DETAILED COMMENTS OF

the States of California, Connecticut, Delaware, Hawaii, Iowa, Illinois, Maine, Maryland, Minnesota, New Jersey, New Mexico, New York, North Carolina, Oregon, Rhode Island, Vermont, and Washington, the Commonwealths of Massachusetts, Pennsylvania, and Virginia, the District of Columbia, and the Cities of Los Angeles, New York, Oakland, San Francisco, and San Jose

on

the Environmental Protection Agency's and the National Highway Traffic Safety Administration's Joint Proposed "SAFE" Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks

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INTRODUCTION

Our States and Cities[1] hereby submit these Detailed Comments in opposition to the United States Environmental Protection Agency's (EPA) and the National Highway Traffic Safety Administration's (NHTSA) (together, the "Agencies") Proposed "SAFE" Vehicles Rule for Model Year 2021-2026 Passenger Cars and Light Trucks, 83 Fed. Reg. 42,986 (Aug. 24, 2018) (the "Proposed Rollback" or "Proposal").[2] As discussed in detail below, EPA and NHTSA's Proposal to roll back the greenhouse gas (GHG) emissions reductions and fuel economy standards for model years (MY) 2021-2026 passenger cars and light-trucks (collectively "light-duty vehicles") violates their statutory mandates and is arbitrary and capricious or otherwise unlawful in multiple respects.

The Analysis below explains:

- The pioneering and vital role our States and Cities have played and continue to play in bringing about the adoption of the existing GHG emissions and fuel economy standards for light-duty vehicles (*see* Section I.A.);

- The impact the Proposed Rollback would have on the fight to limit climate change by increasing GHG emissions as well as other air emissions that adversely affect environmental justice communities most severely (*see* Section II.);

- The Agencies' violation of numerous important procedural requirements, including the failure to timely or adequately disclose critical data, the refusal to extend the comment period on the Proposed Rollback, and the failure to consult with the California Air Resources Board (CARB) or the States (*see* Section III.B.);

- EPA's contravention of the Clean Air Act by, and arbitrary and capricious reasoning for, proposing to roll back GHG emissions standards (*see* Section III.C.);

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[1] The States of California, Connecticut, Delaware, Hawaii, Iowa, Illinois, Maine, Maryland, Minnesota, New Jersey, New Mexico, New York, North Carolina, Oregon, Rhode Island, Vermont, and Washington, the Commonwealths of Massachusetts, Pennsylvania, and Virginia, the District of Columbia, and the Cities of Los Angeles, New York, Oakland, San Francisco, and San Jose.

[2] In addition to these Detailed Comments, the States and Cities are submitting three Appendices with our comments: (i) an Appendix of States and Cities Climate Impacts (States' Appx. A); (ii) an Appendix of ZEV Penetration and Infrastructure Beyond California (States' Appx. B); and (iii) an Appendix of Reference Materials (States' Appx. C). Appendices A and B are being submitted via www.regulations.gov, and Appendix C is being submitted on electronic media via overnight mail to each agency. Documents in Appendix C are numbered in sequence in an index attached hereto and provided electronically, and citations herein are to "C-[index document number]" and a page citation where appropriate.

- NHTSA's violation of the Energy Policy Conservation Act's (EPCA) "maximum feasible" requirement, its unlawful and unreasonable reinterpretations of statutory factors, and its arbitrary and capricious reasoning (*see* Section III.D.);

- The Agencies' reliance on flawed technical and economic analyses of compliance costs, societal impacts—such as alleged reduction of highway fatalities through the Proposed Rollback—and societal benefits that render the Agencies' conclusions arbitrary and capricious (*see* Section III.E.); and

- The unlawfulness of the Agencies' attack on separate State GHG emissions standards authorized under Sections 209 and 177 of the Clean Air Act, including NHTSA's proposed finding that EPCA preempts State standards, EPA's proposed revocation of California's waiver, and EPA's attempt to reinterpret Section 177 (*see* Section IV.).

Therefore, for the reasons set forth herein and in the appendices, as well as in comments incorporated by reference,[3] we urge EPA and NHTSA to promptly withdraw their Proposed Rollback.

DISCUSSION

I. EXISTING STANDARDS BACKGROUND

A. The Undersigned States and Cities Played a Vital Role in the Movement Towards and Ultimate Adoption of the Clean Car Standards

Many of our States played instrumental roles in bringing about the existing standards for MY 2012-2016 and MY 2017-2025 light-duty vehicles. *See* 77 Fed. Reg. 62,624 (Oct. 15, 2012). From California's role as a pioneer of the regulation of GHG emissions from vehicles starting in 2002, to Massachusetts' leadership of the States' challenge to EPA's 2003 denial of a petition to begin regulating GHGs under the Clean Air Act, we have been on the forefront.

California has long been a pioneer in the regulation of vehicle emissions to help control increased levels of air pollution. "California's interest in pollution control from motor vehicles dates to 1946," and "comprehensive statewide efforts began in 1957…." *Motor & Equip. Mfrs. Ass'n, Inc. v. EPA*, 627 F.2d 1095, 1109, n.26 (D.C. Cir. 1979) (*MEMA I*). By 1959, California had enacted legislation directing the establishment of air quality standards and controls for motor vehicle emissions. *See id.* (citing 1959 Cal. Stats., chap. 239, § 1 (former Cal. Health & Saf. Code § 24386)). "Since the inception of the federal government's emissions control program it

[3] CARB has also submitted comments on the Proposed SAFE Rule to the same dockets (hereinafter "CARB Comments"). Our States and Cities support and incorporate by reference CARB's Comments, including the expert reports attached thereto.

has drawn heavily on the California experience to fashion and improve the national efforts at emissions control." *Id.* at 1110.

The history is no different with regard to GHG emissions from vehicles. In 2002, the California Legislature adopted the nation's first statute requiring standards for vehicle GHG emissions for MY 2009 through 2016. 2002 Cal. Stats., chap. 200 (amending Cal. Health & Safe. Code § 42823 and adding § 43018.5).[4] As with other vehicle emissions standards adopted by California, in the years immediately following, many other States demonstrated a similar commitment, passing laws adopting California's standards (as Congress allowed them to do starting in 1977 under Section 177 of the Clean Air Act), in anticipation of EPA granting California's request for a waiver under Section 209 of the Clean Air Act. Thus, by 2008, the States of Connecticut, Maine, Maryland, New Mexico, New Jersey, New York, Oregon, Rhode Island, Vermont, and Washington, and the Commonwealth of Massachusetts—collectively representing over one-third of the light-duty vehicle market—had laws in place to adopt California's GHG vehicle emission standards.[5] When California's standards were challenged in federal district courts in California, Rhode Island, and Vermont, including on grounds of purported preemption that NHTSA has raised again in this rulemaking, we defended them successfully. *See Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie*, 508 F. Supp. 2d 295 (D. Vt. 2007); *Central Valley Chrysler-Jeep, Inc. v. Goldstene*, 529 F. Supp. 2d 1151 (N.D. Cal. 2007); and *Lincoln-Dodge, Inc. v. Sullivan*, 588 F. Supp. 2d 224 (D.R.I. 2008).

In parallel, many of our States joined the effort started by environmental organizations in 1999 to compel EPA to regulate GHG emissions from vehicles pursuant to Congress's broad mandate under Section 202 of the Clean Air Act (42 U.S.C. § 7521(a)(1)). *See Massachusetts v. EPA*, 549 U.S. 497, 506, 510, 514 (2007) (*Mass. v. EPA*). On this legal question, the Supreme Court had "little trouble concluding" that Section 202 authorizes EPA to regulate GHG emissions from new motor vehicles. *Id.* at 528. And, when EPA subsequently issued its finding that GHG emissions from motor vehicles endanger the public health and welfare, many of our States intervened to defend against legal challenges. *See Coalition for Responsible Regulation, Inc. v. EPA*, 684 F.3d 102 (2012), *rev'd in part on other grounds*, *Util. Air Regulatory Group v. EPA*, 134 S. Ct. 2427 (2014).

In 2009, when EPA and NHTSA embarked on the development of the first phase of the "National Program" for MY 2012-2016 light-duty vehicles, California and other States were there to offer their support and the technical expertise of CARB. And, in 2012, when the federal government extended the National Program to MY 2017-2025, "a key element in developing the final rules was the agencies' collaboration with the California Air Resources Board…." 77 Fed. Reg. at 62,632. Further, the federal government committed to cooperation with CARB going

[4] The California Legislature found that "[g]lobal warming would impose on California, in particular, compelling and extraordinary impacts," including potential reductions in water supply, adverse health impacts, adverse impacts on food production, a doubling of catastrophic wildfires, damage to the coastline and ocean, and significant impacts on consumers, businesses and the economy. *Id.* at § 1.

[5] *See* Section IV. of these Detailed Comments for a fuller discussion of California's history and the authority granted by Congress. *See also* CARB Comments.

forward, stating in 2012 that "NHTSA and EPA fully expect to conduct [the] mid term evaluation with the California Air Resources Board, given [their] interest in maintaining a Nation Program to address GHG emissions and fuel economy." *Id.* at 62,633. That cooperation did indeed continue through 2016, when EPA, NHTSA and CARB jointly worked on an extensive Technical Assessment Report (TAR)[6] that formed the basis for EPA's January 2017 and CARB's March 2017 conclusions that the standards for MY 2022-2025 remained appropriate.[7] But, as discussed in Section II.C.1. of these Detailed Comments, shortly after January 2017, that cooperation ceased, and EPA and NHTSA embarked on the reversal of course that has brought us to this point.

The commitment of our States and Cities to reduce vehicle GHG emissions is longstanding and remains resolute. We have proven our ability to work cooperatively with the federal government and the automobile industry on vehicle GHG emissions standards. We have also demonstrated, however, that we will take action to protect our interests when EPA or NHTSA flouts its statutory obligations or acts arbitrarily and capriciously, much less when they unjustly threaten the authority Congress granted the States in Sections 209 and 177 of the Clean Air Act.

B. The Existing Standards Chart a Path for Substantial Cost-Effective Reductions in GHG Emissions and Increases in Fuel Economy Through 2025

In the 2012 rulemaking, EPA, pursuant to its Clean Air Act authority, adopted GHG emissions standards for MY 2017-2025 light-duty vehicles. NHTSA, pursuant to its authority under EPCA, adopted Corporate Average Fuel Economy (CAFE) standards for MY 2017-2021, and augural standards for MY 2022-2025 light-duty vehicles. 77 Fed. Reg. at 62,632 (the "existing standards" or "2012 Final Rule"). The existing standards for MY 2017-2025 adopted in 2012 functionally continued and strengthened the coordinated National Program that applied to MY 2012-2016 light-duty vehicles. *Id.* at 62,624. In both 2009 and 2012, EPA and NHTSA (together, the "Agencies") developed their proposals after extensive consultation with CARB and thirteen automakers representing over 90% of United States auto sales. *Id.* at 62,632.

The existing standards require year-over-year improvements in GHG emissions and fuel economy. For example, for MY 2017-2021, the existing standards call for reductions in GHG emissions of 3.6% annually for passenger cars and 2.3% annually for light trucks. For MY 2022-2025, the standards call for a 4.4% annual reduction from both passenger cars and light trucks. 77 Fed. Reg. at 62,638. The Agencies found that in combination the two sets of standards (along with 2011 CAFE Standards):

> will result in MY 2025 light-duty vehicles with nearly double the fuel economy, and approximately one-half of the GHG emissions compared to MY 2010 vehicles—representing the most significant

[6] *See* States' Appx. C-40, Joint Technical Assessment Review (hereinafter "TAR").
[7] *See* States' Appx. C-39, U.S. EPA, Final Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emission Standards under the Midterm Evaluation. EPA-420-R-17-001, January 2017 (hereinafter "EPA 2017 Final Determination"), and C-45, CARB Board Resolution 17-3 Advanced Clean Cars Midterm Review.

> federal actions ever taken to reduce GHG emissions and improve fuel-economy in the U.S.

Id. at 62,630. As to the second phase (2017-2025) alone, the Agencies estimated that the National Program would:

> save approximately 4 billion barrels of oil and … reduce GHG emissions by the equivalent of approximately 2 billion metric tons over the lifetimes of those light-duty vehicles produced in MY 2017-2025.

Id. at 62,631.

Notably, the design of the existing standards includes a number of tools to adjust to changes in the composition of the vehicle fleet and to provide automakers with flexibility. Thus, for example, the standard for a particular vehicle will be based on its footprint (the wheelbase multiplied by average track width)—the longer and wider the vehicle, the less stringent the standard. *Id.* at 62,643.[8] Ultimately, the fleet-wide average GHG emissions or fuel economy required of a manufacturer will vary based on the composition of its fleet. Auto manufacturers can also receive credits for over-compliance in any given year, and save those credits for years in which they do not meet requirements or sell those credits to other manufacturers that want them. *Id.* at 62,628.

The existing standards are also designed to accommodate automakers by allowing them to build a single fleet. In the Agencies' words:

> As with the MY 2012-2016 final rules, a key element in developing the final rules was the agencies' collaboration with the California Air Resources Board (CARB) and discussions with automobile manufacturers and many other stakeholders. Continuing the National Program will help to ensure that all manufacturers can build a single fleet of U.S. light-duty vehicles that satisfy all requirements under both federal programs as well as under California's program, helping to reduce costs and regulatory complexity while providing significant energy security, consumer savings and environmental benefits.

77 Fed. Reg. at 62,632.

That is not to say that California's standards are identical to EPA's; they are not. Rather, California adopted and has its own GHG emissions standards for MY 2017-2025 light-duty vehicles (Cal. Code Regs., tit. 13, §§ 1961.3 *et seq*.), but California also agreed that manufacturers that complied with the National Program for MY 2017 through 2025 would be deemed to have complied with California's standards for those model years, with the understanding that the National Program would provide equivalent or better overall GHG reductions in the State compared to California's program. Even then, of course, automobile

[8] This marked an increase in flexibility from the standards that applied from 2012-2016.

manufacturers—which by and large are global companies—still continue to design fleets to meet different emissions, fuel economy and safety standards around the world.[9]

For consumers, the existing standards were projected to provide significant cost savings. In 2012, the Agencies estimated that:

> Although … technologies used to meet the standards will add, on average $1,800 to the cost of a new light-duty vehicle in MY 2025, consumers who drive their MY 2025 vehicle for its entire lifetime will save, on average, $5,700 to $7,400 (7 and 3 percent discount rates, respectively) in fuel, for a net lifetime savings of $3,400 to $5,000.

77 Fed. Reg. at 62,631.[10] At a societal level, EPA and NHTSA calculated that "fuel savings will far outweigh higher vehicle costs, and that the net benefits to society of the MY 2022-2025 National Program will be in the range of $326 billion to $451 billion (7 and 3 percent discount rates, respectively)" over the lifetimes of those light-duty vehicles sold in MY 2017-2025.[11] *Id.*

In sum, the existing standards constitute a serious effort to reduce the pollution from vehicles that is a major contributor to climate change and to conserve energy, while providing automobile manufacturers significant flexibility and benefiting consumers' wallets. The existing standards were the result of an extraordinary consensus among two federal agencies, the State of California, 13 automobile manufacturers (representing 90% of U.S. vehicle sales), and the United Auto Workers, as well as consumer and environmental groups. *See* 77 Fed. Reg. at 62,632.

