mandates that new standards not apply earlier than four years after promulgation.³⁴ Under the most optimistic scenario, CO₂ standards for cars might apply to model year 2035, but not until 2036 for trucks and buses. Then, those regulations establishing emission standards can also be challenged in court.

23. *Massachusetts v. Environmental Prot. Agency*, 549 U.S. 497, 528 (2007).

24. “We support Administrator Zeldin’s proposal to repeal the Biden administration’s costly and unrealistic tailpipe rules, which would have effectively banned new gas-powered vehicles.” Press Release, American Petroleum Institute, API Statement on EPA Proposal to Repeal Vehicle Emissions Standards (July 29, 2025), <https://www.api.org/news-policy-and-issues/news/2025/07/29/api-statement-on-epa-proposal-to-repeal-vehicle-emissions-standards>. But see Karen Zraick & Lisa Friedman, *An E.P.A. Plan to Kill a Major Climate Rule Is Worrying Business Leaders*, N.Y. TIMES (Oct. 25, 2025), <https://www.nytimes.com/2025/10/25/climate/endangerment-finding-auto-energy-lawsuits.html> (API hedging by arguing for retention of enough vestigial EPA authority to preempt state greenhouse gas initiatives).

25. Jeremy Wolfe, *EPA Aims to Roll Back Emissions Regulations*, FLEET OWNER (Mar. 12, 2025), <https://www.fleetowner.com/emissions-efficiency/article/55274187/epa-to-dismantle-ghg3-clean-truck-rules-unrealistic-mandates>.

26. Coral Davenport & Jack Ewing, *Automakers to Trump: Please Require Us to Sell Electric Vehicles*, N.Y. TIMES (Nov. 21, 2024), <https://www.nytimes.com/2024/11/21/climate/gm-ford-electric-vehicles-trump.html>.

27. Garcelle Hodge, *As EPA Reconsiders Truck Emission Standards, OEMs Stick to Biden-Era Rules*, GLOB. FLEET (Mar. 28, 2025), <https://www.globalfleet.com/en/safety-environment/global/features/epa-reconsiders-truck-emission-standards-oems-stick-biden-era-rules>.

28. CO₂, nitrous oxide (N₂O), methane (CH₄), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆).

29. 42 U.S.C. §7607(b).

30. *West Virginia v. Environmental Prot. Agency*, 597 U.S. 697 (2022).

31. See *Diamond Alt. Energy LLC v. Environmental Prot. Agency*, 606 U.S. ___ (2025).

32. *West Virginia v. Environmental Prot. Agency*, 577 U.S. 1126 (2016).

33. 42 U.S.C. §7521(a)(2).

34. *Id.* §7521(a)(3)(B)(ii).

Again, the industry will ask the Supreme Court to stay the effective date of the standards until litigation is completed. If these new standards are stayed, they would not likely apply sooner than the 2039 model year even if ultimately affirmed. This leaves open the opportunity for another new president elected in 2036 or 2040 to rescind these rules before they have any impact on reducing the production of vehicles that burn petroleum fuels, postponing for another decade any risk that federal regulation would cut ICE production and combustion of fossil fuels.

III. Rescinding the Endangerment Finding: EPA's Climate "Science"

In the face of a broad scientific consensus decades in the making, proving that global warming is a "hoax" is a challenge, but rescinding the EF is part of EPA Administrator Lee Zeldin's assignment. Zeldin warned in March that the revocation proposal was coming, months before the Agency had conducted any scientific review.³⁵ The claimed rationale for withdrawing the EF was released in late July by the U.S. Department of Energy (DOE)³⁶ together with EPA's proposed revocation rule, without any prior disclosure or opportunity for input from independent scientists or the National Academies of Sciences, Engineering, and Medicine.

DOE's "A Critical Review of Impacts of Greenhouse Gas Emissions on the U.S. Climate" (Critical Review, or Review) argues that scientific uncertainties inherent in the predictions underlying the 2009 EF have since been resolved by more recent science supporting a conclusion that CO₂ is not as potent in forcing atmospheric warming as EPA had concluded in 2009. The Review has deep flaws, including failure to consider developments in the science since 2009 that are documented by the National Academy of Sciences.³⁷ Here, I focus on perhaps the most critical of those flaws as a reason why the Critical Review falls outside the scope of "reasoned decision making" required by the Administrative Procedure Act.

DOE fails to even consider the most shocking and terrifying change in climate warming over the past two centuries—the unexpected, sudden, rapid acceleration in global temperature within six years after 2018, to levels not expected for two more decades. Most critically, the alleged "new science" relied upon by DOE totally ignores the role that growing global GHG emissions have played in accelerating the planet's warming to a global average tempera-

ture in 2024 that exceeds 1.5°C above the pre-industrial baseline, the 2015 Paris climate conference's not-to-be-exceeded goal.

A. Climate Science Since the Paris Agreement

World leaders gathered in Paris asked the IPCC to investigate what must be done to avoid triggering the devastating outcomes expected if the planet continued to warm above 1.5°C.

The IPCC's 2018 special report offered decisionmakers two critical conclusions:

1. "To stabilize global temperature at any level, 'net' CO₂ emissions would need to be reduced to zero. This means the amount of CO₂ entering the atmosphere must equal the amount that is removed. Achieving a balance between CO₂ 'sources' and 'sinks' is often referred to as 'net zero' emissions or 'carbon neutrality.'"³⁸
2. To stop the warming "with no or limited overshoot of 1.5°C, global net anthropogenic CO₂ emissions [must] decline by about 45% from 2010 levels by 2030 (40-60% interquartile range), reaching net zero around 2050."³⁹

With the global mean temperature increase standing at 1.0°C in 2017,⁴⁰ and rising about 0.2°C per decade, the IPCC concluded that the 1.5°C rise world leaders sought to avoid would not be reached before the late 2030s, allowing 15-20 years to cut emissions to a level that would slow warming, and ultimately avoid the devastating impacts of climate warming above 1.5°C if global GHG emissions reached "net zero" by 2050.

But national commitments to reduce GHG emissions sufficient to achieve the IPCC's 2030 target were not forthcoming. The United States subsequently gutted President Obama's climate initiatives, with the first Trump Administration declaring that climate change was a hoax, withdrawing the United States from the Paris Agreement, supporting industry's legal challenge to Obama's Clean Power Plan, and revoking EPA's 2017-2025 CO₂ emission standards for new cars and trucks after 2020.⁴¹

New modeling performed for the IPCC's 2021 Sixth Assessment Report (AR6) showed that the 1.5°C increase would likely be reached by 2030 if GHG emissions were held to then-current rates, and 2.0°C rise by 2050.⁴²

35. David Blackmon, *Zeldin's Bombshell Puts EPA Endangerment Finding in the Crosshairs*, FORBES (Mar. 13, 2025), <https://www.forbes.com/sites/davidblackmon/2025/03/13/zeldins-bombshell-puts-epa-endangerment-finding-in-the-crosshairs/>.

36. CLIMATE WORKING GROUP, DOE, A CRITICAL REVIEW OF IMPACTS OF GREENHOUSE GAS EMISSIONS ON THE U.S. CLIMATE (2025) [hereinafter CRITICAL REVIEW].

37. News Release, National Academies of Sciences, Engineering, and Medicine, National Academies Publish New Report Reviewing Evidence for Greenhouse Gas Emissions and U.S. Climate, Health, and Welfare (Sept. 17, 2025), <https://www.nationalacademies.org/news/2025/09/national-academies-publish-new-report-reviewing-evidence-for-greenhouse-gas-emissions-and-u-s-climate-health-and-welfare>.

38. Joeri Rogelj et al., *Mitigation Pathways Compatible With 1.5°C in the Context of Sustainable Development*, in GLOBAL WARMING OF 1.5° C, *supra* note 3, at 161, https://www.ipcc.ch/site/assets/uploads/sites/2/2022/06/SR15_Chapter_2_HR.pdf.

39. IPCC, *Summary for Policymakers*, in GLOBAL WARMING OF 1.5° C, *supra* note 5, at 12.

40. *Id.* fig.SPM.1.

41. The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks, 85 Fed. Reg. 24174 (Apr. 30, 2020).

42. Zeke Hausfather, *Analysis: When Might the World Exceed 1.5C and 2C of Global Warming?*, CARBON BRIEF (Dec. 4, 2020), <https://www.carbon>

Despite warning that the 1.5°C benchmark would likely be exceeded, the IPCC's models continued to offer the hope that “for the very low GHG emissions scenario ([Shared Socio-economic Pathway (SSP)]1-1.9), it is more likely than not that global surface temperature would decline back to below 1.5°C toward the end of the 21st century, with a temporary overshoot of no more than 0.1°C above 1.5°C global warming.”⁴³

Weeks before the IPCC's 2021 report, the World Meteorological Organization (WMO) reported that the global mean temperature increase had reached 1.2°C in 2020, warming 0.2°C in just three years after 2017 instead of the expected decade; and warned that, based on global temperature trends, the 1.5°C target would likely be topped by 2026.⁴⁴ For the United States to contribute to the IPCC's low-emission scenario, the Administration needed to restart CAA rulemakings to adopt CO₂ standards for power plants, cars, and trucks, which together contribute more than half of U.S. GHG emissions.

While EPA launched multiple rulemakings to adopt new standards, warming happened much faster than expected. Six years before 2030 and a quarter-century before 2050, the National Aeronautics and Space Administration (NASA)⁴⁵ and the National Oceanic and Atmospheric Administration in the United States and the WMO⁴⁶ and Copernicus⁴⁷ in Europe all reported that the global temperature rise during 2024 exceeded 1.5°C for the first time. The world had warmed as much in the four years after 2020 as it had during the 20 years ending in 2020. And the more extreme climatic events expected in a 1.5°C world that global leaders in Paris sought to avoid were already happening.

Climate scientists were stunned. Despite the WMO's 2021 warnings that global temperatures were rising faster than predicted,⁴⁸ no one working in climate science expected the not-to-be-exceeded danger threshold set in Paris to be reached so fast. Some who worked on the IPCC reports admitted that the climate sensitivity estimates and aerosol impacts built into the IPCC models do not explain the recent 1.6°C global temperature level, nor can they

reproduce a global temperature jump of 0.4°C in just a few years.⁴⁹

The failure of the models to anticipate the sudden rise of global temperature triggered consternation in the climate research community that “something is wrong.” Gavin Schmidt concluded that no combination of known mechanisms can explain observed global warming.⁵⁰ James Hansen, in his initial analysis of the accelerated warming, concluded that the El Niño accounts for only about half of the 2023-2024 warming, and thus “Schmidt is partially right: something else important is occurring.”⁵¹ Especially terrifying is the prospect that if the current rate of warming continues, earth will be 2.0°C warmer than baseline soon after 2030. Humanity does not have a quarter-century to avoid the impacts of a 2.0°C warmer world.

Climate science makes clear that raising the global temperature more than 2.0°C above the pre-industrial background will create a horrific world increasingly inhospitable to human civilization. The IPCC's AR6 Working Group II report provides a summary of the devastating impacts that continued climate warming will have on global systems, sea-level rise, forests, food production, the marine environment, and the survival of species.⁵²

The International Cryosphere Climate Initiative's 2024 State of the Cryosphere report⁵³ warns that ice melt from current emissions will add one to two meters of sea-level rise this century, but that even if global temperature is stabilized at 1.5°C, seas will continue to rise toward 15 meters at slower rates.⁵⁴ Rising seas will inundate large coastal areas, periodically flood other areas, and contribute to salinization of groundwater and destruction of infrastructure.⁵⁵

CO₂ and methane emissions from melting permafrost will continue into the future under all emission scenarios.⁵⁶ These emissions are irreversible, with annual rates this century approaching or exceeding anthropogenic emissions from the European Union (EU), foreclosing the possibility of achieving “net zero” emissions even if anthropogenic emissions are reduced to “net zero.” To stabilize the climate, future generations will incur extraordinary costs to offset these emissions by extracting GHGs from the atmo-

brief.org/analysis-when-might-the-world-exceed-1-5c-and-2c-of-global-warming/; IPCC, *Summary for Policymakers*, in CLIMATE CHANGE 2021: THE PHYSICAL SCIENCE BASIS 3, §B.1.2 (Valérie Masson-Delmotte et al. eds., IPCC 2021), https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM_final.pdf.

43. IPCC, *supra* note 42.

44. Press Release, WMO, New Climate Predictions Increase Likelihood of Temporarily Reaching 1.5°C in Next 5 Years (May 27, 2021), <https://wmo.int/news/media-centre/new-climate-predictions-increase-likelihood-of-temporarily-reaching-1-5-degc-next-5-years>.

45. News Release, NASA, Temperatures Rising: NASA Confirms 2024 Warmest Year on Record (Jan. 10, 2025), <https://www.nasa.gov/news-release/temperatures-rising-nasa-confirms-2024-warmest-year-on-record/>.

46. WMO, STATE OF THE GLOBAL CLIMATE 2024 (2025), https://library.wmo.int/viewer/69455/download?file=WMO-1368-2025_en.pdf&type=pdf&navigator=1.

47. 2024 Was the Warmest Year on Record, Copernicus Data Show, ECMWF (Jan. 10, 2025), <https://www.ecmwf.int/en/about/media-centre/news/2025/2024-was-warmest-year-record-copernicus-d/ata-show>.

48. Press Release, WMO, *supra* note 44.

49. Aayushi Gour, 2024 Poised to Become the Hottest Year Ever, Warn EU Scientists, CLIMATE FACT CHECKS (Dec. 9, 2024), <https://climatefactchecks.org/2024-poised-to-become-the-hottest-year-ever-warn-eu-scientists/>.

50. Gavin Schmidt, *Why 2023's Heat Anomaly Is Worrying Scientists*, 627 NATURE 467 (2024).

51. James E. Hansen et al., *Global Warming Has Accelerated: Are the United Nations and the Public Well-Informed?*, 67 ENV'T. SCI. & POL'Y FOR SUSTAINABLE DEV. 6, 23 (2025), <https://doi.org/10.1080/00139157.2025.2434494>.

52. IPCC, CLIMATE CHANGE 2022: IMPACTS, ADAPTATION, AND VULNERABILITY (H.-O. Pörtner et al. eds., 2022), https://www.ipcc.ch/report/ar6/wg2/downloads/report/IPCC_AR6_WGII_FullReport.pdf.

53. INTERNATIONAL CRYOSPHERE CLIMATE INITIATIVE, STATE OF THE CRYOSPHERE 2024: LOST ICE, GLOBAL DAMAGE 1-5 (2024), https://drive.google.com/file/d/1CaM_sTK-lrdzlcJxA2ZBxsqkLuu9mSF/view.

Id. at 2.

55. IPCC, *supra* note 52, §4.3.

56. IPCC, *Summary for Policymakers*, in IPCC SPECIAL REPORT ON THE OCEAN AND CRYOSPHERE IN A CHANGING CLIMATE 3, §B.1.4 (H.-O. Pörtner et al. eds., Cambridge Univ. Press 2019) (“The RCP8.5 scenario leads to the cumulative release of tens to hundreds of billions of tons (GtC) of permafrost carbon as CO₂ and methane to the atmosphere by 2100 with the potential to exacerbate climate change (*medium confidence*).”).

sphere to prevent the deadly heat levels associated with a 3.0° or 4.0°C warmer planet.

B. How Does EPA Justify Deregulating CO₂?

Given a planet that is warming far faster than the climate science expected just a few years ago, how does EPA now justify its proposal to revoke the EF and CO₂ emission standards?

DOE's Critical Review does not question the fundamental premise that warming will continue until GHG emissions achieve "net zero." In fact, the Review acknowledges the central focus of climate science for the past half-century: "the magnitude of the climate's response to increasing concentrations of CO₂ is central to the scientific debate on anthropogenic climate change, and so also to the public debate on 'climate action.'"⁵⁷ But instead of exploring the implications that the planet's accelerated recent warming has on how to assess the climate response to increasing CO₂, the Critical Review ignores the implications that accelerated warming has for estimating the climate response to CO₂.

The Critical Review unavoidably discusses factors relevant to estimating the climate sensitivity to CO₂, first by rejecting reliance on the IPCC's global climate models as a reliable source, and instead claiming to place greatest reliance on data-driven estimates.⁵⁸ Of the various data analyses that it reviews, however, most were published before 2020, and the more recent cites do not consider the more rapid warming reported by the IPCC and WMO since 2021. Despite claiming to be an analysis of "new data" since 2009, the Review limits its analysis primarily to older pre-2020 data. The Critical Review concludes that the IPCC's estimate that the climate will warm 3.0°C with a doubling of CO₂ is too high because it fails to properly account for uncertainties in the reliability of the pre-2020 data.⁵⁹

Of all the uncertainties in the climate data relevant to estimating the impact of CO₂ on the planet, the most critical is the failure of prior data analyses to provide an estimate of climate sensitivity that even comes close to explaining the recurring annual spikes in global temperature since 2020. Climate analysts such as Hansen, Schmidt, and others also published papers rejecting the IPCC's estimates of climate sensitivity, but because they were too low to explain the recent spikes in global temperature.⁶⁰

Hansen argues that the recent acceleration in warming occurred because sulfates in the atmosphere were reduced after 2020 as a result of new low-sulfur standards for bunker fuels used to power the global fleet of container ships. Tiny sulfate particles are effective mirrors that reduce warming by increasing earth's albedo (i.e., by reflecting solar radiation back out of the atmosphere). Hansen contends that the sudden warming that occurred after 2020 demonstrates that warming caused by CO₂ has been

underestimated because the effect of aerosols reflecting solar radiation back out into space was underestimated in the climate models. The now lower atmospheric loadings of aerosols more closely reflect the pre-industrial state of the atmosphere when the climate effect of CO₂ was not masked by aerosols emitted from anthropogenic industrial activities.