C. The 2016 Technical Assessment Report and 2017 Mid-Term Evaluation Affirmed that the Clean Car Standards Remain Appropriate

As part of the 2012 Final Rule, EPA and NHTSA committed to conduct a midterm review (called the Mid-Term Evaluation or MTE) by no later than April 1, 2018 to determine if the GHG and fuel economy standards for MY 2022-2025 were still appropriate. 77 Fed. Reg. at 62,784. In the summer of 2016, EPA and NHTSA, in consultation with CARB, prepared a

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[9] *See* States' Appx. C-56, at 1, Ziffi Yang et al., 2017 Global Update, Light Duty Vehicle Greenhouse Gas and Fuel Economy Standards, Int'l Council on Clean Transportation (hereinafter "ICCT, 2017 Global Update").

[10] "This estimate assumes gasoline prices of $3.87 per gallon in 2025 with small increases most years throughout the vehicle's lifetime." *Id.*

[11] These figures are conservative, given that there are strong arguments for using a discount rate of less than 3% for calculations of the benefits of reducing GHG emissions (or conversely the social costs of such emissions (*i.e.*, the social cost of carbon)). *See* Expert Report by Maximilian Auffhammer et al., at 12-13, attached to CARB Comments (The Use of the Social Cost of Carbon in the Federal Proposal "Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks") (October 19, 2018) (hereinafter "Auffhammer Report").

1,217-page Draft TAR that compiled and analyzed information the three agencies had gathered regarding a wide range of technical issues relevant to the GHG and fuel economy standards, including a detailed assessment of the technologies and compliance pathways available to meet the standards. *See* 81 Fed. Reg. 49,217 (Jul 27, 2016) (announcing TAR).[12] Based on that assessment, EPA completed its MTE in January 2017, and issued a final determination concluding that the existing GHG standards for MY 2022-2025 vehicles were still appropriate.[13] In March 2017, CARB also completed its own midterm review of the MY 2022-2025 GHG standards and reached the same conclusion.[14]

In the TAR, EPA, NHTSA and CARB concluded the following:

- A wider range of technologies exist for manufacturers to use to meet the MY 2022-2025 standards than projected in the 2012 Final Rule;
- The costs for meeting the standards are similar to, or lower than, those projected in the 2012 Final Rule;
- Vehicle manufacturers will be able to meet the standards primarily using advanced gasoline vehicle technologies, and will only require modest levels of strong hybrids and very low levels of full electrification; and
- Although consumer choice, the price of fuel, and other factors influence the fleet mix, changes in the fleet mix should not affect the ability of vehicle manufacturers to meet the standards because the standards are footprint-based and adjust based on the mix of vehicles each manufacturer produces for a given model year. Thus, the standards automatically accommodate changes in the fleet mix.[15]

The TAR also provided an updated analysis of the benefits that the standards are expected to deliver:

- The TAR projected a target carbon dioxide (CO_2) level of between 169 and 178 g/mi, slightly above that projected in the 2012 Final Rule (163 g/mi). The TAR also projected a target CAFE standard of between 45.7 and 47.7 miles per gallon (mpg), slightly below that projected in the 2012 Final Rule (48.7 mpg).[16]
- Based on these projections, EPA estimated that the existing MY 2022-2025 standards would reduce GHGs by about 540 million metric tons (MMT) over these vehicles' lifetime. NHTSA, which incorporated "early action" benefits from prior model years and a longer "stabilization" timeframe, concluded that the amount of GHG emission reductions attributable to the MY 2022-2025 standards would be about 748 MMT.[17]

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[12] *See* States' Appx. C-40, TAR.
[13] *See* States' Appx. C-39, EPA 2017 Final Determination.
[14] *See* States' Appx. C-45, Air Resources Board, Advanced Clean Cars Midterm Review, Resolution 17-3, March 24, 2017.
[15] States' Appx. C-40 at ES-2, TAR.
[16] *Id.* at ES-8.
[17] *Id.* at ES-10 to ES-11.

- Relatedly, EPA attributed a reduction of 1.2 billion barrels of oil consumption to the standards. NHTSA estimated a 1.6-billion-barrel reduction due to the standards.
- EPA's analysis in the TAR estimated the incremental average per-vehicle cost for meeting the MY 2025 standards to be between $894 and $1,017, which is below the corresponding amount projected in the 2012 Final Rule ($1,070). NHTSA provided a separate analysis that projected the incremental average per-vehicle cost to be $1,245, with lower amounts estimated when factoring out civil penalties and when conducting sensitivity analyses.[18]
- EPA projected that the MY 2025 standards would result in a net lifetime consumer savings of $1,460 to $1,620 and a payback period of about 5 to 5 ½ years. NHTSA projected an average net lifetime consumer savings of $680 per vehicle and a payback period of about 6 years.[19]
- EPA estimated consumer pre-tax fuel savings to be $89 billion. Total net benefits were estimated to be $90–$94 billion.[20] NHTSA estimated a wider range of fuel savings, between $67 and $122 billion, and total net benefits totaling $88 billion.[21]

The Agencies subjected their estimates to sensitivity analyses and different discount rates and, although the precise results varied somewhat, the overall conclusions remained the same: the GHG and fuel economy standards remain achievable at similar or lower costs than originally anticipated in the 2012 Final Rule and will yield substantial consumer savings and substantial societal net benefits.

Based on the Agencies' analyses and findings in the TAR and some additional analyses in EPA's November 2016 Proposed Determination, EPA issued its final determination in January 2017 ("2017 Final Determination"), in which it concluded that "the MY 2022-2025 standards currently in effect are feasible (evaluated against the criteria established in the 2012 rule) and appropriate under section 202, and do not need to be revised."[22] Specifically, EPA found the following:

- The existing standards are feasible at reasonable costs and without extensive electrification of the fleet. Multiple cost-effective compliance pathways are available to meet the MY 2022-2025 standards, and those pathways predominantly reflect the application of technologies already in commercial production. Moreover, the standards can be met largely through advances in gasoline vehicle technologies. The costs to meet the standards (projected to be

[18] *Id.* at ES-8 to ES-9.
[19] *Id.* at ES-10.
[20] *Id.* at ES-11 to ES-12.
[21] *Id.* at ES-12.
[22] States' Appx. C-39, at 3, EPA 2017 Final Determination.

between $800 and $1,115) are lower than those that were projected in the 2012 Final Rule.[23]

- The standards will achieve significant reductions of GHGs and oil consumption. EPA projected that compliance with the standards will result in an average real-world fuel economy standard of about 36 mpg, which would mean an improvement of about 1 mpg per year between 2016 and 2025. This analysis included sensitivity analyses based on low- and high-fuel price scenarios. EPA estimated that the standards will reduce GHG emissions by 540 MMT and reduce oil consumption by 1.2 billion barrels.[24]
- The standards will provide significant benefits to consumers and the public. EPA estimated total consumer fuel savings at $92 billion, and total net benefits at $98 billion.[25]
- The auto industry is thriving and meeting the standards more quickly than required. On average, the industry outperformed the first four years of GHG standards (MY 2012-2015), while, at the same time, successfully rebounding from a period of deep economic distress. Vehicle sales increased for seven straight years to an all-time record high in 2016.[26]

II. THE PROPOSED ROLLBACK OF FEDERAL GHG EMISSIONS STANDARDS AND FUEL ECONOMY STANDARDS ENDANGERS THE PUBLIC HEALTH AND WELFARE AND THE ENVIRONMENT

A. The Proposed Rollback Would Require Little or No Progress on GHG Emissions or Fuel-Economy for a Period of Six Years

The Agencies propose to roll back the GHG emissions and fuel economy standards for MY 2021-2025, and to extend that rollback to 2026. 83 Fed. Reg. 42,986. The Proposed Rollback sets forth eight alternatives, all of them less stringent than the existing GHG emission standards. 83 Fed. Reg. at 42,990. EPA and NHTSA attempt to justify rolling back the standards on three fronts: societal costs, safety, and minimal harm to the climate. *Id*. at 42,986. Each of these justifications is seriously flawed and is addressed in detail in Section III. below.

The preferred alternative (Alternative 1) is the largest rollback of the existing fuel economy standards of the alternatives presented. In it, NHTSA proposes amending the 2021 fuel economy standard and proposes new standards for MY 2022 through 2026 by holding those standards to 2020 levels, rather than imposing year-over-year improvements in fuel economy as the augural standards do. 83 Fed. Reg. at 42,986. NHTSA's Alternative 7 proposes the least drastic rollback from the existing standards (i.e., it presents the most stringent standards of the alternatives presented), maintaining the existing standards through MY 2021 (instead of 2020) and then increasing 2% per year for passenger cars and 3% per year for light trucks from 2022-

[23] *Id.* at 3-5.
[24] *Id.* at 5-6.
[25] *Id.* at 7.
[26] *Id.* at 7-8.

2026. *Id*. at 42,990. And yet, this alternative is still well below the stringency of the augural standards. Alternatives 2-6 and 8 represent intermediate levels of fuel economy standards, bookended by the baseline existing standards (most stringent) and the preferred alternative (least stringent). None of NHTSA's proposed alternatives include fuel economy standards more stringent than the augural standards.

Similarly, EPA's preferred alternative (Alternative 1) is the largest rollback of the existing GHG emission standards of the eight alternatives presented. In it, EPA proposes to hold MY 2021-2026 standards to 2020 levels, rather than imposing year-over-year reductions in GHG emissions as the current standards do. 83 Fed. Reg. at 42,986. EPA's Alternative 7 is also more restrictive than the other alternatives but not as stringent as the current standards. *Id.* at 42,990. None of EPA's proposed alternatives includes GHG emission standards more stringent than the existing standards.

In short, all of the alternatives proposed by EPA and NHTSA would roll back the landmark standards agreed to by a broad coalition in 2012. In the section below, we discuss the impacts of the proposed rollback on the environment and public health.

B. The Proposed Rollback Would Impede Needed Emissions Reductions That Would Help Avoid Catastrophic Climate Change

The overwhelming scientific consensus is that immediate and continual progress toward a near-zero GHG-emission economy by mid-century is necessary to avoid truly catastrophic climate change impacts.[27] Such reductions could hold the increase in global mean surface temperatures from pre-industrial levels to 3.6°F (2°C), which has been identified for decades as "an upper limit beyond which the risks of grave damage to ecosystems, and of non-linear responses, are expected to increase rapidly."[28] More recently, however, attention has turned to

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[27] *See* States' Appx. C-2, at SPM-15, Intergovernmental Panel on Climate Change (IPCC), 1.5°C Report, an IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global GHG emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development and efforts to eradicate poverty, Summary for Policymakers (hereinafter "IPCC 1.5°C Report") ("In model pathways with no or limited overshoot of 1.5°C, global net anthropogenic CO_2 emissions decline by about 45% from 2010 levels by 2030…, reaching net zero around 2050…. Non-CO_2 emissions in pathways that limit global warming to 1.5°C show deep reductions that are similar to those in pathways limiting warming to 2°C (*high confidence*)."); *see also* States' Appx. C-17, at 393, DeAngelo, B.J., et al., 2017, Perspectives on Climate Change Mitigation, at 393. In Climate Science Special Report: Fourth National Climate Assessment, Vol. I. U.S. Global Change Research Program, Washington, D.C., USA (USGCRP), doi: 10.7930/JIM32SZG (hereinafter "Fourth Nat'l Climate Assessment") ("Stabilizing global mean temperatures to less than 3.6°F (2°C) above preindustrial levels requires substantial reductions in the net global CO_2 emissions prior to 2040 relative to present-day values and likely requires net emissions to become zero or possibly negative later in the century.")).

[28] *See* States' Appx. C-17, at 397, Fourth Nat'l Climate Assessment, quoting Stockholm Environment Institute, 1990: Targets and Indicators of Climate Change, Rijsberman, F.R. and R.J. Swart (Eds.), at 166 (1990).

the consequences of not limiting the increase in global mean temperatures even further, to 2.7°F (1.5°C), which an October 2018 Intergovernmental Panel on Climate Change (IPCC) report addressed.[29] The federal government's scientists also have explained that aggressive actions need to be taken today and in the next decade or two to prevent future climate change impacts that will be "irreversible on human timescales," because of the longevity of CO_2 emissions in the atmosphere (a portion lasting over 1,000 years) and the slow rate at which the oceans can cool.[30]

In the face of these stark facts, EPA recklessly proposes to gut the primary GHG-emission-reduction program for the United States' single-largest emitting sector—replacing a roughly 4.4%-per-year reduction in light-duty vehicles' GHG emissions from 2022-2025[31] with no increase in stringency for at least 6 years (2021-2026), and NHTSA proposes to follow a similar path with its CAFE mileage standards. Given the sheer size of the United States' light-duty vehicle market, EPA's and NHTSA's preferred alternative is the equivalent of a nation the size of Germany, Brazil, or Canada calling a 6-year halt to any further GHG reductions across all their economic sectors (electricity, transportation, industrial, land use, etc.).[32]

Slamming the brakes on reductions in GHG emissions from United States light-duty vehicles for over half a decade would deal a substantial blow in the fight against climate change. As it stands, the federal government's own scientists believe that the commitments made by the United States and other nations through the Paris process[33] provide less than a 10% chance of holding to a 3.6°F (2°C) temperature rise, and "there would be virtually no chance if emissions climbed to levels above those implied by the country announcements."[34] Yet, that is precisely the direction EPA's Proposed Rollback points us, increasing the United States' emissions above its commitment levels. As discussed in Section III.C. below, EPA's apparent resignation to a baseline scenario projecting very high global GHG emissions through 2100 and resulting catastrophic climate change constitutes a wholesale abdication of its statutory obligations to the American people.

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[29] *See* States' Appx. C-2, at SPM-8, IPCC 1.5°C Report.

[30] *See* States' Appx. C-17 at 394, Fourth Nat'l Climate Assessment (citation omitted). *See also* States' Appx. C- 74, at 16, IPCC, Climate Change 2014 Synthesis Report, Summary for Policymakers (2014) (hereinafter "IPCC, 2014 Synthesis Report") ("Many aspects of climate change and associated impacts will continue for centuries, even if anthropogenic emissions of GHGs are stopped. The risks of abrupt or irreversible changes increase as the magnitude of warming increases.").

[31] *See* Corporate Average Fuel Economy Standards Passenger Cars and Light Trucks Model Years 2017-2025, Final Environmental Impact Statement (July 2012) (hereinafter "2012 FEIS") at S-7 ("For MYs 2022-2025, the annual stringency increases set forth average 4.4 percent (…on a [grams per mile] gpm basis).

[32] *See* States' Appx. C-72, at 2-28, U.S. Greenhouse Gas Inventory 1990-2014, U.S. EPA; and States Appx. C-73, Wikipedia, List of Countries by 2014 Emissions, citing to World Resources Institute database.

[33] *See* https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement, last visited Oct. 24, 2018.

[34] *See* States' Appx. C-17, at 398, Fourth Nat'l Climate Assessment.