DOE's Critical Review acknowledges that the recent decrease in earth's albedo explains the temperature spikes: "Arguably the most striking change in the Earth's climate system during the 21st century is a significant reduction in planetary albedo since 2015, which has coincided with at least two years of record global warmth."⁶¹ "[T]he most likely explanation for the sharp albedo decline [are] changes in atmospheric aerosols and/or clouds."⁶²

After a review of data analyses, the Review acknowledges that both reduced aerosols *and* cloud cover are contributing to earth's recent uptake of solar radiation. "Sulfate particles reflect solar radiation, so cleaner air means less solar radiation is reflected, which contributes to surface warming."⁶³ "Changes in clouds are the primary candidate to explain the decline in global albedo since 2015."⁶⁴ "[T]he decline in planetary albedo and the concurrent decline in cloudiness have emphasized the importance of clouds and their variations to global climate variability and change."⁶⁵

The Review acknowledges that the decline in cloud cover could be an effect of atmospheric warming, although it recites multiple potential explanations. In conclusion, the Review does not reject warming caused by GHGs as a plausible explanation for reduced cloud cover, but instead emphasizes the uncertainty:

[T]he competing explanations for the cause of the declining cloud cover have substantial implications for assessing the Equilibrium Climate Sensitivity and for the attribution of the recent warming. An additional 10 years of data should help clarify whether this is a strong positive cloud feedback *associated with warming* or a temporary fluctuation driven by natural variability.⁶⁶

At bottom, the Review acknowledges that aerosols and reduced cloud cover have increased warming by allowing more solar radiation to remain in the atmosphere, but does not answer two questions: (1) what are the implications for climate sensitivity to CO₂ when reduced albedo stops masking the effect of CO₂? and (2) why did the IPCC's climate models so seriously underestimate the warming expected from current atmospheric loadings of GHGs? Clearly, the models did not anticipate the reduction in global albedo from reduced sulfates and cloud cover. But if they had, the implication is that the climate's sensitivity to CO₂ is greater, not less, than assumed by the IPCC.

57. CRITICAL REVIEW, *supra* note 36, §4.1, at 25.

58. *Id.* §4.

59. *Id.*

60. Hansen et al., *supra* note 51.

61. CRITICAL REVIEW, *supra* note 36, at 90.

62. *Id.* at 91.

63. *Id.*

64. *Id.*

65. *Id.* at 92.

66. *Id.* (emphasis added).

The failure of the Critical Review to address these questions that are central to the investigations being undertaken by other climate science researchers demonstrates that the Review selectively excluded consideration of conclusions that contradict the predetermined conclusion EPA needs in order to sustain the proposed revocation of the EF. The Review's failure to discuss how its conclusion that CO₂ is a less important contributor to warming is consistent with the recent temperature data challenges the credibility of its conclusion. If CO₂ is not a potent climate forcer, what else quantifies the critical reality that everyone on the planet is experiencing—that the earth is getting hotter fast, making the climate more violent and deadly?

IV. Revoking CO₂ Vehicle Emission Standards

Clearly, EPA's proposed revocation of the EF and CO₂ vehicle emission standards is not based on a credible legitimate reassessment of the climate science. Nor can the proposed rescissions rest on other commonly proffered policy justifications: (1) that the Biden rules would deprive new car buyers of the freedom to buy an ICE vehicle, and (2) that ICE vehicles save consumers money.

The Biden EPA acknowledged that the national CO₂ emission standards for model years 2027-2032 were expected, when combined with state adoption of the California Clean Cars standards, to gradually push national production of zero emission cars to about 67% of new car sales by 2035.⁶⁷ EPA estimated that its CO₂ standards for HDVs would achieve about 30% market share for zero emission trucks by 2035. EPA's rules do not ban the production or sale of ICE vehicles as part of a manufacturer's product mix, and would not preclude new car buyers from purchasing a new polluting vehicle.

The contention that EPA's rules would eliminate ICE sales and deprive drivers of a choice is a fabrication. The standards were actually designed to encourage manufacturers to develop the supply chains for batteries and component parts that were needed for mass production of new ZEVs that would make ZEVs less expensive to own and operate than ICE vehicles.

Cost is also not a valid basis for pulling the plug on the CO₂ standards. In the 2024 rulemaking, EPA concluded "consumers will likely pay higher up-front costs for the vehicles, but they are expected to recover those costs through reduced fuel, maintenance, and repair costs, as well as due to the IRA tax incentives for PEV [plug-in electric vehicle] purchase and battery manufacturing leading to reduced up-front costs for BEVs [battery electric vehicles]."⁶⁸ EPA cited analyses from Kelley Blue Book and Bloomberg showing that the purchase price for some small EVs was already below the cost of a comparable ICE

vehicle when the then-existing federal tax credit (\$7,500) was deducted from the sticker price, and that the total cost of ownership was less for large EVs, including electric SUVs, when the lower costs of energy and maintenance were included in the analysis.⁶⁹

A. What Is the Harm to the Climate?

EPA's proposed rule does not report either the increased emissions of CO₂ that will be allowed by revoking the emission standards for CO₂, or the likely impacts those increased emissions will have on heating the atmosphere and the oceans, or on other impacts such as the destructive power of hurricanes, tornadoes, wind storms, and floods. EPA claims that because those impacts are remote from the emission of GHGs, and the contribution of CO₂ from U.S. vehicles is only 2.5% of global CO₂, it is too speculative to attribute adverse impacts on health and welfare to new vehicles sold in the United States.⁷⁰

Previously, EPA had attributed harm equally to every ton of CO₂ added to the atmosphere, without regard to whether it was emitted from a coal plant in India or a diesel truck in Los Angeles. Based on that premise, EPA estimated that CO₂ emitted from the U.S. transportation sector caused \$340/ton in loss and damage, and will cause \$380/ton in 2030, totaling more than \$1.5 trillion annually.⁷¹

Since the proposal assiduously ignores any effort to quantify impacts, the public is left to estimate the climate impacts of repealing the standards. CO₂ emissions from the U.S. transportation sector rose 18.7% since 1990, except during COVID.⁷² One clear outcome is that without emission standards to provide a common target for all automakers, CO₂ emitted from the transportation sector can be expected to continue to rise for more than another decade, possibly until 2050.

The growth in transportation CO₂ emissions has offset reductions achieved by phasing out coal from electric power generation. The "net zero" economy needed to stop the warming cannot be achieved without standards designed to transition the transportation sector to zero emission technologies. Those technologies are mature and available. This is fundamentally a transition challenge, but now EPA claims the CAA provides no authority to orchestrate that transition.

The fundamental driver behind increasing on-road emissions is growth in VMT. National VMT grew from 1.13 trillion miles in 1971 to 3.28 trillion miles in 2020, averag-

67. 89 Fed. Reg. at 28057 tbl.75.

68. U.S. EPA, MULTI-POLLUTANT EMISSIONS STANDARDS FOR MODEL YEARS 2027 AND LATER LIGHT-DUTY AND MEDIUM-DUTY VEHICLES—REGULATORY IMPACT ANALYSIS 4-85 (2024) (EPA-420-R-24-004), <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1019VPM.pdf>.

69. 89 Fed. Reg. at 27991, cols. 2-3.

70. 90 Fed. Reg. at 36310.

71. U.S. EPA, REPORT ON THE SOCIAL COST OF GREENHOUSE GASES: ESTIMATE INCORPORATING RECENT SCIENTIFIC ADVANCES tbl.ES-1 (2022), https://www.epa.gov/system/files/documents/2022-11/epa_scghg_report_draft_0.pdf (EPA external review draft). See Jarmo S. Kikstra et al., *The Social Cost of Carbon Dioxide Under Climate-Economy Feedbacks and Temperature Variability*, 16 ENV'T RSCH. LETTERS 094037 (2021).

72. OFFICE OF TRANSPORTATION AND AIR QUALITY, U.S. EPA, FAST FACTS: U.S. TRANSPORTATION SECTOR GREENHOUSE GAS EMISSIONS, 1990-2022 (2024) (EPA-420-F-24-022), <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P101AKR0.pdf> [hereinafter FAST FACTS].

ing 38% per decade over the half-century.⁷³ VMT increases as population, households, and employment grow.

Growth in the national vehicle fleet is a useful shorthand for estimating both VMT growth and emission trends. The United States had 90 million vehicles when the CAA was first enacted in 1970,⁷⁴ about 190 million vehicles when the Act was amended in 1990, and now has reached 285 million vehicles.⁷⁵ The total fleet is expected to reach ≈320 million by 2036.

Of that total, 176 million LDVs will be sold⁷⁶ between 2026 and 2036 and about 5 million will be HDVs,⁷⁷ assuming that current sales (15.9 million LDVs, and 457,000 HDVs in 2024) will continue through the decade. If industry litigation succeeds in blocking CO₂ standards until 2039, another 48 million new vehicles will be added to the fleet, exceeding 225 million.

By repealing the CO₂ standards, CO₂ emissions will increase between now and 2036 when new standards might take effect. The difference between the 2024 suite of standards with limits on CO₂ and EPA's proposed repeal of CO₂ standards is the number of polluting new vehicles added to the national fleet instead of ZEVs.

In 2024, 8.7% of new LDVs were ZEVs,⁷⁸ with 1,300 zero emission trucks and buses. EPA estimated that to meet the fleetwide CO₂ standards applicable to new LDV sales during the 2027-2032 model years, manufacturers would achieve 51% ZEV penetration by 2030, and 68% by 2032.⁷⁹ Under the 2024 regulatory regime, about 8 million new LDVs would be ZEVs by 2030,⁸⁰ and by 2032 and beyond, ≈10.88 million units/year. The result would be to add 92 million ZEVs and about 84 million new polluting vehicles to the national fleet over the decade.⁸¹ As existing polluting vehicles are replaced with ZEVs, ICE vehicles as a share of the national fleet would decline to about 210 million by 2036.

EPA estimated that ZEV sales without the CO₂ standards would approach one-third of total sales by 2035, but that estimate assumed the tax credits for new and

used ZEV purchases and home charging stations in the IRA would remain available to consumers, and the investment credits for manufacturers to develop domestic supply chains and battery plants would help reduce the list price of new vehicles. Those cost-reduction incentives and investment credits have now been repealed as part of the One Big Beautiful Bill Act.⁸²

In addition, the regulatory pressure from California's Advanced Clean Cars II and Advanced Clean Trucks II standards to produce ZEVs has been eliminated by federal preemption. With EPA's proposal to rescind the federal CO₂ standards, virtually all regulatory pressure for manufacturers to invest in the development of new supply chains to obtain the parts and materials needed to produce zero emission technologies will be eliminated.

Repeal of the CO₂ standards will allow any manufacturer not making ZEVs today, such as Toyota and Honda, to not invest in zero emission technologies. Manufacturers already invested in producing ZEVs are not likely to abandon their sunk investments, but many have stopped incurring the additional costs needed to develop battery production and expand their ZEV product lines.

If federal CO₂ standards are rescinded in addition to congressional preemption of the California Clean Cars standards, manufacturers will no longer have any regulatory pressure to market ZEVs. With the repeal of IRA tax credits that created an incentive for consumers to buy ZEVs,⁸³ and without the buildout of EV charging networks funded by the IRA to allay public "range anxiety," ZEV sales are not expected to grow much beyond current demand. With tariffs designed to interdict the import of vehicles assembled in Canada, Mexico, or Asia, less-expensive ZEVs will be excluded from the American market.

EPA could approximate the ZEV market share needed to meet the CO₂ standards, but absent state or federal CO₂ standards or the economic incentives in place when EPA adopted its 2024 standards, we are left to estimate the ZEV sales. In response to hostile Administration policies, ZEV sales might at best increase from current levels to 10% of the LDV market.

If sales do average 10% of the LDV market over the next 11 model years, then of the 176 million units estimated to be produced by 2036, only 17.6 million ZEVs would be sold compared to the 92 million ZEV units EPA estimates would be sold to meet the CO₂ standards, while 158 million new ICE LDVs would be sold instead of 84 million.⁸⁴

Without the standards, most new HDVs added to the national fleet before 2036 will be diesel. EPA expected that:

73. DOE Alternative Fuels Data Center, *Annual Vehicle Miles Traveled in the United States*, <https://afdc.energy.gov/data/10315> (last updated Oct. 2024).

74. PROGRESS IN THE PREVENTION AND CONTROL OF AIR POLLUTION: FIRST REPORT OF THE SECRETARY OF HEALTH, EDUCATION, AND WELFARE TO CONGRESS (1968); Legislative History of the Clean Air Act Amendments of 1970, S. REP. NO. 93-18, at 1417 (1974).

75. Statista, *Number of Motor Vehicles Registered in the United States From 1990 to 2023 (in 1,000s)*, <https://www.statista.com/statistics/183505/number-of-vehicles-in-the-united-states-since-1990/> (last visited Oct. 14, 2025).

76. EPA estimates that annual LDV sales will remain between 15.9 million and 16 million units, with or without the standards. U.S. EPA, *supra* note 68, at 4-63 tbl.4-27.

77. *Id.* at 2-40 tbl.2-19.

78. Sean Tucker, *America Set EV Sales Record in 2024*, KELLEY BLUE BOOK (Jan. 14, 2025), <https://www.kbb.com/car-news/america-set-ev-sales-record-in-2024/?msocid=3550dcd4803f6a9c25f4d30381976ba2> ("EVs made up 8.7% of all new cars sold in 2024.").

79. 89 Fed. Reg. at 28057 tbl.75.

80. For the 2024 rulemaking, EPA estimated that without the 2024 standards, 26% of LDV (car and truck) sales would be ZEVs in 2027, ramping up to 35% by 2032. U.S. EPA, *supra* note 68, at 12-32 tbl.12-57.

81. LDV ZEV market share based on penetration rates estimated by EPA in Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, 89 Fed. Reg. 27842, 28057 tbl.75 (Apr. 18, 2024) (assuming 16 LDV units sold annually from 2026-2036).

82. H.R. 1, Pub. L. No. 119-21, 139 Stat. 72 (2025).

83. IRS, *Clean Vehicle Tax Credits*, <https://www.irs.gov/clean-vehicle-tax-credits> (last updated Oct. 23, 2025) ("Update: The New Clean Vehicle Credit, Previously-Owned Clean Vehicle Credit, and Qualified Commercial Clean Vehicle Credit are not available for vehicles acquired after Sept. 30, 2025.").

84. See *supra* note 81.

The portion of the overall HD sales in MY [model year] 2027 that are ZEVs included in the reference case is 7 percent, compared to 11 percent of sales being ZEVs across the nation due to the final rule under our modeled potential compliance pathway, as shown in Table II-31. Similarly, in the MY 2032 reference case, 20 percent of the HD sales are projected to be ZEVs, versus 45 percent ZEVs in the HD national fleet with the potential compliance pathway modeled for the final rule, respectively.⁸⁵

But again, the estimated baseline penetration without standards assumed that the IRA tax credits for ZEV trucks and state adoption of the Advanced Clean Trucks standards would increase demand above the 7% of sales expected in 2027. Without the regulatory pressure on manufacturers and fleet operator tax incentives, HDV ZEV sales may not exceed 10% by 2036.

When total fleet growth and vehicle replacement rates are accounted for,⁸⁶ revoking the CO₂ standards along with financial incentives will substantially increase ICE vehicles in the national fleet. Assuming 10% annual ZEV sales for both LDV and HDVs, the ICE share will grow from 270 million today to about 290 million by 2036, adding to demand for petroleum fuels and CO₂ emissions. In addition, growing the ICE share of the fleet will make it impossible to replace all those vehicles with ZEVs between 2036 and 2050. The opportunity to transition to a zero emission on-road transportation sector will have been lost.

EPA reports that total CO₂ emitted from on-road vehicles was just shy of 1,500 million metric tons (MT) (1.5 billion MT, or 1.5 gigatons (GT)) in 2022.⁸⁷ For comparison, CO₂ emitted annually from cars and trucks in the United States exceeds the total national annual CO₂ emitted from all source sectors of every other country on earth except for China, India, and Russia.⁸⁸ If current CO₂ standards are revoked, CO₂ emissions from on-road vehicles will likely continue to grow annually for at least the next decade. Through 2036, vehicle CO₂ would total 16.5 GT. If the oil industry successfully blocks new standards to accelerate the transition to ZEVs beyond 2036, current or higher aggregate CO₂ emissions from on-road vehicles will be locked in through 2050, totaling nearly 40 GT between

now and 2050. This compares with total global CO₂ emissions in 2024 of 37.4 GT.⁸⁹

Using a social cost of \$380/ton of CO₂, the adverse impacts on the U.S. economy will be at least \$15.2 trillion, half of the current national debt, between now and 2050.⁹⁰ Maintaining or growing CO₂ emissions over the coming decades will contribute to the dramatic acceleration of warming seen in the global temperature record since 2020, when the global mean temperature increased from 1.2°C (2020) to 1.5°C (2024). The severity, duration, and frequency of massive floods, devastating wildfires, destructive tornadoes and wind storms, and extreme droughts will increase now that we have crossed the threshold into a 1.5°C climate. Annually, hotter years appear to be the new norm unless planetary emissions decline rapidly.

Given the large fraction that the transportation sector contributes to total GHG emissions from both the United States and worldwide, adding more emissions from the U.S. transportation sector each year at current or higher levels will be a significant factor in accelerating the warming, rather than transitioning to zero emissions to stop the warming. Yet, despite the likely devastating impacts of these emissions, EPA refuses to even acknowledge that harm will be the consequence of this action.

B. What Is the Harm to Urban Air Quality and Public Health?

The American Lung Association reports that during 2023, 156 million Americans lived in polluted urban airsheds where NAAQS for ozone and/or PM_{2.5} were violated.⁹¹ Air quality worsened significantly from 2022, with 22 million more Americans living in unhealthy air than the year before. The number of cities with clean air dropped from 55 out of 220 in 2022 to only 22 in 2023. American families in 90% of U.S. urban airsheds are giving birth and raising children in unhealthy air that increases their risk of delivering low-birthweight babies or developing asthma before age 5.⁹² This will impose a lifetime of impaired respiratory function and medical costs, stunting normal lung development and increasing the likelihood of dying prematurely from cardiovascular diseases, chronic obstructive pulmonary disease, or cancer.

If finalized, EPA's revocation of standards for CO₂ will increase ozone and PM_{2.5} emissions from the future vehicle fleet, and worsen the impacts on public health. EPA's proposed rule hides these impacts by declaring "we are . . . not proposing to reopen any criteria pollutant and air

85. HDV Standards, *supra* note 14, at 29567.

86. David L. Greene & Benjamin Leard, *Trends in Scrappage and Survival of U.S. Light-Duty Vehicles*, 180 TRANSP. RSCH. PT. A: POL'Y & PRAC. 103982 (2024), <https://www.sciencedirect.com/science/article/abs/pii/S0965856424000302?via%3Dihub> ("By 2020, median expected lifetimes ranged from about 17 years for passenger cars to 20 years for SUVs and vans, and 25 years for pickup trucks.").

87. See FAST FACTS, *supra* note 72. The GHG inventory report for 2023 was due in summer 2025 as part of the U.S. obligation to report under the United Nations Climate Convention, but has not been published. Transportation-sector emissions are direct emissions from vehicle engines, and do not include GHG emissions from the petroleum fuel cycle, which includes methane emitted during drilling, refining, storage, and transport of fuels, and CO₂ from drill rigs, flaring, and refining activities. These production and process emissions, reported by EPA within the industrial sector, will also be cut when petroleum fuels are no longer burned in ICE vehicles.