EPA's and NHTSA's Proposed Rollback also would render the United States a global outlier on vehicle GHG emissions. As of 2017, 36 countries—Brazil, Canada, China, the 27 member-countries of the European Union, India, Japan, Mexico, Saudi Arabia, South Korea, and the United States—representing 80% of new light-duty vehicles sold globally, have established fuel economy or GHG emissions standards, and other large markets are developing standards as well.[35] Should EPA and NHTSA finalize their preferred alternative, the United States' passenger car standards from 2021 to 2026 would lag behind all but those of Brazil, Mexico, and Saudi Arabia, and our light-truck standards would lag behind those of all 35 other countries.[36] In other words, a significant portion of the world will be accomplishing what EPA and NHTSA deem out of reach.

In the following Sections II.B.1-2., we examine the scientific consensus on the causes of climate change, the harmful current and future impacts resulting from climate change, and the degree to which EPA's and NHTSA's Proposed Rollback changes direction and would affect future outcomes.

1. Consumption of Fossil Fuels is a Dominant Driver of Climate Change, and EPA and NHTSA Cannot and Do Not Contend Otherwise

In 2009, EPA found an "ocean of evidence"[37] that human-caused or "anthropogenic" GHG emissions are driving climate change that endangers the public health and welfare,[38] which it reaffirmed in the 2012 Final Rule.[39] In 2009, EPA clearly acknowledged that the United States' annual emissions came "mostly from fossil fuel combustion."[40] Since that time, numerous scientific bodies have confirmed these basic facts. In 2017, the Fourth National Climate Assessment's lead authors representing the National Science Foundation, National Oceanic and Atmospheric Administration (NOAA), and National Aeronautics and Space Administration (NASA), with contributions from leading scientists from other federal organizations including the Department of Energy and its National Laboratories, Army Corps of Engineers, National Center for Atmospheric Research, Department of Defense, Department of Agriculture, Department of Health and Human Services, and EPA, concluded:

> "based on extensive evidence, that it is extremely likely that human activities, especially emissions of GHGs, are the dominant cause of the observed warming since the mid-20th century. For the

[35] *See* States Appx. C-56, at 1, ICCT, 2017 Global Update.
[36] *Id.* at 10-11 (Figures 2-4).
[37] *Coalition for Responsible Regulation*, 684 F.3d at 123.
[38] Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496 (Dec. 15, 2009).
[39] *See* 77 Fed. Reg. at 62,627.
[40] *See* 74 Fed. Reg. at 66,539.

> warming over the last century, there is no convincing alternative explanation supported by the extent of observational evidence."[41]

Among the human activities that cause climate change, the single largest is the burning of fossil fuels. According to the IPCC's 2014 Synthesis Report:

> Emissions of CO_2 from fossil fuel combustion and industrial processes contributed about 78% of the total [greenhouse gas] emissions increase from 1970 to 2010, with a similar percentage contribution for the increase during the period from 2000 to 2010 (*high confidence*).[42]

Even the oil industry has recently declined to dispute these findings. In a recent proceeding in federal district court against the world's five largest investor-owned oil companies, for example, counsel for Chevron stated as follows:

> And as I mentioned, the most recent IPCC report, was issued in 2013, is called "AR5." And it concluded -- and I'll just read it, and quote it. Quote: "*It is extremely likely that human influence has been the dominant cause of the observed warming since the mid-20th century,*" close quote. And … *from Chevron's perspective there's no debate about climate science*. First, because Chevron accepts … what the IPCC has reached consensus on in terms of science on climate change.[43]

Similarly, the major automakers have also acknowledged the overwhelming scientific evidence and acknowledged the need to reduce vehicle GHG emissions.

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[41] States' Appx. C-17, at 10, Fourth Nat'l Climate Assessment. *See* also States' Appx. C-73, at 5, IPCC, 2014 Synthesis Report ("The evidence of human influence on the climate system has grown since the IPCC Fourth Assessment Report (AR4). It is extremely likely that more than half the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forcings together.").

[42] *See* IPCC, Climate Change 2014 Synthesis Report Summary for Policymakers, at 5; *see also id.* at 3, fig. SPM.1(d), and 5, fig. SPM.2. Other significant human-caused contributors to climate change include deforestation and other land use change, and emissions of methane, nitrous oxide, and fluorinated gases. *Id.*

[43] *See* States' Appx. C-76, at 81-82, Transcript of Proceedings, *The People of the State of California et al. v. BP, P.L.C.*, Case No. 3:17-cv-6012 WHA (N.D. Cal. Mar. 21, 2018) (hereinafter "*People v. BP*") (emphasis added). *See also* States' Appx. C-75, at 2, Exxon Mobil Corporation's Response to March 21, 2018 Notice to Defendants re Tutorial, *People v. BP* (ECF doc. # 206) at 2 ("The risk of climate change is clear, significant, and warrants comprehensive policies to understand and address the risk…. The climate system is warming in part due to increased concentrations of greenhouse gases in the atmosphere.").

Ford:

> We acknowledge that climate change is real and that we share the responsibility for reducing greenhouse gas (GHG) emissions in our products….[44]
>
> [W]e know climate change is real and a critical threat, and we will continue to work with leaders around the world in support of ambitious global greenhouse gas reduction targets.[45]

General Motors:

> [W]e have the ambition, the talent and the technology to create a world with zero crashes, zero emissions and zero congestion.[46]

By contrast, EPA barely notes in passing that "GHG emissions from light-duty vehicles have been found by EPA to endanger public health and welfare…." 83 Fed. Reg. at 43,228. EPA's section of the rulemaking contains no detailed discussion of the causes of climate change or the link to vehicles' consumption of fossil fuels. Because it had to produce a Draft Environmental Impact Statement (DEIS), NHTSA goes a bit deeper than EPA. For example, NHTSA acknowledges that "[h]uman activities, particularly fossil-fuel combustion, have been identified by the Intergovernmental Panel on Climate Change (IPCC) as primarily responsible for increasing the concentrations of GHGs in the atmosphere."[47] And, NHTSA cites the IPCC's conclusion that "[i]t is *extremely likely* that human influence has been the dominant cause of the observed warming since the mid-20th century."[48] NHTSA also acknowledges that "[i]sotropic and inventory-based studies have indicated that the rise in the global CO_2 concentration is largely a result of the release of carbon that has been stored underground through the combustion of fossil fuels (coal, petroleum, and natural gas) used to produce electricity, heat buildings, and power motor vehicles and airplanes, among other uses."[49] That EPA, in particular, has given so little consideration in the Proposed Rollback to the contribution of vehicles' consumption of fossil fuels to climate change and the effects of climate change (discussed below) is indicative of EPA's disregard for its obligations under the Clean Air Act.

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[44] *See* States' Appx. C-102, at 1, Ford Sustainability Report, 2017, Customers and Products.
[45] *See* States' Appx. C-101, at 1-2, Ford Reports Environmental Progress Across Business, Aug. 25, 2017.
[46] *See* States' Appx. C-103, at 2, GM's Path to an All-Electric, Zero Emissions Future, Mar. 7, 2018.
[47] NHTSA, Draft Environmental Impact Statement (July 2018) (hereinafter "NHTSA DEIS") at S-12.
[48] *Id.* (citation omitted, emphasis in original).
[49] *Id.* at S-13.

2. The Impacts of Greenhouse Gas Emissions on the Climate and the Environment and Public Health Already Are Substantial

In a supplement to President Trump's fiscal-year 2017 Budget, the United States Global Change Research Program (USGCRP) opened its report as follows:

> The global environment is changing rapidly. This century has seen 15 of the 16 warmest years since adequate thermometer records became available in the late 1800s; globally-averaged temperatures in 2015 shattered the previous record, which was set in 2014; and 2016 is on track to break the 2015 record. Arctic sea-ice extent continues a dramatic, decades long decline. Many independent lines of evidence show a long-term warming trend driven by human activities, with cascading impacts that may outpace the ability of human and natural systems to adapt to change.[50]

Because an acknowledgement or examination of these impacts is noticeably absent from EPA's portion of the Proposed Rollback, which spends less than half a page on the "consideration" of GHG emissions,[51] below we examine several of the measurable impacts from GHG emissions to date and that can be expected in the future at a global, national, state, and local level. In addition, in the States and Cities' Appendix A submitted herewith, we provide state and city-level summaries of the impacts of climate change in each of our jurisdictions. To the extent these topics are discussed at all in the Proposed Rollback, it is in NHTSA's DEIS, which, as discussed in the States and Cities' separate comments on the DEIS, is critically flawed and legally inadequate.

a. Temperature Increases

According to the USGCRP, "[g]lobal annually averaged surface air temperature has increased about 1.8°F (1.0°C) over the last 115 years (1901-2016). **This period is now the warmest in the history of modern civilization.**"[52] Looking just at the last few decades, "[g]lobal annual average temperature…has increased by more than 1.2°F (0.65°C) for the period 1986-2016 relative to 1901-1960…."[53] Further, we have yet to experience the full warming impact of the current GHG concentrations in the atmosphere, because the warming effect continues over a long period. Thus, "[e]ven if existing concentrations could be immediately stabilized, temperature would continue to increase by an estimated 1.1°F (0.6°C) over this century, relative to 1980-1999…."[54] The dominant cause of this warming is "human contribution," while "the likely contributions of natural forcing and internal variability…are minor."[55] Figure 1 below illustrates the changes in temperature already experienced.

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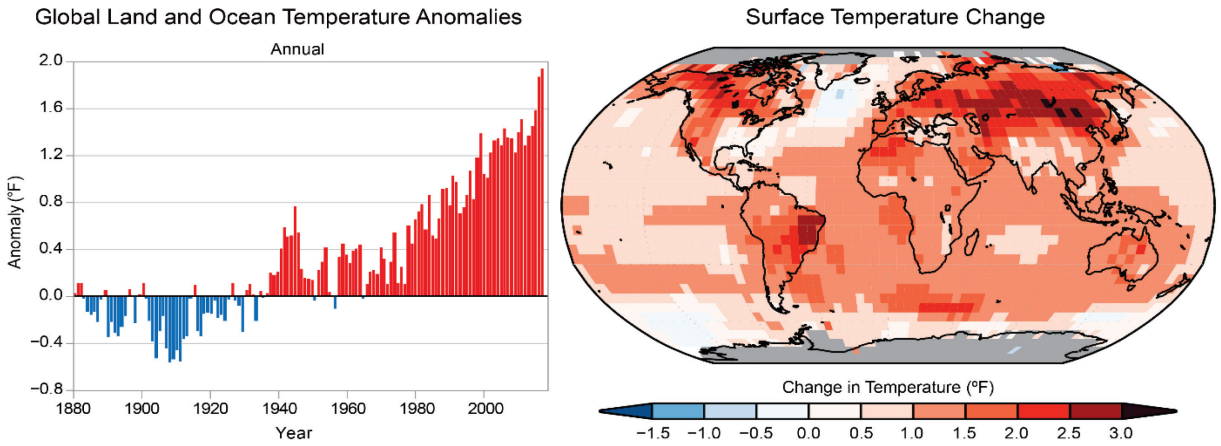
[50] States' Appx. C-18, at 2, USGCRP, Our Changing Planet FY 2017 (footnotes omitted).
[51] *See* 83 Fed. Reg. 43,230.
[52] States' Appx. C-17, at 10, Fourth Nat'l Climate Assessment (emphasis in original).
[53] *Id.* at 13.
[54] *Id.* at 15 and 134.
[55] *Id.* at 14.

Figure 1 (Fourth Nat'l Climate Assessment, at 13).



In looking at four possible future GHG emission scenarios, the USGCRP's Fourth Assessment found that by 2081-2100 the projected range in global mean temperature change is 1.1-4.3°F even under an aggressive climate policy scenario, with ranges of +2.4 to +5.9°F, +3.0 to +6.8°F and +5.0 to +10.2°F under successively higher emission scenarios.[56]

Health Effects. At the local level, the observed rise in temperatures is not evenly distributed, nor are its impacts. First, the rise in temperatures is greater in cities, especially cities with high humidity or larger and denser populations.[57] Increases in the "urban heat island effect" put particular stress on vulnerable populations such as the elderly and children, as well as those who work outdoors or cannot afford air conditioning.[58] "[R]esearch suggests that mortality risk for those 65 or older [from heat waves] could increase ten-fold by the 2090s because of climate change."[59] Second, the number of extreme heat days (exceeding 106.6°F) will increase exponentially in places such as Fresno, California, which could go from 4 such days per year in 2005 to 26 to 43 days per year from 2050-2099.[60]

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[56] *Id.* at 16.
[57] *Id.* at 17.
[58] *See* States' Appx. C-20, at 38-40, California's Fourth Climate Change Assessment, Statewide Summary (2018) (hereinafter "California Statewide Summary").
[59] *See* States' Appx. C-21, at 7, California's Fourth Climate Change Assessment, Key Findings (2018) (hereinafter "California Key Findings").
[60] *Id.*

b. Extreme Weather Event Increase

Scientists are increasingly able to attribute some extreme weather events to climate change.[61] A common theme is that climate change is feeding greater intensity of extreme weather events.[62]

Even before those events, in their 2017 Special Report, the federal government's scientists stated that "[c]hanges in the characteristics of extreme events are particularly important for human safety, infrastructure, agriculture, water quality and quantity, and natural ecosystems. **Heavy rainfall is increasing in intensity and frequency across the United States and globally and is expected to continue to increase.**"[63] In New York State, significant damage to its communities and infrastructure from heavy rains has increased in recent years.[64] For example, in 2014, Long Island, NY received more than 13½ inches of rain—nearly an entire summer's worth—in a matter of hours, breaking the state's rainfall record. That deluge flooded over 1,000 homes and businesses, opened massive sinkholes on area roadways, and forced hundreds of residents to evacuate to safer ground. In 2013, the City of Boulder, Colorado experienced flooding that caused as much as 150 million dollars in damages. In the region, four people died, 1,202 people were airlifted from their homes, and 345 homes were destroyed.[65] And in 2011, Hurricane Irene dumped up to 11 inches of rain on Vermont, impacting 225 municipalities and causing $733 million in damage; the same storm left 800,000 Connecticut residents without power for up to nine days. [66]

Further, in the last two hurricane seasons, the United States has experienced three record setting hurricanes. Hurricane Maria, which hit Puerto Rico on September 21, 2017, is estimated to have cost nearly 3,000 lives and $100 billion in damage.[67] In August 2017, Hurricane Harvey

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[61] *See* States' Appx. C-59, National Academies of Sciences, Engineering, and Medicine. 2016. Attribution of Extreme Weather Events in the Context of Climate Change. Washington, DC: The National Academies Press. https://doi.org/10.17226/21852; *see also* Herring, S. C., N. Christidis, A. Hoell, J. P. Kossin, C. J. Schreck III, and P. A. Stott, Eds., 2017: Explaining Extreme Events of 2016 from a Climate Perspective. *Bull. Amer. Meteor. Soc.*, 98 (12), S1–S157.

[62] *See* States' Appx. C-2 at SPM-4, IPCC 1.5°C Summary for Policymakers.

[63] States Appx. C-17, at 10, 19, Fourth Nat'l Climate Assessment (emphasis in original).

[64] States' Appx. C-49, *Current & Future Trends in Extreme Rainfall Across New York State, A Report from the Environmental Protection Bureau of the New York State Attorney General (Sept. 2014) available at https://ag.ny.gov/pdfs/Extreme_Precipitation_Report%209%202%2014.pdf*

[65] *See* Boulder County, 2013 Flood Recovery, https://www.bouldercounty.org/disasters/flood/2013-flood/ (last visited Oct. 24. 2018).

[66] *See* States' Appx. A, Connecticut Summary (citing Report of the Two Storm Panel Presented to Governor Daniel P. Malloy. Available at http://www.governor.ct.gov/malloy/lib/malloy/two_storm_panel_final_report.pdf (January 9, 2012)). *See also*, States' Appx. A, Vermont Summary (citing https://insideclimatenews.org/news/31082016/five-years-after-hurricane-irene-2011-effects-flooding-vermont-damage-resilience-climate-change).

[67] *See* States' Appx. C-100, Climate Wire, Puerto Rico Marks 1 Year Since Maria With Choirs, Protests, Sept. 21, 2018.

dumped more than 5 feet of rain (33 trillion gallons) on southeastern Texas, the wettest hurricane in United States history according to NASA.[68] Two independent research teams, one from the United States Department of Energy's Lawrence Berkeley National Laboratory, recently released studies identifying a clear anthropogenic climate signal in the torrential precipitation that inundated Houston during Hurricane Harvey, reporting the precipitation was up to 38 percent greater due to climate change.[69] It is estimated that Hurricane Harvey will be the costliest natural disaster in United States history, resulting in approximately $190 billion in total damages or one full percentage point of the nation's gross domestic product. In September 2018, Hurricane Florence broke North Carolina's rainfall record, and in the process has caused the death of more than 30 people and millions of farm animals.[70] Just this month, Hurricane Michael rapidly intensified in the Gulf of Mexico and made landfall on the Florida panhandle with 155-mph winds and a tidal surge of 12 to 14 feet—the highest winds to hit the continental United States since Andrew in 1992.[71]

The federal government's scientists have also concluded that "recent droughts and associated heat waves have reached record intensity in some regions of the United States…."[72] While the science is still evolving regarding the human influence drought trends, there is "much evidence" that human-induced higher temperatures are causing the ground to dry out more severely when there is a lack of rainfall.[73] In short, higher temperatures are drying out the soil under all conditions and making it less resilient during droughts. The drought California experienced from 2012 to 2016 "was the most extreme since instrumental records began."[74] The effects of droughts ripple across the environment and society, stressing drinking water supplies in rural areas, reducing hydroelectric generation, harming agricultural production, increasing the duration and intensity of fire seasons, and facilitating the spread of insect outbreaks that threaten forests and people.[75]

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[68] *See* States' Appx. C-99, Waldman, Scott, *Weight of Rain from Harvey Lowered Texas*, Climate Wire, Sept. 21, 2018.
[69] *See* States' Appx. C-67, Risser M., and M.F Wehner (2017), *Attributable human-induced changes in the likelihood and magnitude of the observed extreme precipitation during Hurricane Harvey*, Geophys. Res. Lett., 44, doi:10.1002/2017GL075888; *see also id.* at C-70, Geert Jan van Oldenborgh et al, *Attribution of extreme rainfall from Hurricane Harvey*, 2017 Environ. Res. Lett. 12 124009.
[70] *See* States Appx. C-99, Waldman, Scott, *Weight of Rain from Harvey Lowered Texas*, Climate Wire, Sept. 21, 2018.
[71] *See* States Appx. C-104, Lee, Mike, *Hurricane Michael: Nearly 300,000 Customers Still Without Power*, Energy Wire, Oct. 16, 2018.
[72] *See* States' Appx. C-17, at 21, Fourth Nat'l Climate Assessment.
[73] *Id.* at 22.
[74] *See* States Appx. C-19, Office of Environmental Health Hazard Assessment, California Environmental Protection Agency (2018), Indicators of Climate Change in California at 98 (hereinafter "California Indicators (2018)").
[75] *Id.* at 98-106.

The number of forest fires in the Western United States is strongly correlated with mean temperatures from March through August.[76] "The October 2017 wildfires in Sonoma and Napa counties devastated the affected communities: 44 deaths, more than 100,000 residents evacuated, and over $9 billion in residential and commercial insurance claims, making them the deadliest and most destructive fires in the State's history."[77] And, California's latest assessment "suggests a 77% increase in mean and up to 178 percent increase in maximum area burned by wildfires (compared to 1961-1990) by 2050, but the actual increases could be substantially more severe because of external factors such as wind that are not yet incorporated."[78] Already, in the first nine months of 2018, the rate of acreage burned in California is over twice that of 2017.[79] A new paper published on October 18, 2018, estimates that "human-caused climate change caused over half of the documented increase in fuel aridity since the 1970s and doubled the cumulative forest fire area since 1984," contributing an additional 4.2 million hectares of forest fire.[80] As the paper notes, "[i]ncreased forest fire activity across the western United States in recent decades has contributed to widespread forest mortality, carbon emissions, periods of degraded air quality and substantial fire suppression expenditures."[81]

At the national level, 2017 was the most expensive year on record for the United States in terms of weather and climate losses, with total costs of approximately $306 billion dollars from only the 16 most costly weather events.[82]

c. Ocean Warming, Acidification, and Sea Level Rise

The effects of climate change on the world's ocean are multidimensional. The ocean is warming in ways that impact the plants and animals that depend on it. This warming is causing thermal expansion of the oceans, which, along with the accelerated melting of land-based glaciers and ice sheets (both from warmer air and ocean water temperatures) is resulting in sea level rise. Increased atmospheric CO_2 absorbed by the ocean is changing its chemistry, making oceans and estuaries more acidic and less able to sustain certain species, including shellfish and corals.[83] In fact, the current rate of ocean acidification is unparalleled in at least the past 66

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[76] *Id.* at 186.
[77] *Id.* at 187.
[78] *See* States Appx. C-20, at 12, California Key Findings; *see also* Westerling, A. L., B. P. Bryant, H. K. Preisler, T. P. Holmes, H. G. Hidalgo, T. Das, and S. R. Shrestha, *2011: Climate change and growth scenarios for California wildfire.* Climatic Change, 109, 445-463, available at doi:10.1007/s10584-011-0329.
[79] *See* http://cdfdata.fire.ca.gov/incidents/incidents_stats?year=2018, last visited Oct. 24, 2018.
[80] States' Appx. C-44, John T. Abatzoglou and A. Park Williams, *Impact of Anthropogenic Climate Change on Wildfire Across the Western U.S. Forests*, Proceedings of the National Academy of Science, vol. 113, no. 42 (Oct. 18, 2018).
[81] *Id.*
[82] States' Appx. C-117, NOAA, Assessing the U.S. Climate in 2017 at 1, available at https://www.ncei.noaa.gov/news/national-climate-201712, last visited Oct. 26, 2018.
[83] States' Appx. C-17, at 364-392, Fourth Nat'l climate Assessment.

million years. Under a higher emission scenario the global average surface ocean acidity is projected to increase by 100% to 150%.[84]

Sea-level rise. The federal government's climate scientists report that:

> "global average sea level has risen about 7-8 inches since 1900, with almost half (about 3 inches) of that rise occurring since 1993. Human-caused climate change has made a substantial contribution to this rise since 1900, contributing to a rate of rise that is greater than during any preceding century in at least 2,800 years. Global sea level rise has already affected the United States; **the incidence of daily tidal flooding is accelerating in more than 25 Atlantic and Gulf Coast cities. Global average sea levels are expected to continue to rise—by at least several inches in the next 15 years and by 1-4 feet by 2100. A rise of as much as 8 feet by 2100 cannot be ruled out.**"[85]

Because of the relationship of the East Coast to the Gulf Stream and melting Antarctic ice sheets, future sea level rise along the East Coast and Gulf Coast will be significantly higher than the global average.[86]

NOAA Sea Level Rise viewer allows the user to visualize a given level of sea-level rise. Below are just a few examples created using NOAA's tool of the expected water levels at high tide given a 4-foot rise in ocean levels.[87]

[Continued next page]

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[84] *Id.* at 364.

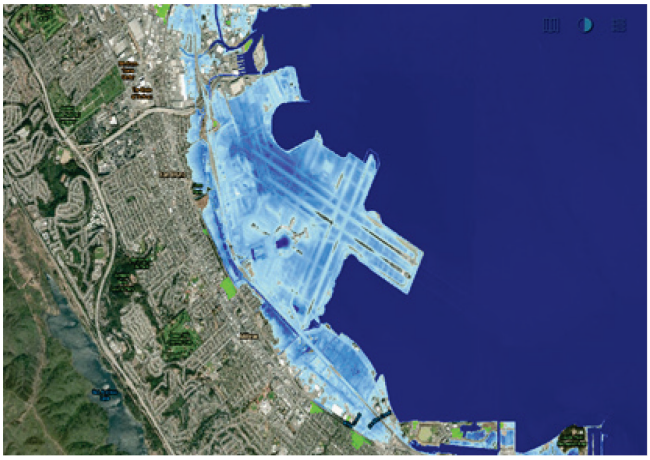
[85] States Appx. C-17, at 10, Fourth Nat'l Climate Assessment (emphasis in original). Analogues from the Paleoclimate record show the potential for even greater sea level rise over multiple centuries. For example, "[d]uring the Plioscene, approximately 3 million years ago, long-term CO_2 concentration was similar to today's, around 400 PPM…. At that time, global mean temperature was approximately 3.6°-6.3°F (2°-3.5°C) above preindustrial, and sea level was somewhere between 66 [plus or minus] 33 feet (20 [plus or minus] 10 meters) higher than today." *Id.* at 141 (footnotes omitted).

[86] *Id.* at 10.

[87] All images taken from NOAA Sea Level Rise Viewer (with option set to show 4 feet of sea level rise), *available at* https://www.climate.gov/maps-data/dataset/sea-level-rise-map-viewer, last visited Oct. 24, 2018 (note shading in light blue on maps shows areas impacted by sea level rise as compared to current conditions).

Miami Beach, FL

San Francisco Airport, San Bruno, CA



Strand Historic District, Galveston, Texas

Mean High Tide High Water Today

With 4 Feet of Sea Level Rise

Fort Mifflin, Philadelphia, PA

Mean High Tide High Water Today

With 4 Feet of Sea Level Rise

Coastal Flooding. Coastal flooding exacerbated by sea level rise increasingly plagues the States and Cities. For example, the Hampton Roads area of Virginia has experienced the highest rates of sea level rise along the East Coast. Ordinary rain events now cause flooding in the streets of Norfolk, including large connector streets disappearing underwater. Naval Station Norfolk, the largest navy base in the world, is currently replacing 14 piers due to sea level rise, at a cost of $35–40 million per pier.[88] In Delaware, over 17,000 homes and almost 500 miles of roadway are at risk of permanent inundation from sea level rise by the end of the century.[89] And the more than 12 inches of sea level rise New York City has experienced since 1900 expanded 2012 Hurricane Sandy's flood area by about 25 square miles, flooding the homes of an additional 80,000 people in the New York City area alone.[90] In Massachusetts, nearly five million people—75% of the population—live in coastal counties that are experiencing storm surge coastal flooding and ecological damage as sea levels rise. In January 2018, storm surge coastal flooding resulted in a high tide in Boston of 15.16 feet, the highest ever recorded.[91] And two months later, a March coastal storm resulted in a 14.67 feet Boston tide (the third-highest on record[92]), damaged 2,113 homes, including 147 that were destroyed, and caused more than $24 million in flooding damage across six Massachusetts coastal counties.[93] In California, staff for the State's Coastal Commission, which oversees development along 1,100 miles of coast, has estimated that the Pacific Ocean will rise by between 1 and 1.9 feet by 2050 and by between 3.4 and 6.8 feet by 2100.[94]

Acidification and Warming. Carbon dioxide emissions into the atmosphere are increasing both ocean water temperatures and the acidity of Atlantic and Pacific Ocean waters, harming

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[88] Section 335 of the National Defense Authorization Act of 2018 (H.R. 2810) requires the Secretary of Defense to submit a report on the vulnerabilities to military installations and combatant commander requirements resulting from climate change, including a listing of the ten most vulnerable military installations for each service based on rising sea tides, increased flooding, drought, wildfires, and other climate change impacts.

[89] *See* States' Appx. A, at A-23, Delaware Discussion.

[90] *Id.* at A-63, New York City Discussion.

[91] *Id.* at A-26, Massachusetts Discussion, citing Martin Finucane, *It's official: Boston Breaks Tide Record*, BOSTON GLOBE, Jan. 5, 2018, *available at* https://www.bostonglobe.com/metro/2018/01/05/official-boston-breaks-tide-record/UPbwDxgF0QXNOWvB9bcQ7L/story.html.

[92] *See* Christina Prignano, *The Noon High Tide Was Bad, but the Midnight High Tide Could Be Worse,* BOSTON GLOBE, March 2, 2018, *available at* https://www.bostonglobe.com/metro/2018/03/02/the-noon-high-tide-was-bad-but-midnight-high-tide-will-worse/m4O1PR8HRIoLsmx3mp2YvO/story.html.

[93] *See* States' Appx. A, at A-26, citing Christian M. Wade, *Baker Seeks Federal Disaster Funds for Storm Damages*, LAWRENCE EAGLE-TRIBUNE, May 1, 2018, *available at* https://www.eagletribune.com/news/merrimack_valley/baker-seeks-federal-disaster-funds-for-storm-damages/article_d2f0c7b4-bd75-5a8b-8a0c-4dedbe44a7b4.html.

[94] *See* States' Appx. C-98, at 18, California Coastal Commission, Recommended Science Updates to the California Coastal Commission Sea-Level Rise Policy Guidance, Sept. 12, 2018; *see also* id. at C-66, Griggs, G et al., Rising Seas in California: An Update on Sea-Level Rise Science. California Ocean Science Trust, April 2017.

aquatic species and disrupting the marine-based economy. In Oregon, ocean waters are now more acidified, hypoxic (low oxygen), and warmer, and such impacts are projected to increase, with a particularly detrimental impact on oysters and other shellfish, which will threaten marine ecosystems, fisheries, and seafood businesses. In Maine, the increasing acidity is inhibiting shell formation in soft-shell clams, oysters, and Maine's world-famous lobsters. Also, the Gulf of Maine is warming faster than 99 percent of the world's ocean waters, and soft-shell clam flats throughout southern and mid-coast Maine have been destroyed by an invasion of non-native green crabs that have expanded their range northward as these waters warm.

d. United States Water Supply Impacts

In the Western United States, the rise in temperatures is impacting the water cycle. Water-cycle impacts have particularly adverse consequences for States and Cities that rely on mountain snowpack for their water supply. For instance, California relies on snowpack in the Sierra Mountains for about a third of the state's annual water supply (as well as other uses).[95] Increases in temperature are causing more precipitation in the Sierras to fall as rain rather than snow, and are increasing the rate at which the snowpack melts during the summer.[96] In Washington's Cascade Mountains, snowpack has already decreased by about 25% since the mid-20th century and is anticipated to decrease even more substantially by the 2040s.[97] In California, during the recent drought, the Sierra snowpack was the smallest in 500 years.[98] Similarly, projections of further reduction of late-winter and spring snowpack and subsequent reductions in runoff and soil moisture pose increased risks to water supplies needed to maintain cities, agriculture, and ecosystems in New Mexico.[99] In Broward County, Florida, water supplies are threatened by rising seas, which drives saltwater contamination into well fields. United States Geologic Survey modeling in collaboration with the County reveals a predicted loss of 35 million gallons per day in water supply capacity by 2060 (40% of Broward's coastal well field capacity), due entirely to additional sea level rise.[100]

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[95] *See* States' Appx. C-17, at 22, Fourth Nat'l Climate Assessment ("Projections indicate large declines in snowpack in the western United States…."); *id.* at 21 ("Northern hemisphere spring snow cover extent, North America maximum snow depth, snow water equivalent in the western United States, and extreme snowfall years in the southern and western United States have all declined, while extreme snowfall years in parts of the northern United States have increased. (Medium Confidence).").