88. Wikipedia, *List of Countries by Carbon Dioxide Emissions*, https://en.wikipedia.org/wiki/List_of_countries_by_carbon_dioxide_emissions (last edited Oct. 20, 2025).

89. INTERNATIONAL ENERGY AGENCY, GLOBAL ENERGY REVIEW 2025 (2025), <https://iea.blob.core.windows.net/assets/5b169aa1-bc88-4c96-b828-aaa50406ba80/GlobalEnergyReview2025.pdf>.

90. Kikstra et al., *supra* note 71. Note that social costs of carbon estimates do not include losses from wildfires because no model has been developed to reliably estimate the frequency, scope, and severity of wildfire events.

91. AMERICAN LUNG ASSOCIATION, STATE OF THE AIR 2025 REPORT (2025), <https://www.lung.org/getmedia/5d8035e5-4e86-4205-b408-865550860783/State-of-the-Air-2025.pdf>.

92. *Id.* at 25.

toxics standards for highway light-, medium-, and heavy-duty vehicles and engines under CAA section 202(a).⁹³ Revoking the CO₂ standards does not weaken the NO_x or PM standards for new polluting cars and trucks, but EPA ignores the fact that without the CO₂ standards over the coming decade manufacturers will likely produce and sell about 74 million more polluting vehicles instead of ZEVs that emit zero NO_x and zero PM. EPA's proposal does not acknowledge or attempt to quantify the increased NO_x and PM emissions that would be allowed if the CO₂ standards are rescinded, and the impact that those increased emissions will have on air quality and Americans' health.

As EPA highlights in its proposal to rescind emission standards for CO₂, the CAA requires a finding that regulation of a pollutant emitted by motor vehicles is needed to protect public health and welfare. EPA proposes to rescind the finding that the emission of GHGs does not meet this standard, but the proposal does not question that ozone and PM_{2.5} subject to NAAQS, or toxic air pollutants listed pursuant to §112, qualify as pollutants for which there is a need to regulate emissions from on-road vehicles. This section highlights evidence showing that the need to control NO_x as a precursor for ozone and PM_{2.5} remains strong, and that the standards for CO₂ in fact achieve significant NO_x reductions over and above the standards denominated as NO_x standards, as well as additional PM_{2.5} reductions beyond those required by standards applicable to ICE vehicles.

1. Public Health Urgency

Without effective action to achieve the emission reductions needed for attainment of NAAQS for both ozone and PM_{2.5}, at-risk groups will suffer harm to their health. EPA's review of NAAQS for ozone and PM have identified groups especially at risk from vehicle pollution, including:

- Babies and children, whose bodies are rapidly developing;
- Pregnant women who risk increased premature birth and low-weight births when exposed to vehicle pollution;
- Children who develop asthma;
- Children and adults with asthma who suffer asthma attacks;
- People with existing respiratory diseases, including chronic obstructive pulmonary disease (COPD), respiratory syncytial virus (RSV), COVID-related breathing limitations, long COVID, and people with active COVID or respiratory infections;

- People with lung cancer or other chronic diseases, including other cancers;
- People with or at risk for cardiovascular disease; and
- Elders (over age 65) with diminished immune function who risk infections such as pneumonia and premature death with exposure to air pollution.⁹⁴

By rescinding the regulatory CO₂ emission targets that require auto and truck manufacturers to design and produce zero emission trucks, buses, sedans, and pickups, EPA would abandon the public health benefits achieved by replacing polluting ICE vehicles with ZEVs. EPA's failure to quantify and disclose the increase in emissions of criteria pollutants and toxic air pollutants that would result from rescinding the CO₂ standards, and to evaluate the climate and public health harm that would follow from eliminating the regulatory requirements that create pressure for manufacturers to increase production of zero emission technologies, violates the Agency's obligation to inform the decisionmaker, the public, and at-risk populations of the adverse health impacts of its proposal.

2. Ozone Pollution Is Rapidly Worsening

The American Lung Association's 2025 report, *State of the Air*, documented that violations of air quality standards for ozone have worsened since the COVID-19 pandemic, with both more extreme peak concentrations and more frequent violation days.⁹⁵ NO_x emissions are the primary precursor contributing to the formation of ground-level ozone (smog). In most metropolitan areas, coal is no longer burned to generate electricity. Mobile sources are the largest source of NO_x. EPA reports that in 2023, on-road vehicles continued to rank nationally as the largest source of NO_x.⁹⁶ Despite large reductions in NO_x emissions from on-road vehicles since 2015, the worsening violations of ozone NAAQS reported by the American Lung Association makes clear that current NO_x standards are not sufficient to solve the urban ozone problem.

Additional NO_x reductions are needed for many urbanized areas to attain NAAQS for ozone. NO_x from on-road vehicles interacts with volatile organic compounds (VOCs)

94. EPA summarized the health impacts of exposure to ozone and PM_{2.5} and identified the primary source for evidence of each adverse health effect in U.S. EPA, TECHNICAL SUPPORT DOCUMENT: ESTIMATING THE BENEFIT PER TON OF REDUCING DIRECTLY-EMITTED PM_{2.5}, PM_{2.5} PRECURSORS AND OZONE PRECURSORS FROM 21 SECTORS 16 tbl.5 (2023), <https://www.epa.gov/benmap/estimating-benefit-ton-reducing-directly-emitted-pm25-pm25-precursors-and-ozone-precursors>. The data were used to estimate the health benefits of the reductions in non-GHG pollutants achieved by compliance with the CO₂ standards for HDVs. See HDV Standards, *supra* note 14, at 29710-11.

95. AMERICAN LUNG ASSOCIATION, *supra* note 91.

96. U.S. EPA, National Emissions Inventory: National Tier 1 CAPS Trends, https://www.epa.gov/system/files/other-files/2025-04/national_tier1_caps_21feb2025.xlsx. On-road vehicles are the largest source of NO_x, accounting for 48% nationwide. In most cities, tailpipes emit 70% to 80% of locally emitted NO_x and are the primary contributor to ozone concentrations that violate NAAQS in more than 230 urban counties.

93. 90 Fed. Reg. at 36298.

in the atmosphere using energy from sunlight to form ground-level ozone, or smog, a lung irritant, asthma attack trigger, and contributor to respiratory and cardiovascular disease. Vehicle emissions are a major contributor to urban smog in the 230 urban counties where pollution concentrations violate NAAQS.

During Trump's first term, EPA proposed to tighten NO_x standards for trucks to reduce the contribution that tailpipe NO_x plays in causing ozone pollution:

NO_x is a criteria pollutant, as well as a precursor to ozone and PM_{2.5}, and as such NO_x emissions contribute to ambient pollution that adversely affects human health (including vulnerable populations and lifestyles, which are relevant to both children's health and environmental justice issues) and the environment. EPA has set primary and secondary NAAQS for each of these pollutants designed to protect public health and welfare. As of September 30, 2019, more than 128 million people lived in counties designated nonattainment for the ozone or PM_{2.5} NAAQS, and additional people live in areas with a risk of exceeding those NAAQS in the future.

Reductions in NO_x emissions will help areas attain and maintain the ozone and PM_{2.5} NAAQS and help prevent future nonattainment. Reducing NO_x emissions will result in improved health outcomes attributable to lower ozone and particulate matter concentrations in communities across the United States. . . . [H]eavy-duty diesel NO_x emissions are contributing to substantial concentrations of ozone and PM_{2.5} across the U.S.⁹⁷

Focused on reducing NO_x as a strategy for controlling ozone and PM pollution, EPA emphasized that “[s]ince battery-electric and hydrogen fuel cell vehicles do not have ICEs, they have zero tailpipe emissions of NO_x.”⁹⁸ When EPA adopted final standards to control NO_x from future HDVs,⁹⁹ the Agency estimated that the NO_x emission standards would reduce 48% of the baseline NO_x by 2045, allowing ICE HDVs to emit 492,000 tons.¹⁰⁰ EPA estimated that in 2035, the standards would still allow about 611,000 tons of NO_x from HDVs.¹⁰¹

For the NO_x rulemaking, EPA modeled the impact that HDV NO_x emissions expected in 2045 would have on ozone attainment, showing that some urban counties in the New York/New Jersey/Connecticut metropolitan area and South Coast Air Quality Management District in California would remain in nonattainment, and that

other areas would only marginally attain NAAQS.¹⁰² But EPA did not model the impact that higher NO_x emissions expected in 2035 would have on attainment in severe and extreme ozone nonattainment areas with statutory attainment deadlines in 2031 and 2037.

Nor did EPA's modeling analysis attempt to account for the additional ozone concentrations expected from a warming climate. More harmful ozone levels were predicted by EPA as one of the adverse health impacts caused by warming in its 2009 EF:

Increases in regional ozone pollution relative to ozone levels without climate change are expected due to higher temperatures and weaker circulation in the United States relative to air quality levels without climate change. Climate change is expected to increase regional ozone pollution, with associated risks in respiratory illnesses and premature death.¹⁰³

The National Academies' recent report on climate and health concluded that investigations published since 2009 affirmed EPA's 2009 EF, and demonstrate that “[c]limate change contributes to increases in ozone exposure on both short-term and long-term exposure scales.”¹⁰⁴ The report warns that to avoid these harmful increases in ozone exposure, “additional emission reductions of ozone precursors” will be required.¹⁰⁵

The dramatic increases in ozone concentrations and the frequency of days exceeding NAAQS documented in the American Lung Association report confirm EPA's 2009 prediction despite large decreases in vehicle and industrial NO_x emissions since 2015 to 2024.¹⁰⁶ Urban ozone pollution since the COVID-19 pandemic has spiked higher as summers have become hotter and the summer heat season has expanded. This trend will be exacerbated if EPA allows increased tailpipe NO_x emissions by rescinding the standards that require manufacturers to sell more zero emission than polluting vehicles.