[96] *See* States' Appx. C-20, at 11, California Key Findings; *see also id.* at C-19.

[97] States and Cities' Appx. A, Washington Discussion (citing http://www.governor.wa.gov/sites/default/files/WSI%20factsheet.pdf)

[98] States' Appx. A, California Discussion (citing NOAA, National Centers for Environmental Information: "Multi-Century Evaluation of Sierra Nevada Snowpack," https://www.ncdc.noaa.gov/news/multi-century-evaluation-sierra-nevada-snowpack.).

[99] States' Appx. A, New Mexico Discussion (citing USGCRP, *2014 National Climate Assessment*, at 463 (2014). Available at https://nca2014.globalchange.gov/report/regions/southwest%0D.)

[100] Groundwater monitoring well data is available via https://nwis.waterdata.usgs.gov/nwis/gwlevels. Hydrologic modeling performed by the USGS

e. Harm to Human Health

Climate change endangers human health in numerous ways, from increasing the incidence of heat-related illness and mortality, to air quality impacts that directly impact the lungs and heart, to facilitating the spread of infectious diseases (in addition to the dangers from extreme weather discussed above).

Heat-Related Illness. Premature deaths caused by more frequent and intense heat waves are a pressing public health problem. For example, in Maryland, the Centers for Disease Control and Prevention found that there were twelve heat-related deaths in the state resulting from the heat wave in 2012; yearly premature deaths from extreme heat are expected to more than double that amount for just the city of Baltimore by 2050. In Washington, D.C., the number of heat emergency days (days when the heat index exceeds 95°F) could more than double from the current 30 days per year to 80 days per year by the 2050s under a high-emission scenario. Similarly, in the near future, Chicago will likely experience between 5 to 20 days a year with heat and humidity conditions similar to the 1995 heat wave that caused approximately 750 deaths in the city.

Air quality. Warmer temperatures also increase the formation of ground-level ozone, which impairs lung function and can cause increased hospital admissions and emergency room visits for people suffering from asthma, particularly children. Massachusetts already has the nation's highest incidence of asthma: among children in grades K–8, more than 12% suffer from pediatric asthma, and 12% of the state's adult population suffers from asthma. Similarly, in 2010, nearly a quarter of the children in Philadelphia County had asthma, among the highest rates in the nation. According to the Third National Assessment on Climate Change, under a scenario in which GHGs continue to increase, this would lead to higher ozone concentrations in the New York metropolitan region, driving up the number of ozone-related emergency room visits for asthma in the area by 7.3 percent—more than 50 additional ozone-related emergency room visits per year in the 2020s, compared to the 1990s.[101]

Diseases. Warmer temperatures from climate change have facilitated the spread of infectious diseases. For example, warmer temperatures are contributing to the rise in deer populations in Massachusetts, resulting in loss of underbrush habitat for forest species and the spread of tick-borne diseases like Lyme disease.[102] In Pennsylvania, climate change is expected to increase the prevalence of West Nile disease in the higher-elevation areas and the duration of

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and site-specific engineering calculations reveal recent and predicted loss of storage and compounded flood risk. Model results are not yet published.

[101] *See* U.S. Global Change Research Program, *2014 Third National Assessment on Climate Change*, at 222 (citing Sheffield, P. E., J. L. Carr, P. L. Kinney, and K. Knowlton, 2011: Modeling of regional climate change effects on ground level ozone and childhood asthma. American Journal of Preventive Medicine, 41, 251-257, available at http://download.journals.elsevierhealth.com/pdfs/journals/0749-3797/PIIS0749379711003461.pdf)

[102] *See* States' Appx. A, at A-27, Massachusetts Discussion.

the transmission season.[103] Disease outbreaks threaten the States and Cities' natural resources as well. In California, a majority of the ponderosa pine in the foothills of the central and southern Sierra Nevada Mountains have already died, killed by the western pine beetle and other bark beetles. The increasing threat from these insects is driven in large part by warmer winters and a lengthening summer season attributable to climate change.[104]

Testimony during the three public hearings that EPA and NHTSA held in Fresno, California, Dearborn, Michigan and Pittsburg, Pennsylvania confirmed that these concerns about health-impacts are real. The Agencies heard from a parade of witnesses, including physicians, parents and grandparents, concerned about the effect of the Proposed Rollback on air quality and public health of their patients, their children and themselves. See EPA-HQ-OAR-2018-0283-3659 (posted Oct. 25, 2018). Among others, the Agencies heard from:

- Don Gaede, a physician practicing internal and vascular medicine in Fresno, who testified that in his view the Proposed Rollback would not benefit his "patients who have to breath polluted air," "children who risk growing up with stunted lungs from breathing too much ozone-contaminated air," the "hundreds of thousands of people with asthma in our valley, many of them children," or "elderly COPD patients who end up in the emergency room more often during bad air days." (Fresno Transcript at 79, 81 (Sept. 24, 2018));

- Janelle Lee, an emergency room physician in the Central Valley of California, who testified that "[e]very day, [she] see[s] patients suffer from the effects of air pollution in the emergency room," and that "[b]ad air triggers a cascade of inflammatory responses in our bodies, and we are still learning more each day, on the serious long-term effects that air pollution has on our bodies." (*Id.* at 127-128); and

- Alex Sheriffs, a practicing physician in the central valley and CARB Board Member, testifying in his personal capacity, stated that "[t]he number 1 cause of death … from natural disasters is not from floods or fire or hurricanes or earthquakes; it's actually heat. In our record of – a record-smashing 25 consecutive days over 100 this summer reminds us the direction climate disruption promises for this valley." (*Id.* at 143, 145).

This is a small sampling of the overwhelming plea not to roll back vehicle standards that the Agencies heard at the hearings.

f. Threats to Animal and Plant Species

Biodiversity and ecosystem health. Warming temperatures and changing precipitation patterns are threatening native marine and terrestrial species in the States and Cities. In 2016, the National Park Service "estimate[d] that 35% of animals and plants could become extinct in the wild by 2050 due to global climate change."[105] And, most climate change impact models

[103] *Id.* at A-53, Pennsylvania Discussion.
[104] *Id.* at A-1, California Discussion.
[105] *See* States Appx. C-105, at 2, National Park Serv., "Climate Change Endangers Wildlife" (June 3, 2018) (noting "estimate[s] that 35% of animals and plants could become extinct in the

"indicate alarming consequences for biodiversity, with the worst-case scenarios leading to extinction rates that would qualify as the sixth mass extinction in the history of the earth."[106]

By way of example, warmer water temperatures in Narragansett Bay off Rhode Island are causing many changes in ecosystem dynamics and fish, invertebrate, and plankton populations. Cold-water iconic fish species (cod, winter flounder, hake, and lobster) are moving north out of Rhode Island waters, and warm-water southern species (scup, butterfish, and squid) are becoming more prevalent.[107] A recent study found that GHG-driven warming may lead to the death of 72% of the Southwest's evergreen forests by 2050, and nearly 100% mortality of these forests by 2100.[108] In Washington, Douglas fir accounts for almost half the timber harvested in the State. Under a moderate GHG emissions scenario, Douglas fir habitat is expected to decline 32% by the 2060s relative to 1961–1990.[109] In California, warming temperatures have facilitated the spread of bark beetles blamed for the death of millions of trees in the Sierra Nevada mountains.[110] Climate change will increasingly become a driver of species decline, extinctions, and biodiversity loss across the United States.

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wild by 2050 due to global climate change"), available at https://www.nps.gov/pore/learn/nature/climatechange_wildlife.htm*; see also* Testimony of Dan Ashe, Dir., FWS, Dep't of the Interior, Before the U.S. House of Reps., Comm. on Oversight and Gov. Reform, Subcomm. on Interior, Regarding Barriers to Recovery and Delisting of Listed Species Under the Endangered Species Act of 1973 (Apr. 21, 2016), *available at* https://www.doi.gov/ocl/esa-delisting.

[106] States' Appx. C-97, at 375 Céline Bellard, *et al*., *Impacts of Climate Change on the Future of Biodiversity,* 15 Ecology Letters 365 (2012), *available at* https://onlinelibrary.wiley.com/doi/epdf/10.1111/j.1461-0248.2011.01736.x.

[107] *See* States' Appx. A, Rhode Island Discussion, citing Rhode Island Executive Climate Change Coordinating Council (EC4) Science and Technical Advisory Board (STAB) Annual Report to the Full Council of the EC4 (May 2016), appendix to Rhode Island Executive Climate Change Coordinating Council Annual Report, June 2016, at 33-35, available at http://climatechange.ri.gov/documents/ar0616.pdf.

[108] *See* States' Appx. A, New Mexico Discussion, citing https://www.washingtonpost.com/news/energy-environment/wp/2015/12/21/scientists-say-climate-change-could-cause-a-massive-tree-die-off-in-the-southwest/.

[109] States' Appx. A, Washington Discussion, citing State of Knowledge Report, Climate Change Impacts and Adaptation in Washington State: Technical Summaries for Decision Makers, (December 2013), Climate Impacts Group, University of Washington (State of Knowledge Report), at 7-1; available at https://cig.uw.edu/resources/special-reports/wa-sok/.

[110] *See* States' Appx. C-21, California Statewide Summary at 13.

3. Reducing Vehicle Emissions Is a Critical Component of Any Effort to Mitigate Climate Change

a. Auto Emissions Are a Substantial Source of GHGs, Particularly in the Developed World

Globally, the transportation sector[111] was responsible for the equivalent of 7 billion tons of CO_2 emissions, or 14% of annual global GHG emissions, and 23% of total energy-related CO_2 emissions in 2010 (the latest year for which the IPCC has reported data).[112] The IPCC has cautioned that "without aggressive and sustained mitigation policies being implemented, transport emissions could increase at a faster rate than emissions from the other energy end-use sectors and reach around 12 [billion tons of CO_2 equivalent] by 2050."[113]

The developed world emits the vast majority of GHG emissions from the transportation sector. "Around 10% of the global population account for 80% of total motorized passenger-kilomet[ers] (p-km) with much of the world's population hardly travelling at all."[114] It is developed countries with large vehicle fleets where transportation is responsible for a far higher share of national emissions.

These facts have not been lost on those nations with the largest vehicle markets. Indeed, in the last ten years, recognition of the importance of reducing GHG emissions from light-duty vehicles has led to unprecedented action by 36 countries that comprise 80% of the global vehicle market:

> For passenger cars, when fully implemented, the standards in South Korea, China, the United States, and Canada will cut average GHG emissions values from new passenger vehicles by 40-50% of GHG-equivalent per kilometer compared to the fleet average level when the regulations were introduced. Japan and the European Union would cut GHG emissions by 40% compared to the year when the regulations are introduced.[115]

The graph below provides one example of the degree to which policies reducing vehicle emissions have been pushing in the same direction.

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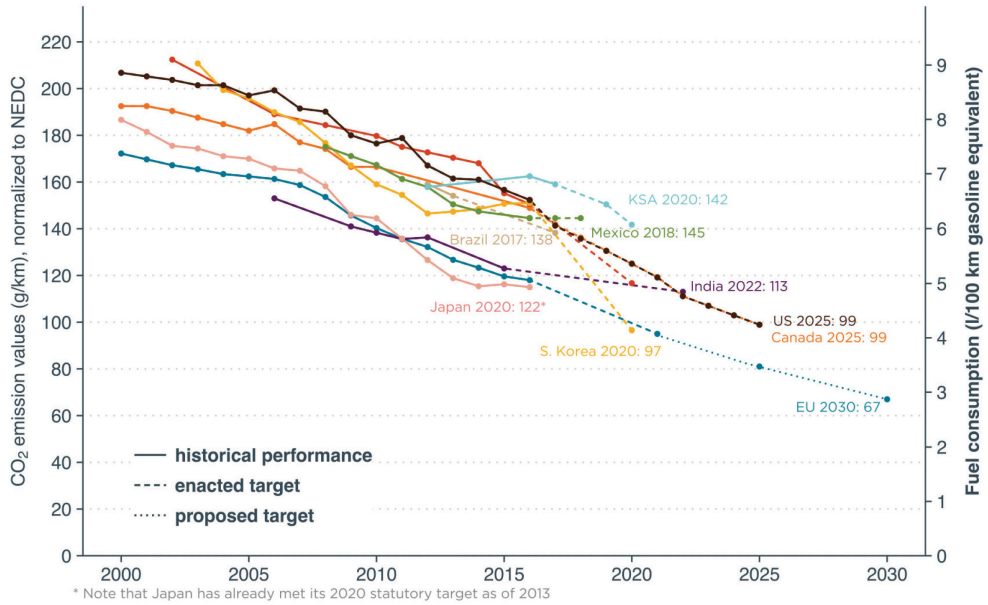
[111] This sector includes road, rail, and marine transportation.
[112] *See* States Appx. C-73, IPCC Climate Change 2014: Mitigation of Climate Change; Chapter 8 at 603 (2014).
[113] *Id.* at 603.
[114] *Id.* at 606.
[115] *See* States' Appx. C-56 at 9, ICCT, 2017 Global Update.