California's experience demonstrates that replacing ICE vehicles with ZEVs does actually offset the impact of a warming climate. While air quality was deteriorating in most of the nation after the pandemic, ozone air quality in California was improving. As Table 1 shows, ozone violation days during the three-year ozone NAAQS compliance period after the pandemic dropped significantly across the state compared to the pre-2020 compliance period.

97. Control of Air Pollution From New Motor Vehicles: Heavy-Duty Engine Standards, 85 Fed. Reg. 3306, 3309, 3310 (advanced notice of proposed rulemaking Jan. 21, 2020) (footnote omitted).

98. *Id.* at 3319.

99. Control of Air Pollution From New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards, 88 Fed. Reg. 4296 (Jan. 24, 2023).

100. See U.S. EPA, CONTROL OF AIR POLLUTION FROM NEW MOTOR VEHICLES: HEAVY-DUTY ENGINE AND VEHICLE STANDARDS—REGULATORY IMPACT ANALYSIS 272 fig.5-23 & 273 tbl.5-29 (2022) (EPA-420-22-035), <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1016A9N.pdf>.

101. *Id.*

102. OFFICE OF TRANSPORTATION AND AIR QUALITY, U.S. EPA, AIR QUALITY MODELING FOR THE HD 2027 PROPOSAL: DRAFT TECHNICAL SUPPORT DOCUMENT (2022) (EPA-420-D-22-002).

103. 2009 EF, *supra* note 22, at 66525.

104. National Academies of Sciences, Engineering, and Medicine, *Impacts on Human Health, in EFFECTS OF HUMAN-CAUSED GREENHOUSE GAS EMISSIONS ON U.S. CLIMATE, HEALTH, AND WELFARE* 40, 45 (2025), <https://nap.nationalacademies.org/read/29239/chapter/7>.

105. *Id.*

106. U.S. EPA, National Emissions Inventory, *supra* note 96. Total NO_x emissions declined 38% led by transportation, which declined 50%.

Table 1. California Ozone Nonattainment Area Total Exceedance Days (8-hour average $\leq$ 71 ppb) During the Three-Year Compliance Periods Before and After the 2020 COVID-19 Pandemic Year

	(2017-2019)	(2021-2023)	Change (days)
Sacramento	118	86	-32
San Diego	93	82	-11
San Joaquin Valley	329	276	-53
South Coast	412	371	-41
Ventura County	41	32	-9
W. Mojave Valley	272	244	-28
Coachella Valley	199	121	-78
Eastern Kern County	98	39	-59
Imperial County	61	56	-5
Mountain Counties—Central	25	7	-18
Mountain Counties—Southern	74	35	-39
Butte County	37	9	-28
Western Nevada County	105	60	-45

Source: CARB, *Latest Year's (Annual) Ozone Summaries for Selected Regions (PST)*, https://www.arb.ca.gov/aqmis2/ozone_annual.php (last visited Aug. 12, 2024).

California has the most frequently polluted ozone nonattainment areas in the nation, with its South Coast Air Quality Management District now reporting more than 100 days each year with ozone concentrations exceeding the eight-hour NAAQS (70 parts per billion (ppb)).¹⁰⁷ Air quality improved across all of California's counties with monitored NAAQS violations despite warmer temperatures, as the number of ZEVs registered in California increased from less than 1% of the fleet in 2017 to 5.2% by 2023. These ozone improvements are not enough to attain air quality standards, but the ZEV strategy California was implementing turned the trend in favor of cleaner air.

Together, the modeling results for 2045 that show continued nonattainment for some large urban areas and marginal attainment for others, the significantly smaller NO_x emission reductions required by 2035 compared to the reductions expected in 2045, the expected increases in ozone formation caused by a warmer climate, and the recent spike in ozone concentrations after the COVID-19 pandemic reported by the American Lung Association demonstrate that the NO_x reductions required by the 2023 emission standards for ICE vehicles are not sufficient to ensure the reductions needed by some states to attain NAAQS by the applicable statutory attainment deadlines. More reductions are required by 2031 or 2037 to attain NAAQS.

3. CO₂ Standards for HDVs to Achieve Additional NO_x and PM_{2.5} Reductions

EPA's 2024 CO₂ emission standards for both HDVs and LDVs/MDVs will achieve approximately 22,000 tons of additional reductions in NO_x during 2036 as a result of EPA's expected growth in the market penetration of zero emission technologies for cars, pickups, trucks, and buses. Rescinding those standards would eliminate the regulatory pressure on manufacturers to accelerate the production and sale of zero emission technologies, leaving in place the regulatory framework that would allow NO_x emissions to increase as the vehicle fleet grows instead of achieving NO_x reductions as ICE vehicles are replaced with ZEVs.

In the 2024 final standards for GHG emissions from HDVs, EPA reported that the expected pathway for manufacturers to comply with the fleetwide CO₂ standards would result in increased production of ZEVs that would achieve additional NO_x reductions beyond those estimated for the NO_x emission standards applicable to ICE vehicles:

In our modeled potential compliance pathway, we project that the GHG emission standards will lead to an increase in HD ZEVs relative to our reference case (*i.e.*, without the rule), which will also result in downstream reductions of vehicle emissions of non-GHG pollutants that contribute to ambient concentrations of ozone, particulate matter (PM_{2.5}), nitrogen dioxide (NO₂), CO [carbon monoxide], and air toxics. Exposure to these non-GHG pollutants is linked to adverse human health impacts such as premature death as well as other adverse public health and environmental effects . . . As shown in Table ES-6, in 2055, we estimate a decrease in emissions from all criteria pollutants modeled (*i.e.*, NO_x, PM_{2.5}, VOC, and SO₂ [sulfur dioxide]) from downstream sources.¹⁰⁸

107. EPA reported the three-year "design value" for the Los Angeles air basin (using 2016-2018 data) as 111 ppb, which is 41 ppb greater than NAAQS (70 ppb). See U.S. EPA, *8-Hour Ozone (2015) Nonattainment Areas by State/County/Area*, <https://www3.epa.gov/airquality/greenbook/jncty.html> (last updated Sept. 30, 2025). The design value is obtained by averaging the fourth highest eight-hour concentration reported at a monitor for each of consecutive three years. Generally, this suggests that on the nine days when concentrations are higher than the fourth highest value, ozone levels exceeded 111 ppb.

108. HDV Standards, *supra* note 14, at 29455.

Table ES-6 reports that NO_x reductions from the increase in heavy-duty ZEVs would remove another 53,000 tons of NO_x during 2055 compared to EPA's 2022 NO_x emission standards. EPA also quantified the reductions in PM_{2.5} and the associated health benefits expected from the increased sale of heavy-duty ZEVs.¹⁰⁹ Assuming the same rate of annual NO_x reduction as EPA reports for PM_{2.5}, NO_x emissions from HDVs would be reduced about 10,000 tons during 2035.

4. CO₂ Standards for LDVs/MDVs to Achieve Additional NO_x Reductions

Similarly, EPA expects that the pathway for manufacturers to meet the CO₂ emission standards for LDVs and MDVs will also reduce NO_x emissions between now and 2036. All NO_x emissions from new LDVs sold during the decade will come from ICE vehicles. The avoided NO_x emissions from the CO₂ standards is achieved by displacing an estimated 92 million LD ICE vehicles with ZEVs, as estimated in the climate discussion above.

Of the 176 million LDVs added to the national fleet through 2036, only 17.5 million ZEVs might be sold instead of 92 million, while 84 million more NO_x-emitting vehicles will be added to the national fleet than would be expected if the current CO₂ standards governed. This shift in fleet mix represents an 80% increase in NO_x emissions from the new vehicles regulated by the 2027-2032 suite of tailpipe standards, adding more than 12,000 tons of NO_x emissions from on-road LDVs during 2036.¹¹⁰

V. The CAA Limits EPA's Discretion to Rescind Standards That Impact NO_x, PM_{2.5}, and Toxic Air Pollutants

Together, the CO₂ emission standards for LDVs/MDVs and HDVs achieve an additional 22,000 tons of annual NO_x reductions during each year beginning in 2036, and significant reductions of PM_{2.5} and toxic air pollutants beyond the reductions required by standards solely applicable to those pollutants. Appropriately, the standards for LDVs and MDVs are described as "multi-pollutant standards," and the standards for HDVs nominally denominated as standards for CO₂ are actually multi-pollutant standards because of the effect they have on increasing a manufacturer's production of zero NO_x and PM emission

technologies. Given the role both sets of standards play in advancing the penetration of zero emission technologies into the vehicle market, and the consequential reductions in criteria and toxic pollutants that they achieve, they are standards that apply to more pollutants than just CO₂.