Passenger car CO_2 emissions and fuel consumption, normalized to NEDC[116]



These trends illustrate two points. First, the Proposed Rollback's preferred alternative veers substantially off the course that the rest of the world is following. Second, in many other parts of the world, global automakers will be manufacturing and selling vehicle fleets that exceed EPA's and NHTSA's preferred alternative.

b. The United States' Clean Cars Program Has a Globally Significant Impact on Greenhouse Gas Emissions

As the second largest emitter at present, the United States accounts for approximately 14% of total global CO_2 emissions.[117] "When U.S. CO_2 emissions are apportioned by end use, transportation is the single leading source of U.S. emissions, causing over one-third of total CO_2 emissions from fossil fuels (EPA 2018b)."[118] And light-duty vehicles account for approximately 60% of total United States CO_2 emissions from transportation.[119] That means United States light-duty vehicles account for approximately 3% of total global emissions. While 3% may

[116] *Available at* https://www.theicct.org/chart-library-passenger-vehicle-fuel-economy (last visited Oct. 24, 2018).
[117] NTHSA DEIS at 5-8.
[118] *Id.*
[119] *Id.*

sound small in the abstract, it is not when taken in context. By way of comparison, in 2014, the United States light-duty vehicle fleet's emissions:

- Exceeded the individual country share of global GHG emissions of all but the five largest emitting nations (China, United States, India, Russia and Japan); and

- Exceeded the individual country share of global GHG emissions of major economies such as Germany and Brazil.[120]

Simply put, the light-duty vehicle sector in the United States is among the largest, and most feasible to reduce, target for GHG emission reductions anywhere in the world. Leaving these emissions on the table, as the Proposed Rollback's preferred alternative would do, is to set the global effort to address climate change back significantly, contrary to what EPA and NHTSA would have us believe. It is equivalent to telling all but four or five nations in the world that their share of global emissions is too small to matter. Nothing could be further from reality.

c. Limiting the Rise in Global Mean Surface Temperatures to 3.6°F (2°C) or Lower , or In Fact Any CO_2 Stabilization Level Being Considered, Requires a Continual Decline in New Vehicle Emissions

In 2012, EPA, NHTSA, and CARB took a substantial and significant step, addressing the problem of passenger cars and light-trucks' contribution to climate change head on. The 9 years of standards that EPA and CARB adopted—spanning MY 2017 to 2025—were intended to accomplish:

- 5 years of annual reductions in GHG emissions per mile of 3.6% (cars) and 2.3% (light trucks) (2017-2021), and

- 4 years of annual reductions in GHG emissions per mile of 4.4% per year for both classes of vehicles (2022-2025).[121]

The end effect of the 2012 Clean Car Standards was to put the transportation sector on a trajectory necessary for the United States to do its part to keep the rise in global mean

[120] Compare States' Appx. C-71, at 2-28, Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014, U.S. EPA, Apr. 15, 2016, available at https://www.epa.gov/sites/production/files/2017-04/documents/us-ghg-inventory-2016-main-text.pdf), and *id.* at C-72, List of Countries by 2014 GHG Emissions, available at https://en.wikipedia.org/wiki/List_of_countries_by_greenhouse_gas_emissions (citing to World Resources Institute CAIT Climate Data Explorer (available at http://cait2.wri.org/).

[121] *See* States' Appx. C-79, at S-7, NHTSA 2012 FEIS.

temperatures to below 3.6°F (2°C). EPA's and NHTSA's projected cumulative impacts[122] of the Clean Cars Standards at the time included the following:

- A 22% to 34% reduction of light-duty vehicle GHG emissions by 2100;[123]
- 38.6 to 43.6 billion tons fewer GHG emissions from light-duty vehicles from 2017 to 2100;[124]
- A 3.5 to 4 parts per million (PPM) reduction in atmospheric CO_2 concentration in 2100;[125]
- A 0.025 to 0.029°F (0.014 to 0.016°C) reduction in global mean temperature increase in 2100;[126] and
- A 14.2-mpg increase in fuel economy in 2025 (above a no-action expectation of 34.5 mpg).[127]

It is important to note that while many of these data points project out to 2100, they do not assume continued improvements in reducing GHG emissions post-2025 (or shortly thereafter). But, experience has taught us that policy drivers and concurrent technology development tend to sustain or accelerate further improvements, rather than coming to an abrupt stop.[128] Thus, it would be wrong to conclude, for example, that a reduction of 0.025 to 0.029°F is the limit of what can be achieved from light-duty vehicles for the remainder of this century. Nor, as noted above, is the United States' Clean Cars Program acting in isolation. It is part of a suite of programs across 35 other countries, representing 80% of the global vehicles market. Thus, the temperature-reduction effects of the United States' leadership, resulting emission

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[122] The cumulative impact analysis "assumes overcompliance by some manufacturers through MY 2025 and ongoing fuel economy improvements after MY 2025 with a No Action Alternative under which there are no continued improvements in fuel economy after MY 2016." *See id.* at S-6. Other scenarios examined by NHTSA in 2012 (Analysis A1 and A2 and B1 and B2) made different assumptions about manufacturer behavior that produced slightly lower emissions savings. *Id.* at S-5.

[123] *Id.* at S-47.

[124] *Id.* at 5-98.

[125] *Id.* at S-47-48.

[126] *Id.*

[127] *Id.* at 2-13 (under Analyses A2 and B2).

[128] *See, e.g.*, John A. Alic, David C. Mowery, & Edward S. Rubin, U.S. Technology and Innovative Policies: Lessons for Climate Change, 15-33 (November 2003), *available at* http://www.c2es.org/publications/us-technology-and-innovation-policies-lessons-climate-change; *see also* Linda Argote & Dennis Epple, Learning Curves in Manufacturing, 247 Science 920 (1990); Nicholas A. Ashford & Ralph P. Hall, The Importance of Regulation-induced Innovation for Sustainable Development, 3 Sustainability 270 (2011).

reductions, and ensuing decreases in global warming vehicles emitting less, act in concert with the effects of other nations' programs, compounding the effectiveness of these programs.

With the preferred alternative, EPA would devastate the targeted emissions reductions as indicated in the table below.[129]

Year	Reduction -- Clean Cars Rule	Preferred Alternative
2021	3.6% (cars) 2.3% (light trucks)	0%
2022	4.4% (both)	0%
2023	4.4% (both)	0%
2024	4.4% (both)	0%
2025	4.4% (both)	0%
2026	To be determined	0%

Although the data provided by EPA and NHTSA is both limited and skewed by the fundamentally flawed models discussed in Section III.E. below, the Agencies readily admit that the Proposed Rollback will increase emissions of GHGs. NHTSA and EPA estimate that their preferred alternative would increase national fuel consumption by a half million barrels per day, or 2-3% of total daily consumption (83 Fed. Reg. at 42,986) and increase CO_2 emissions by 7,400 MMT by 2100 when compared to existing standards.[130] Even alternative 7, the "most stringent" alternative presented, is estimated by the Agencies to result in an increase of 1,800 MMT of CO_2 emissions when compared to existing standards.[131]

Indeed, NHTSA's discussion of the effect of the Proposed Rollback on GHG emissions significantly understates the outcome. In order to assess the importance of vehicle emissions, it helps to have a measuring stick. One of the ways in which scientists calculate and express what it will take to hold the increase in temperatures to a certain level is using a "carbon budget." The carbon budget calculates the amount of cumulative GHG emissions from human activity (starting in late 1800s) that provides a two-thirds chance of not exceeding a particular increase in global mean temperatures. The budget is expressed either in billions or "gigatons" of carbon ($GtCO_2$).

[129] States' Appx. C-79, at S-7, NHTSA 2012 FEIS.
[130] NHTSA DEIS, S-18 and Appendix D-18.
[131] *Id.*

In 2018, the IPCC calculated that the world could emit no more than 420 further $GtCO_2$ to retain a two-thirds chance of limiting the global average temperature increase to 1.5°C.[132] The IPCC further estimated that the budget is being depleted by approximately 42 $GtCO_2$ per year. Thus, if global emissions continue at the current pace, the carbon budget will be exhausted in 10 years. Despite the drastic reductions necessary to achieve climate stabilization, the Agencies have instead proposed an action that would increase CO_2 emissions by 8 billion tons between 2021 and 2026. Even assuming these emission estimates are accurate, the Proposed Rollback constitutes a significant depletion of the remaining carbon budget.

The world does not have six years for major GHG emission sources like the United States transportation sector to pause or even reverse needed reductions. Rather, as NHTSA acknowledges: "[t]he emissions reductions necessary to keep global emissions within this carbon budget could not be achieved solely with drastic reductions in emissions from the United States passenger cars and light truck vehicle fleet, but would also require drastic reductions in all United States sectors and from the rest of the developed and developing world."[133] That is precisely why the prior administration committed to putting the United States on a path to decarbonization, reducing national GHG emissions to 17% below 2005 levels in 2020, and 26-28% below 2005 levels by 2025.[134] Many of our States have made their own deeper commitments in recognition of what the science is telling us. Thus, for example: California has committed in statute to reduce its emissions economy-wide by 40% below 1990 levels by 2030; Massachusetts is mandated by statute to reduce its economy-wide emissions at least 80% below 1990 levels by 2050[135]; New York State and New York City have committed to the Paris Climate Agreement goals and to an 80% reduction in GHG emissions by 2050.[136][137]

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[132] *See* States' Appx. C-2, at SPM-16, IPCC 1.5°C Summary for Policymakers.

[133] NHTSA DEIS at 5-30. What NHTSA characterizes as "drastic" others identify as smart and cost-saving. As the IPCC makes clear "[d]elaying additional mitigation increases mitigation costs in the medium to long term. Many models could not limit *likely* warming to below 2°C over the 21st century relative to pre-industrial levels if additional mitigation were considerably delayed." States' Appx. C-73, at 24, IPCC, Climate Change 2014 Synthesis Report, Summary for Policymakers (emphasis in original).

[134] *See* States' Appx. C.-74, United States Nationally Determined Commitment (Mar. 31, 2015).

[135] *See* Massachusetts Global Warming Solutions Act ("GWSA"), MASS. GEN. LAWS ch. 21N, §§ 3(b), 4(a); *See also Kain v. Mass. Dep't Envtl. Prot.*, 474 Mass. 278, 287-88 (2016) (the GWSA GHG emission reduction targets are state law mandates).

[136] *See* https://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/New%20York%20City's%20Roadmap%20to%2080%20x%2050_Final.pdf ; *see also* https://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/1point5AligningNYCwithParisAgrmtFORWEB.pdf.
https://www1.nyc.gov/assets/sustainability/downloads/pdf/publications/1point5AligningNYCwithParisAgrmtFORWEB.pdf

[137] *See* 2015 New York State Energy Plan, available at https://energyplan.ny.gov/.

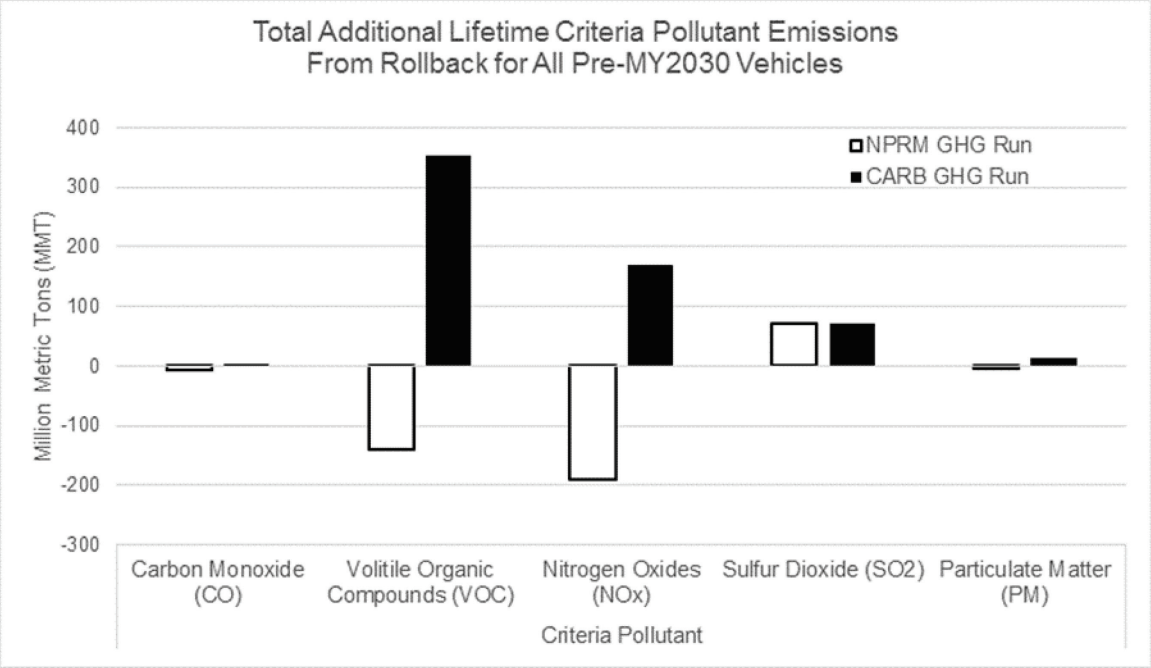
C. The Proposed Rollback Will Increase Emissions of Criteria Pollutants and Air Toxics, and Undermine State Implementation Plans

Under the Clean Air Act, EPA is required to establish National Ambient Air Quality Standards (NAAQS) for six common air pollutants known as "criteria air pollutants:" carbon monoxide (CO), nitrogen dioxide (NO2), ozone,[138] sulfur dioxide (SO2), lead, and particular matter (PM).[139] The NAAQS provide states with achievable goals to protect the health of their residents from emissions of criteria air pollutants. The agencies claim that the Proposed Rollback would not "noticeably impact net emissions of smog-forming or other criteria or toxic air pollutants." 83 Fed. Reg. at 42,996-98. Relying primarily on the CAFE model, the Agencies base this conclusion on their air quality analysis of the Proposed Rollback, which accounts for downstream emissions (i.e., emissions from vehicle tailpipes), upstream emissions (i.e., emissions associated with extracting, refining, and delivering fuel), and emissions associated with increased vehicle miles traveled (VMT) from the rebound effect and from the scrappage model.[140] As detailed in the CARB's comments on the Proposed Rollback and the States' and Cities' comments on the DEIS (which are incorporated by reference), by relying on flawed modeling, NHTSA grossly underestimates the impact of the Proposed Rollback on criteria air pollutants.

In order to evaluate how these flaws may impact the analysis, CARB ran the CAFE model with a few corrected assumptions.[141] The table and figure below demonstrates the significant difference in emission estimates by only partially correcting the inputs and assumptions in the CAFE model:

Impact of Rollback Relative to Existing Standards	**NPRM[142]**	**CARB Run**
Lifetime Effects for All Pre-MY2030 Vehicles		
Total Additional CO Emissions	-6.0 MMT	0.1 MMT
Total Additional VOC Emissions	-140 kMT	353 kMT
Total Additional NOx Emissions	-190 kMT	169 kMT
Total Additional SO2 Emissions	71 kMT	72 kMT
Total Additional PM Emissions	-4.4 kMT	13 kMT

[138] Although vehicles do not directly emit ozone, it is created by a chemical reaction in the presence of sunlight between nitrogen oxides (NOx) and volatile organic compounds (VOCs).
[139] DEIS at 4-1.
[140] The Agencies' conclusions regarding rebound and scrappage are discussed in Section III.E. below.
[141] *See* CARB Comments, Section IX.
[142] PRIA Table 10-83, p. 1282 for criteria pollutant emissions.



As detailed in CARB's comments on the Proposed Rollback, by partially correcting assumptions and turning a flawed scrappage model off, the CAFE model demonstrates that the Proposed Rollback will substantially increase cumulative emissions of the pollutants CO, VOC, NOx, and PM when compared to existing standards. The Agencies' understatement of emission estimates is mostly a result of their unsupportable conclusion that the Proposed Rollback will significantly decrease VMT and thus decrease downstream emissions from vehicle tailpipes. But, in actuality, the Proposed Rollback will not decrease VMT and instead, the Proposed Rollback will increase fuel consumption and thus increase "upstream" emissions associated with extracting, refining, and delivering fuel. Thus, contrary to the agencies assertions, the Proposed Rollback will—quite "noticeably"—increase net emissions of criteria pollutants.

Further, these increases in emissions will undermine state implementation plans (SIPs). A SIP is a federally enforceable plan that identifies how a state will attain and maintain national ambient air quality standards (NAAQS). SIPs must identify both the magnitude of reductions needed and the actions necessary to achieve those reductions in order to meet NAAQS. SIPs also include a demonstration that the area: will make reasonable further progress toward attainment, is implementing reasonably available control technology on all major sources, has a program in place to address emissions from new stationary sources, and meets transportation conformity requirements. An increase in upstream emissions from fuel consumption will have dire implications for states striving to comply with SIPs. For example, in areas such as the South Coast air basin in California, CARB has estimated that the Proposed Rollback would create an additional 1.24 tons per day of NOx emissions.[143] Because of SIP commitments for federal ozone standards, that increase would have to be offset by reducing emissions from mobile sources, which would require working into the region's fleet 1.3 million more fuel-efficient vehicles, or 1 million more zero emission vehicles.[144] And yet, via the Proposed Rollback, the

[143] CARB Comments Section VII.
[144] *Id*.

agencies seek to yank away tools that states, including California, need to get those additional fuel-efficient and zero-emission vehicles into the fleet.

Further, as addressed in the States and Cities comments on the DEIS, the agencies have failed to meet the general conformity requirements under the Clean Air Act. "[A] conformity determination is required where a federal action would result in total direct and indirect emissions of a criteria pollutant or precursor originating in nonattainment or maintenance areas …." 40 C.F.R. § 93.153(b). Here, the Agencies assert that the General Conformity Rule does not apply because the Proposed Rollback will not cause any direct or indirect emissions within the meaning of the rule.[145] Contrary to the Agencies' assertions, a conformity determination is required. First, an increase in criteria pollutant emissions is reasonably foreseeable because the agencies quantified those emissions within the rulemaking process. Second, the Agencies can practically control the emissions because they possess ultimate regulatory authority over standards that govern vehicle operation (the activity that directly causes the emissions). NHTSA's argument that it cannot control how consumers behave (including what vehicles they purchase), or which technologies auto manufacturers decide to use, is baseless. In support of the Proposed Rollback, NHTSA provides projections of future emissions that are founded on assumptions—albeit flawed assumptions—regarding consumer behavior and technological advancement. This belies any argument that future consumer behavior and fuel economy technology are too uncertain to rely upon. NHTSA acknowledges that future emissions are reasonably foreseeable because the underlying activity is not so uncertain as to prevent reasonable future emissions calculations. Finally, the Agencies maintain continuing program responsibility for the emissions because they retain the authority to revise their standards in a way that affects future emission levels. Because the proposed action would result in indirect emissions, the agencies must perform a conformity determination for the nonattainment areas where those indirect emissions exceed the limits prescribed by the Clean Air Act's General Conformity Rule. 40 C.F.R. § 93.153(b).

III. THE PROPOSED ROLLBACK IS UNLAWFUL

EPA's and NHTSA's Proposal to hastily and aggressively roll back the GHG emission reductions and fuel economy standards for MY 2021-2026 light-duty vehicles violates the law in multiple ways. To begin with, the Agencies are running their rulemaking in a manner that fails to comply with the Administrative Procedure Act—failing to fully disclose the data and assumptions on which they have relied in modeling costs and emissions, and denying requests from Congress, States and Cities, and automobile industry representatives for a reasonable extension of time to comment. Further, the Agencies' Proposal contravenes their mandates from Congress under the Clean Air Act and EPCA—two landmark statutes that tasked EPA and NHTSA with weighty responsibilities to protect the public from air pollution and to conserve energy. The Agencies' reinterpretation of those mandates in ways that allow for no incremental improvement in GHG emission reductions or fuel-economy for a period of six years is not credible. Nor have the Agencies provided the "good reasons" required for their reversal of position on factual, technical, or legal issues. This, and their many implausible and unsupportable claims regarding the purported compliance costs, safety impacts, and societal costs of the existing standards, along with their consistent failure to consider evidence that runs

[145] DEIS at 4-14 and 4-15.

counter to their objective, renders the Proposed Rollback arbitrary and capricious. Below, we discuss why the Agencies' Proposal is unlawful.

A. The Applicable Legal Standards

An agency's interpretation of a statute it administers is often reviewed under the framework articulated in *Chevron U.S.A., Inc. v. NRDC*, 467 U.S. 837 (1984). Under that two-step framework, if Congress has spoken directly to the "precise question at issue," then an administrative agency must give effect to Congress's "unambiguously expressed intent." *Id.* at 842–43. Under *Chevron* step one, courts "must reject administrative constructions which are contrary to clear congressional intent." *Id*. at 843 n.9. However, "if the statute is silent or ambiguous with respect to the specific issue," under *Chevron* step two, "reasonable" agency interpretations "are given controlling weight unless they are arbitrary, capricious, or manifestly contrary to the statute." *Id*. at 843. At *Chevron* step two, courts look to "whether the [agency] has reasonably explained how the permissible interpretation it chose is 'rationally related to the goals of the statute.'" *Good Fortune Shipping SA v. Comm'r of Internal Revenue Serv.*, 897 F.3d 256, 261 (D.C. Cir. 2018) (internal quotations omitted). Courts may also consider whether an agency has departed from past practice. *See Northpoint Tech., Ltd. v. FCC*, 412 F.3d 145, 156 (D.C. Cir. 2005) ("A statutory interpretation ... that results from an unexplained departure from prior [agency] policy and practice is not a reasonable one."). *Chevron*'s two-step framework does not apply to all agency interpretations, however. *See United States v. Mead Corp.*, 533 U.S. 218, 226-27 (2001).

Other aspects of agency actions, which do not involve statutory interpretation, are reviewed under the familiar standard from the Administrative Procedure Act: a "reviewing court shall … hold unlawful and set aside" agency action found to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706. Accordingly, an administrative agency must give adequate reasons for its decisions, and "must examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made." *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mutual Automobile Ins. Co.*, 463 U.S. 29, 43 (1983) ("*State Farm*"). An agency action is arbitrary and capricious under the Administrative Procedure Act where, *inter alia*, the agency (i) has relied on factors which Congress has not intended it to consider; (ii) entirely failed to consider an important aspect of the problem; (iii) offered an explanation for its decision that runs counter to the evidence before the agency; or (iv) is so implausible that it could not be ascribed to a difference of view or the product of agency expertise. *Id.*

If an agency reverses course on a prior policy, it is "obligated to supply a reasoned analysis for the change." *State Farm*, 463 U.S. at 42. Further, an agency must "display awareness that it is changing position," show that "there are good reasons" for the reversal, and demonstrate that its new policy is "permissible under the statute." *F.C.C. v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009) ("*Fox*"). An agency must "provide a more detailed justification than what would suffice for a new policy created on a blank slate" when "its new policy rests upon factual findings that contradict those which underlay its prior policy." *Id*.

B. The Agencies' Proposed Rollback Suffers from a Lack of Transparency and Violates Numerous Important Procedural Requirements

The Agencies' effort to roll back the vehicle standards has suffered from a surfeit of significant procedural flaws and a lack of transparency that have infected the process from the start. These violations began with EPA's revised final determination, which disregarded the extensive record assembled by EPA, NHTSA and CARB for the Mid-Term Evaluation ("MTE"), failed to disclose to the public the purported body of "new" information on which EPA relied, and deferred several of the findings required by EPA's own regulation, instead claiming that EPA would belatedly fill in any gaps during the rollback rulemaking process. When EPA and NHTSA issued their Proposed Rollback, the Agencies failed to disclose critical technical information and modeling specifications necessary to adequately inform the public about the Agencies' analyses, assumptions and conclusions, and enable the public to provide informed responses. Despite CARB's September 11, 2018 letter to EPA and NHTSA specifically identifying and requesting the missing information, the Federal Agencies failed to provide the missing information until six weeks after CARB sent its request and only three days before the close of public comment. In some cases, the Agencies failed to provide the missing information at all. EPA and NHTSA compounded these serious procedural omissions when they refused a request by eighteen States to extend the comment period on the Proposed Rollback by an additional 60 days. The Agencies refused similar requests for an extension from CARB, 32 United States Senators, municipalities and government organizations, numerous environmental organizations, a vehicle manufacturers group, other industry groups, and other stakeholders. The Agencies' numerous violations render the entire rulemaking arbitrary and capricious and unlawful, and the Agencies cannot lawfully finalize any rule until these violations are cured.

1. EPA's Revised Determination Was Arbitrary and Capricious and Contrary to Law

As EPA and NHTSA have acknowledged, the Proposed Rollback is predicated, at least in part, on EPA's finding in its April 13, 2018 revised final determination that the current model year 2022-2025 GHG standards are "not appropriate" and "should be revised." 83 Fed. Reg. 16,077 (Apr. 13, 2018) (the "Revised Determination"); *see also* 83 Fed. Reg. at 42,988 (recounting that, following EPA's original January 2017 final determination, "EPA has since concluded … that those standards are no longer appropriate" and "[t]he proposed SAFE Vehicle Rule begins the rulemaking process for both agencies to establish new standards for MYs 2022-2025 passenger cars and light trucks."). As explained below, however, EPA's Revised Determination violated its own regulations and was manifestly arbitrary and capricious and contrary to law. Accordingly, any reliance on the Revised Determination as part of the Proposed Rollback is misplaced, and EPA and NHTSA still must satisfy all of the requirements in the Administrative Procedure Act required when—as is proposed here—an agency reverses course. *Fox Television,* 556 U.S. at 515-16; *Encino Motorcars, LLC v. Navarro*, 136 S.Ct. 2117, 2126 (2016).

a. The Mid-Term Evaluation

In the 2012 Rule, EPA committed to performing a comprehensive mid-term evaluation of the model year 2022-2025 GHG standards. 77 Fed. Reg. at 62,784. EPA intended this process to be "collaborative … and transparent," *id.* at 62,964, and "as robust and comprehensive as that

in the original setting of the [model year] 2017-2025 standards," *id.* EPA committed to basing its decision to retain or revise the standards upon detailed findings on an enumerated list of factors. 40 C.F.R. § 86.1818-12(h). The agency pledged "to conduct the mid-term evaluation in close coordination with [CARB]." *Id.*; *see also id.* at 62,785 (stressing importance of CARB's role).

The foundation of the MTE was the July 2016 draft Technical Assessment Report ("TAR") prepared jointly by EPA, NHTSA and CARB. 77 Fed. Reg. 62,784. The TAR was intended to allow EPA "to examine afresh the issues and, in doing so, conduct similar analyses and projections as those considered in the … rulemaking" originally establishing the standards. *Id.* at 62,965. Importantly, EPA agreed to make its assumptions and modeling "available to the public to the extent consistent with law," *id.* at 62,964, and release the TAR for public comment *before* issuing its determination. 40 C.F.R. § 86.1818-12(h)(2). EPA bound itself to making its final determination based upon the findings and analysis in the TAR and on public comment thereon. *Id.*

In July 2016, after nearly four years of work and hundreds of inter-agency and stakeholder meetings, EPA, NHTSA and CARB issued the TAR.[146] This 1,217-page document assembled data and analysis from a "wide range of sources" including "research projects initiated by the agencies, input from stakeholders, and information from technical conferences, published literature, and studies published by various organizations," including a National Academy of Sciences study "purposely timed to inform the Mid-Term evaluation."[147] For its part, EPA performed "a major research benchmarking program for advance engine and transmission technologies," and studies utilizing the agency's emissions model.[148] NHTSA and CARB also contributed original research.[149] Based on this extensive body of research, the TAR concluded that "a wider range of technologies exist[s] for manufacturers to use to meet the [model year] 2022-2025 standards, and at costs that are similar or lower than those projected" in 2012.[150] EPA subsequently issued a 719-page Technical Support Document that accompanied its November 2016 Proposed Determination and provided additional technical information.[151]

After inviting two rounds of public comments, and performing a detailed review of the record embodied in the TAR and the Technical Support Document as well as the hundreds of thousands of comments it received, EPA issued a final determination in January 2017 in which it concluded that "the record clearly establishes that, in light of technologies available today and [projected] improvements, it will be practical and feasible for automakers to meet the [model year] 2022-2025 standards at reasonable cost that will achieve the significant [greenhouse gas]

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[146] *See* States' Appx. C-40, TAR.
[147] *Id.* at 2-2, 2-4.
[148] *Id.* at 2-2 to 2-3.
[149] *Id.* at 2-3 to 2-10.
[150] *Id.* at ES-2.
[151] States' Appx. C-41, EPA, Proposed Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation – Technical Support Document.

emissions reduction goals of the program."[152] Accordingly, EPA determined that the model year 2022-2025 standards remained "appropriate under section 202(a)(1) of the Clean Air Act."[153] EPA's Science Advisory Board reviewed the 2017 Determination and concluded that the determination was well supported by extensive technological analyses and demonstrated the ability of manufacturers to comply with the existing standards.[154]

Following the change in administration and agency leadership, however, EPA did an about-face. In March 2017, EPA and NHTSA announced that EPA planned to reconsider the 2017 Determination. 82 Fed. Reg. 14,671 (Mar. 22, 2017). In August 2017, EPA reopened public comment on the 2017 Determination and promised that its reconsideration would be "conducted in accordance with the regulations EPA established for the Mid-Term Evaluation." 82 Fed. Reg. 39,552, 39,553 (Aug. 21, 2017). However, EPA stated that it was *not* reopening comment on the TAR, which was the document upon which EPA was required to base its MTE determination. *Id.*; *see* 40 C.F.R. § 86.1818-12(h)(2). On April 13, 2018, EPA published a cursory 11-page decision that withdrew and summarily reversed its 2017 Determination, and instead "conclud[ed] that the standards are not appropriate" and "should be revised." 83 Fed. Reg. 16,077 (Apr. 13, 2018). EPA asserted that a "significant record" of new information "developed since the January 2017 Determination" led the agency to reverse course. 83 Fed. Reg. at 16,078. EPA had not previously disclosed this record to the public, and—unlike its previous practice—EPA did not issue a technical document in support of its determination or provide a response to the public comment it received. Instead, based on a few, scattered pieces of information, most of which were provided by two industry groups during the additional public comment period, and none of which rebutted the massive record EPA had compiled in the TAR and the Technical Support Document, EPA concluded that the existing standards "present challenges for auto manufacturers due to feasibility and practicability," raise "potential concerns" about safety, and would increase consumer costs. *Id.* These conclusions were directly at odds with the voluminous evidence EPA had already assembled, but the agency did not even attempt to reconcile its new position with the existing record. EPA also unlawfully ignored the requirement in the regulation governing the MTE process that EPA set forth in detail its assessment of specific factors—a process that would have required the agency to confront the record—and instead stated that it was deferring several such assessments to the rulemaking it would undertake with NHTSA to revise the standards.

Seventeen states, the District of Columbia, several environmental organizations and two groups of industry petitioners filed petitions challenging the Revised Determination. *See California v. EPA*, D.C. Ct. of Appeals Case No. 18-1114 and consolidated cases. This litigation is still pending.