The CAA establishes a number of requirements that govern standard setting under §202.¹¹¹ EPA's proposed rescission of the 2024 multi-pollutant standards fails to acknowledge these limitations on Agency discretion, and instead claims "nothing in the language of the statute prohibits or conditions our general authority to rescind prior actions."¹¹² But the Act prohibits the actions EPA proposes to take.

A. Current CO₂ Standards Were Lawfully Promulgated

Standards for CO₂ promulgated since 2009 were lawful when issued because they were based upon a finding that was supported by substantial evidence of harm to public health and welfare.¹¹³ Each rulemaking to establish standards recited and incorporated the findings made in the original EF, and in the updated reconsideration of those findings that EPA made when it responded to petitions to rescind the original 2009 EF.¹¹⁴ Now EPA proposes to exercise its "discretion" differently: "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."¹¹⁵

Exercising discretion differently to place more weight on uncertainties in the data, or to consider new data not previously available, does not render an earlier exercise of discretion unlawful. So long as the original EF was based on a reasonable interpretation of data available at the time the decision was made, it was a reasonable and lawful exercise of Agency discretion. Thus, CO₂ standards based on the original EF and subsequent reviews of that EF were lawfully issued and are subject to the statutory requirements that limit Agency discretion to revise or rescind those standards.

B. A Public Health and Welfare Finding Is Required to Revise Standards

EPA proposes to scrap the CO₂ standards based on the premise that if the EF is rescinded, there is no factual predicate for standards that limit CO₂. But as pointed out

109. *Id.* at 29712 tbl.VII-2.

110. Allowed NO_x emissions decline annually from 30 milligrams per mile (mg/mi) for model year 2026 to 15 mg/mi for model year 2032. *See* U.S. EPA, *supra* note 68, at 3-41 tbl.3-4. Assuming 176 million LDV units are sold during the period, 64 million more units are polluting ICE vehicles than would otherwise be allowed under the current suite of rules, each vehicle is driven an average of 12,000 miles during 2035, and NO_x emitted per mile complies with the 15 mg/mi standard, total NO_x emitted during 2035 from new vehicles governed by the 2027-2032 suite of standards would increase by 11,520 tons. But since vehicles sold in years before 2032 will be subject to less stringent NO_x standards, the total additional NO_x from new on-road vehicles will exceed 12,000 tons during 2035.

111. 42 U.S.C. §7521.

112. 90 Fed. Reg. at 36296.

113. 2009 EF, *supra* note 22.

114. The Administrator reviewed and reaffirmed this finding in response to petitions to vacate the finding. *See* U.S. EPA, EPA's Denial of Petitions Relating to the Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act (2022), https://www.epa.gov/system/files/documents/2022-04/decision_document.pdf.

115. 90 Fed. Reg. at 36310.

above, the Agency has long recognized through multiple rulemakings that the standards for CO₂ achieve significant reductions in NO_x, PM_{2.5}, and toxic air pollutants by accelerating the market penetration of zero emission technologies as alternatives to polluting ICE vehicles. EPA claims credit for these reductions in “non-greenhouse gas pollutants” as part of its benefits analyses of each suite of CO₂ standards, and includes those benefits in the basis and purpose for the standards. Clearly EPA has understood and represented to the public that the CO₂ standards are effectively multi-pollutant standards, and not just limitations on the emission of CO₂.

The effect of rescinding these standards is to revise the standards that control emissions of NO_x, PM_{2.5}, and toxic air pollutants. The statute is clear that before EPA may lawfully revise such standards, it must make a new finding that such revision is “needed to protect public health and welfare.”¹¹⁶ This provision in §202 requires that when EPA issues federal standards for on-road vehicles, it will implement the primary purpose of the Act “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.”¹¹⁷ In this proposed rulemaking to rescind standards, EPA has made no such finding.

EPA claims that an EF must be made as part of any rulemaking to establish emission standards to demonstrate the nexus between the public health need that creates authority to issue standards and the regulatory outcome required by proposed standards.¹¹⁸ With respect to the initial EF, such nexus must have been established in a single proceeding, but the statutory text in §202(b)(1)(C) governing the subsequent revision of standards issued under §202(a) explicitly requires that EPA demonstrate the public health and welfare need for such revision. EPA has not demonstrated a public health need for revising the CO₂ standards in a manner that would allow additional NO_x and PM emissions.

For criteria pollutants, the “need” to protect public health is established in NAAQS. The CAA requires EPA to determine the air quality requisite to protect public health and welfare by establishing NAAQS for each pollutant.¹¹⁹ With regard to ozone and PM_{2.5}, NAAQS have been established that provide the benchmark for determining whether additional reductions in emissions from on-road vehicles are needed.

The deterioration in ozone air quality around the country documented by the American Lung Association report demonstrates the need for significant further reductions in NO_x emissions. EPA’s recent revision of the annual NAAQS for PM_{2.5} from 12 to 9 micrograms per cubic meter will increase the number of counties that will be designated nonattainment for PM_{2.5} and increase the need for further reductions in primary particles and secondary

particle precursors such as NO_x emitted from diesel trucks. The need for additional reductions in emissions of these pollutants is clear. EPA has not offered any public health rationale for allowing vehicle emissions of these pollutants to be increased.

The only rationale that EPA has suggested as a public health reason for revoking the CO₂ standards is that such standards will drive up the cost of new vehicles in a manner that will slow the replacement rate, with the effect that older, dirtier vehicles will remain in service longer and thereby add to future fleet emissions. This suggestion, however, is contradicted by the cost analyses provided by EPA in support of the 2024 rules for both HDVs and LDVs/MDVs that showed the total cost of ownership being less for most ZEVs than comparable ICE models.¹²⁰ EPA’s new suggested contradictory conclusion is not supported by any reanalysis of cost of ownership or other data related to extending the useful life of existing vehicles.

Absent a comprehensive analysis of the public health and welfare need for revised standards, and a demonstration of how the proposed revisions will serve that need, the current proposed rescission of the suite of standards that include CO₂ is unlawful.

C. *The CAA Prohibits Backsliding*

Section 202(b)(1)(C) unequivocally prohibits EPA from revising standards to allow increased emissions: “Any revised standard shall require a reduction of emissions from the standard that was previously applicable.”

Even if EPA were to find that CO₂ standards had the effect of slowing the replacement of existing vehicles and therefore increasing future emissions, that fact would not allow EPA to violate the prohibition against backsliding. The proposed revision simply allows increased emissions of all non-GHG pollutants: NO_x, PM_{2.5}, air toxics, and CO. Rescinding the CO₂ standards for future model years would eliminate the NO_x, PM_{2.5}, and toxic air pollutant reductions that would be achieved by the regulatory pressure to increase the sale of ZEVs.

Assuming EPA’s discretion to rescind the EF is affirmed, to lawfully revise the CO₂ standards EPA must issue standards that would achieve greater reductions in NO_x, PM_{2.5}, and toxic air pollutants than is expected to be achieved under the current standards. To support any proposal to rescind standards for CO₂, EPA must perform a modeling analysis for both HDVs and LDVs/MDVs that quantitatively demonstrates how any revised or modified suite of standards for model years beginning in 2027 will achieve greater reductions in NO_x and PM_{2.5} compared to the current suite of emission standards.

This anti-backsliding provision is critical to protect the air quality and transportation planning processes. Federal emission standards provide the only source of reductions from on-road vehicles that states can apply for air quality planning and transportation plan conformity purposes.

116. CAA §202(b)(1)(C).

117. 42 U.S.C. §7401(b)(1).

118. 90 Fed. Reg. at 36290 (“CAA section 202(a) does not authorize the Administrator to make separate findings for endangerment and causation or contribution.”).

119. 42 U.S.C. §7409.

120. See *supra* Part III.

EPA has not even attempted to determine the impact that increased NO_x or PM emissions will have on emissions in specific nonattainment areas. Rescinding the federal standards will interfere with the ability of states to attain the ozone NAAQS, especially in severe and extreme ozone nonattainment areas where emission reductions during the 2027-2032 time frame will be critical for demonstrating attainment, and in PM_{2.5} nonattainment areas where significantly greater reductions are needed during the next decade to attain the revised annual NAAQS.

Transportation conformity requirements of the CAA require metropolitan planning organizations (MPOs) to demonstrate that emissions from the transportation system in a metropolitan area will comply with vehicle emission budgets in the state air quality attainment plan.¹²¹ Where meeting vehicle emission budgets requires emission reductions that will not materialize because EPA allowed manufacturers to produce more polluting vehicles than would have been expected under the prior standards, MPOs will not be able to demonstrate conformity. EPA repealing standards can lead to the loss of federal highway funding for metropolitan areas.

D. *Stability Requirement Bars Rescinding Standards for HDVs Before 2030*

CAA §202(a)(3)(C) requires that “[a]ny standard promulgated or revised under this paragraph and applicable to classes or categories of heavy duty vehicles or engines shall apply for a period no less than three model years beginning no earlier than the model year commencing 4 years after such revised standard is promulgated.” This provision requires that the standards for CO₂ applicable to model years 2027-2032 must at least remain in force for model years 2027-2029. Rescinding standards for those model years is prohibited.

E. *Technology-Based Standard Applies to HDVs and Toxic Air Pollutant Emitters*

Emission standards for HDVs and toxic air pollutants are technology-based. Deregulation of any pollutant is irrelevant to the technology determination that the CAA requires the Administrator to make. Standards that require production of “available” zero emission technologies cannot be rescinded.

Section 202(a)(3)(A) requires that:

regulations . . . applicable to emissions of hydrocarbons, carbon monoxide, oxides of nitrogen, and particulate matter from classes or categories of heavy-duty vehicles or engines manufactured during or after model year 1983

shall 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, giving appropriate consideration to cost, energy and safety factors associated with the application of such technology.

Subsection 202(l)(2) establishes a similar statutory directive for the control of “hazardous air pollutants from motor vehicles” (including benzene and formaldehyde listed by law, 1,3 butadiene, and other pollutants identified by EPA as “mobile source air toxics”) as follows:

The regulations shall contain standards for such fuels or vehicles, or both, which the Administrator determines reflect the greatest degree of emission reduction achievable through the application of technology which will be available, taking into consideration the standards established under subsection (a) of this section, the availability and costs of the technology, and noise, energy, and safety factors, and lead time.

This “greatest degree of emission reduction achievable” standard applies to all LDV, MDV, and HDV classes that emit one or more “hazardous air pollutant.”

1. *EPA Cannot Rescind Standards Based on Zero Emission Technologies*

The technology-based standard is applicable to HDVs because every HDV emits one or more of the four pollutants listed in §202(a)(3)(A), and the same standard applies under §202(l) to all vehicles that emit air toxics. These mandates require EPA to base its standards on an assessment of available technologies so long as any vehicle class emits any of the pollutants that trigger a technology-based standard. The fact that CO₂ is not one of the pollutants that triggers a technology-based standard does not authorize EPA to rescind standards based on “greatest degree of emission reduction achievable.”

ZEVs represent the “greatest degree of emission reduction achievable” because they emit zero NO_x, zero PM, and zero toxic air pollutants. Throughout the 2024 HDV and LDV/MDV rulemakings, EPA found explicitly in the discussion of technologies available to meet CO₂ standards, and implicitly in the estimates of ZEV market share that would occur with and without the CO₂ standards,¹²² that zero emission technologies are technically feasible and reliable, currently available on the market for nearly all vehicle classes, affordable when compared to ICE vehicles for most

121. See CAA §176(c) and implementing regulations at 40 C.F.R. Part 93.

122. For example, in the regulatory impact analysis for the HDV standards, EPA includes a detailed estimate of the market penetration expected for each HDV class with and without the CO₂ standards. U.S. EPA, *supra* note 100, app. B. EPA determined that either battery or fuel cell power sources are available, or will be available during 2027-2032, for nearly every HDV class or category.

LDV/MDV classes and some HDV classes, energy-saving compared to ICE vehicles, and safe.

EPA recognized that on-road vehicles commercially available today with zero emission power trains obviously satisfy the available technology requirement for model year 2027. A large fraction of the NO_x comes from HDV types that are *now* commercially available with zero emission power trains. These include transit and school buses, drayage vehicles linking ports and airports with distribution centers, delivery vans, service trucks, and shuttles serving airports, hotels, and resorts. EPA further affirmed the availability of zero emission technology by setting the CO₂ emission standards at levels that expected manufacturers to meet the fleetwide CO₂ emission targets by producing and selling ZEVs as part of their product mix.

The fact that the CAA does not apply the “greatest degree of emission reduction achievable” technology standard to CO₂ does not relieve EPA of the obligation to determine, as part of any revision of the standard, whether zero emission technologies must be required when “available” to reduce emissions of non-GHGs. To the extent that EPA relied upon manufacturers to sell zero emission technologies to meet their obligations under the CO₂ standards, and that such clean technologies would also reduce emissions of NO_x, PM_{2.5}, and toxic pollutants, EPA presumptively demonstrated and determined that ZEVs are available technology for the control of non-GHG pollutants. Having determined that ZEVs are the available technology capable of the “greatest degree of emission reduction achievable” for non-GHG pollutants, EPA cannot rescind the standards that create the regulatory pressure to produce and sell that technology unless that technology is not “available.”

2. Legislative History Requires Standards That Reflect Technology Advances

This statutory mandate to achieve “the greatest degree of emission reduction achievable” is continuing so long as there is the need for reductions to attain NAAQS. The statutory text and history imply (1) that standards for both HDVs and LDVs must continue to be strengthened as necessary to support the states in developing implementation plans needed to attain NAAQS; and (2) that for HDVs the progressive emission reductions that become available from more advanced technology must continue to be reflected in more stringent standards.

Prior to the 1977 Amendments, CAA §202(a) contained general language first enacted in 1963 that authorized the federal agency to promulgate regulations establishing emission standards for motor vehicles. In the 1970 Amendments, Congress for the first time established statutory emission-reduction targets for 1975 model-year vehicles to put a floor under EPA’s discretion. The statutory directive to set standards for HDVs that “reflect the greatest degree of emission reduction achievable” was first added to the Act in the 1977 Amendments.

That language came from the U.S. House of Representatives bill that enacted authority for the Administrator to

prescribe regulations [that] . . . shall 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, giving appropriate consideration to the cost of applying such technology within the period of time available to manufacturers and to noise, energy and safety factors associated with the application of such technology.¹²³

The U.S. Senate bill only required that “regulations shall contain standards which require a reduction of emissions of such pollutants established by the application of the best available control technology, taking into account the cost of compliance.”¹²⁴

The differences between the House and Senate provisions are significant for the proposed rulemaking. The Senate language only required “application” of “best available control technology,” which limited EPA’s authority to considering technology that could be applied to control emissions from an engine, and technology that was available. In contrast, the House language was broadly written to allow the Administrator to consider not only control technology, but also engine technology or alternative technologies that can achieve “emission reduction[s].” The House language also authorized the Administrator to consider technology that would become available by the model year when the standard would apply, whereas the Senate language limited EPA to considering control technology that was “available” when the standard was set. In conference, the Senate accepted the House language.

The 1977 Amendments only applied the “greatest degree of emission reduction” test to interim standards promulgated for model years 1979 to 1984 during the period prior to the 1985 statutory deadline for achieving percent reduction targets enacted by Congress. Section 202(a)(3)(A)(ii) mandated percentage emission-reduction targets for CO, VOCs, and NO_x to be met by 1985, but “[r]ecognizing that attainment of the 1985 targets levels may not be achieved in time, the Committee adopted a provision which permits the Administrator to revise these standards temporarily.”¹²⁵

The bill authorized EPA to revise the statutory standard for three model years, provided “the Administrator shall determine the maximum degree of emission reduction that can be achieved by means reasonably expected to be available for production for such period and shall prescribe a revised emission standard in accordance with such determination.”¹²⁶ Thus, the “greatest degree of emission reduction” test was not a continuing obligation, but rather an interim standard to ensure the application of the best available technology prior to development of technology capable of achieving the statutory standards. Once the statutory percentage emission-reduction targets were met,

123. H.R. REP. NO. 95-294, at 407 (1977) (bill text adding paragraph 202(a)(3)(A)).

124. S. REP. NO. 95-127, at 92 (1977).

125. H.R. REP. NO. 95-294, *supra* note 122, at 274.

126. *Id.* at 408 (adding subparagraph 202(a)(3)(B)).

EPA's authority to set additional more stringent standards was at an end.

When the 1990 Amendments were enacted, the statutory emission-reduction targets enacted in 1977 had been met. Those targets were repealed. But Congress recognized that further reductions were needed to attain air quality standards. Instead of enacting numeric limits, Congress adopted the “greatest degree of emission reduction achievable” language as the permanent applicable test for standard setting under §202(a)(3)(A). Rather than setting a static numeric target as an ultimate end point for standard setting, this history demonstrates congressional intent that EPA progressively continue to advance the stringency of standards for HDVs as technology improvements make further emission reductions “achievable.” To implement that objective, EPA has a continuing obligation whenever it opens a rulemaking to revise emission standards for on-road vehicles to consider whether technology advances are available to achieve greater emission reductions.

Coupled with the anti-backsliding prohibition in §202(b)(1)(C), the CAA requires EPA to establish technology standards under §202(a)(3) and §202(l) that “require a reduction of emissions” based on technology now available. The technology-driven reductions adopted to implement the CO₂ standards must now be retained if available to control NO_x, PM_{2.5}, or toxic air pollutants. Those technology-based standards may not be rescinded simply because they were determined to be available for the control of CO₂. Rescission of the EF, if lawful, does not negate the availability of zero emission technologies for the control of pollutants for which an EF remains in effect.

VI. Conclusion

A campaign promise in exchange for a billion-dollar campaign contribution does not empower any president to ignore the law. The rescission of emission standards that require reductions in multiple pollutants other than CO₂ would not satisfy any of the CAA requirements for standard setting. Rescinding the EF, without more, does not allow the Agency to rescind the 2024 emission standards for HDVs or LDVs/MDVs.

Any rulemaking that EPA opens to reconsider, revise, or rescind motor vehicle emission standards must, at a minimum:

- start with an acknowledgment that additional reductions of NO_x and PM_{2.5} emitted from motor vehicles are needed to attain NAAQS by the statutory deadlines;
- perform an analysis of the reductions needed in the most polluted major urban airsheds where more than 100 million Americans reside to determine the magnitude of additional reductions needed from mobile sources to attain NAAQS;
- evaluate the availability of zero emission technologies to require the “greatest degree of emission reduction achievable” standard for enough vehicle classes to support attainment strategies to timely attain NAAQS by the statutory deadline in all nonattainment areas; and
- adopt standards that will achieve greater reductions of NO_x, PM_{2.5}, and toxic air pollutants than the reductions required by the current suite of standards.