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[152] States' Appx. C-39, EPA, Final Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation ("2017 Determination") at 29.

[153] *Id.* at 1.

[154] States' Appx. C-68, Alison Cullen, Chair SAB Work Group on EPA Planned Actions for SAB Consideration of the Underlying Science, Memo to Members of the Chartered SAB and SAB Liaisons re "Preparations for Chartered Science Advisory Board (SAB) Discussions of EPA Planned Agency Actions and their Supporting Science in the Fall 2017 Regulatory Agenda," dated May 18, 2018 at B-21 to B-22.

b. The Revised Determination Is Arbitrary and Capricious and Contrary to Law

For several reasons, the Revised Determination is arbitrary and capricious and contrary to law.

First, in its Revised Determination, EPA failed to allow the public to review and comment on the specific information on which it relied in determining that the current GHG standards for model year 2022-2025 vehicles are no longer appropriate. EPA claimed that it based its reversal on a "significant record" of new information "developed since the January 2017 Determination" that purportedly led the agency to reverse course. 83 Fed. Reg. 16,078. It is not clear whether EPA identified the entirety of this "significant record" in its Revised Determination, but if it did, the new record consists of a scant few data points, most of which were provided to the agency by two vehicle manufacturer groups and very little of which was actually new. In either case, the decisive technical "record" was not disclosed to the public until EPA had already made its determination, thus directly violating the requirements in the MTE regulation that the "appropriateness" determination be based on a draft TAR that was made available to the public well in advance of that determination, and on which the public would have the opportunity to comment.[155] 40 C.F.R. § 86.1818–12(h)(2). Instead, in the Revised Determination, EPA disregarded the TAR and relied on allegedly new information on which the public had no opportunity to comment. The MTE regulatory requirements reflected EPA and NHTSA's commitment in the 2012 final rule to a transparent process, one in which the Agencies would make their assumptions and modeling "available to the public to the extent consistent with the law" and allow "appropriate peer review of [the] underlying analysis." 77 Fed. Reg. at 62,964. The Revised Determination, and its process, did not satisfy these requirements or fulfill EPA's commitment to transparency.

In contrast, prior to issuing its 2017 Determination, EPA demonstrably satisfied these requirements for transparency—the agency published the TAR, took public comment on the TAR, issued a detailed Proposed Determination accompanied by a second technical document that totaled over 700 pages, and took an additional round of public comment, all before issuing its determination that the existing standards remained appropriate. The public was fully informed of the technical basis for EPA's decision at every step and was given multiple opportunities to participate in the process. The following year, and contrary to EPA's stated commitment that it would conduct its reconsideration "in accordance with the regulations EPA established for the Mid-Term Evaluation," 82 Fed. Reg. at 39,553, when EPA reversed course and issued a new determination that the standards were no longer appropriate and must be revised, it did so in a summary manner without allowing the public the opportunity to review and comment on the decisive "new" record on which EPA based its reversal.

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[155] Although the industry comments were posted online, they were submitted at the end of the comment period, and it was impossible for the public to review and respond to them prior to the close of comments. Moreover, EPA's reconsideration generated tens of thousands of public comments, and the public could not know which information EPA would rely upon to justify its reversal until the agency published its Revised Determination. Indeed, it still is unclear whether EPA disclosed the entirety of the "new" record on which it based its reversal.

Second, EPA failed to make several of the findings required by its own MTE regulation. That regulation enumerated a list of eight specific factors that EPA was required to analyze when making its final determination, and it further required EPA to "set forth in detail the bases for the determination." 40 C.F.R. § 86.1818-12(h)(1), (4). In its November 2016 Proposed Determination and its 2017 Determination, EPA carefully analyzed these factors in light of the findings and analyses in the TAR and the Technical Support Document and made definitive findings. By contrast, EPA's Revised Determination contains little, or no, actual analysis of the factors, instead stating repeatedly that there is "uncertainty" regarding many of the them, and therefore that those factors should be "more thoroughly assessed" during a subsequent rulemaking phase. *See, e.g.*, 83 Fed. Reg. at 16,082, 16,083, 16,085, 16,086. EPA's decision to defer any genuine analysis of the eight factors until a subsequent rulemaking directly contravenes the structure and requirements established in the 2012 final rule and EPA's MTE regulation, which required EPA to make a determination by no later than April 1, 2018 and simultaneously provide a detailed explanation of its bases for doing so.

Third, the Revised Determination largely ignored the findings and analysis in the TAR and in the Technical Support Document. Indeed, the Revised Determination did not even purport to be based upon the TAR, as required by the MTE regulation. 40 C.F.R. § 86.1818-12(h)(1). The Revised Determination referenced the TAR only seven times, and in none of those instances did it address or meaningfully consider any of the specific findings and analyses contained in the TAR.

Fourth, the Revised Determination's failure to provide the "reasoned explanation" required under the Administrative Procedure Act is especially glaring "in light of the [agency's] change in position and significant reliance interests involved." *Encino Motorcars*, 136 S.Ct. 2117 at 2126. Instead, EPA alluded to a few pieces of "new" data to justify its claim that uncertainty existed regarding the appropriateness of the existing standards, but it never weighed these slim pieces of information against the robust findings and analysis contained in the existing record, and in some cases EPA blatantly ignored the fact that the information on which it relied had actually been considered and analyzed in the TAR and the 2017 Determination. For example, the Revised Determination places much weight on EPA's claim that gas prices had fallen more than anticipated, but the TAR and the 2017 Determination had analyzed the existing standards under various fuel price scenarios—including scenarios with substantially lower fuel prices—and it still determined that the existing standards remained appropriate.[156] Similarly, the Revised Determination claimed that sales of electric vehicles had recently fallen, but this claim entirely disregards the fact that the 2017 Determination had based its appropriateness finding on analysis in the TAR that market penetration of electric vehicles would remain low for many years and that vehicle manufacturers could meet the existing model year 2022-2025 standards predominantly using advanced gasoline vehicle technologies.[157] EPA's utter failure to test its new assumptions against the evidence it already had compiled further demonstrates that its

[156] States' Appx. C-39, 2017 Final Determination at 5; States' Appx. C-40, TAR at 112-36 to 12-41, 12-62 to 12-64, 12-69 to 12-73, 12-77 to 12-79, 13-90, 13-104.
[157] States' Appx. C-39, 2017 Final Determination at 3-4; States' Appx. C-40, TAR at ES-2.

Revised Determination was arbitrary and capricious, and it strongly suggests that the result was preordained and not based on rational agency decision-making.[158]

In sum, EPA's Revised Determination is arbitrary and capricious and should be withdrawn or set aside. In light of EPA's failure to adequately engage with the TAR, the November 2016 Technical Support Document and the rest of the record before EPA at the time it issued its Revised Determination, it is critically important that EPA and NHTSA ensure that any action it now takes regarding the vehicle standards fully take into account this record and EPA's 2017 Determination. In accordance with that record, the Agencies should withdraw the Proposed Rollback and return to the course charted by EPA's decision in the 2017 Determination.

2. The Agencies Failed to Provide Critical Pieces of Information on Which They Relied for the Proposed Rollback and Have Failed to Timely Cure this Omission

EPA's failure to identify and disclose the data on which it relied for the Revised Determination was compounded when EPA and NHTSA omitted several critical pieces of data and information from their August 24, 2018 rollout of the Proposed Rollback and its accompanying documents. On September 11, 2018, CARB sent a letter to the Agencies identifying a dozen categories of missing information as well as places where the Proposed Rollback cited conflicting information and needed clarification. *See* Letter from Ellen M. Peter to Andrew K. Wheeler and Heidi King, dated September 11, 2018 (Docket ID: EPA-HQ-OAR-2018-0283).[159] Given that the Agencies expressly cite or otherwise rely on this information in their Proposed Rollback, it is inexcusable that they did not disclose it at the time they published the Proposed Rollback or, at a minimum, promptly after CARB sent its September 11, 2018 request. Instead, the Agencies waited to respond to CARB's request until October 23, 2018, *six weeks after CARB submitted its request and only three days before the end of the comment period.*[160] The Agencies' egregious and unexplained delay in providing a response has effectively deprived CARB, the States and other stakeholders of the opportunity to meaningfully analyze the missing information and incorporate it into their review and analysis of the Proposed

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[158] Moreover, the "new" data concerning electric vehicle sales was inaccurate. Beginning in mid-2016, electric vehicle sales rebounded and have continued to grow throughout the second half of 2016 and all of 2017 and 2018. For example, domestic sales of plug-in electric vehicles for September 2018 totaled 44,589 vehicles, a 22% increase over the previous month's figure (36,380), and more than double the number sold in September 2017. *See* States' Appx. C-136 & C-179; *see also* Inside EVs, "Monthly Plug-In Sales Scorecard" at https://insideevs.com/monthly-plug-in-sales-scorecard/. Total electric vehicle sales for 2018 are on track to top 366,000 vehicles, an 80% increase over 2017, and nearly the number projected *for 2021* in the TAR. *See id.*; States Appx. C-40, TAR at 4-38.

[159] *See also* Letter from Eighteen States to Andrew K. Wheeler and Heidi King, dated August 27, 2018 (Docket ID EPA-HQ-OAR-2018-0283-0792), at n. 3 (referencing missing information).

[160] States Appx. C-81, Letter from Andrew J. DiMarsico to Ellen Peter, dated October 23, 2018 ("NHTSA Letter"); States Appx. C-82, Letter from John Shoaff to Ellen Peter, dated October 23, 2018 ("EPA Letter").

Rollback. The States have not had the opportunity to fully analyze the information that the Agencies have provided to ensure that it fully addresses the corresponding portions of CARB's request. The Agencies' conduct—especially when coupled with their refusal to grant a reasonable extension of the comment period, as discussed below—renders the entire rulemaking arbitrary and capricious under the Clean Air Act and the Administrative Procedure Act.

Moreover, in several cases the Agencies still have refused to provide the information requested directly. For example, NHTSA directed CARB to contact the Department of Energy's Argonne National Laboratories ("ANL") to obtain a copy of the BatPaC version 3.0 model used by NHTSA to estimate battery costs.[161] Similarly, the Agencies directed CARB to contact IHS Markit to purchase the National Vehicle Population Profile datasets they used in preparing the Proposed Rollback, as well as the data NHTSA used to derive its new statistical model for fatality rates.[162] It is patently infeasible for CARB and the States to contact ANL, IHS Markit, or other third party sources at the last minute, attempt to obtain the BatPaC model, vehicle datasets, and other information, use this information to review the Agencies' analyses, and prepare informed technical comments, and do all of this in the time remaining before the deadline to submit comments—*i.e.*, *within three days*. The Agencies' failure to provide timely information about third party sources and otherwise facilitate the availability of the information they have relied upon in their Proposed Rollback further renders the rulemaking arbitrary and capricious.

In additional instances, the Agencies have refused to provide critical information *at all*. For example, in EPA's response, the agency states that it "is reviewing records that may be responsive to [CARB's] request to determine whether they are appropriate for production, or whether they should be withheld pursuant to statutory exemptions to disclosure."[163] Similarly, with respect to NHTSA's analysis of fatalities related to mass reduction, NHTSA responded that it "intends" to publish a technical summary of the logistic regression analysis and its results "in the near future" and also "intends" to publish the report describing the methodological process by which its results were derived at some undisclosed later date.[164] On that basis, NHTSA's staff counsel stated "I am withholding these records as exempt from the statutory disclosure requirement" because they "contain[] information related to pre-decisional agency deliberation, opinions or recommendations."[165] It is arbitrary and capricious and contrary to law for the Agencies to use exceptions to the Freedom of Information Act as a shield to hide information from the public that the Agencies are relying on as part of the basis for their rulemaking, and to thereby deprive the public of the opportunity to meaningfully participate in the notice and comment process.

It is also not clear whether the Agencies' belated and partial response to CARB's request was made available to other stakeholders and interested parties, and thus whether those parties were granted even the untenably constrained opportunity given to CARB and the States to review the Agencies' response.

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[161] States Appx. C-81 (NHTSA Letter), at 1.
[162] *Id.* at 2-3, 6.
[163] States Appx. C-82 (EPA Letter), at 1.
[164] States Appx. C-81 (NHTSA Letter), at 6.
[165] *Id.*

EPA and NHTSA's failure to publicly disclose all of the missing information in a timely manner so that CARB, the States and other members of the public could meaningfully evaluate the Agencies' modeling, analyses and assumptions and provide informed comments before the close of the comment period constitutes a "serious procedural error." *Conn. Light Power Co. v. Nuclear Regulatory Comm'n*, 673 F.2d 525, 530-31 (D.C. Cir. 1982). The Administrative Procedure Act requires that an agency disclose to the public the technical studies and data upon which it relies in its rulemaking. 42 U.S.C. § 7607(d)(3) (notice of proposed rulemaking shall include "the factual data upon which the proposed rule is based; [and] the methodology used in obtaining and in analyzing the data"); *see also Chamber of Commerce v. SEC*, 443 F.3d 890, 899 (D.C. Cir. 2006) (explaining requirement). The Clean Air Act contains the same requirement. *See* 42 U.S.C. § 7607(d)(3) (requiring EPA to provide notice in a proposed rule of "the factual data on which the proposed rule is based," "the methodology used in obtaining the data and in analyzing the data," and the "major … policy considerations underlying the proposed rule"). Absent such disclosure, the public's ability to participate in the rulemaking process is significantly undermined. Public notice of, and comment regarding, such technical analysis are the "safety valves in the use of … sophisticated methodology." *American Radio Relay League, Inc. v. F.C.C.*, 524 F.3d 227, 236 (D.C. Cir. 2008), quoting *Sierra Club v. Costle*, 657 F.2d 298, 334 (D.C. Cir. 1981). As the D.C. Circuit has made clear, the disclosure of such technical information is a key requirement of the Administrative Procedure Act:

> By requiring the 'most critical factual material' used by the agency be subjected to informed comment, the [Administrative Procedure Act] provides a procedural device to ensure that agency regulations are tested through exposure to public comment, to afford affected parties an opportunity to present comment and evidence to support their positions, and thereby to enhance the quality of judicial review.

Chamber of Commerce, 443 F.3d at 900. EPA and NHTSA have flouted these requirements and impermissibly interfered with the public's ability to "test" the analysis and reasoning underlying the Proposed Rollback. Despite CARB's prompt request made shortly after the issuance of the Proposed Rollback, EPA and NHTSA refused to afford CARB, the States and the other stakeholders with timely access to critical technical data upon which the Agencies relied in this rulemaking. The Agencies' failure to respond to CARB's request is especially egregious given EPA and NHTSA's commitments to collaborate with CARB on the MTE and any potential revision of the standards. 77 Fed. Reg. at 62,624, 62,632, 62,784-85. The Agencies' omissions render the entire rulemaking process arbitrary and capricious and contrary to law. The States hereby request that EPA and NHTSA immediately cure this defect, provide all of the information requested by CARB, and, following that, reopen the comment period for an additional 60 days to allow the States, CARB and others the opportunity to provide additional comments once they have reviewed and analyzed the missing technical information.

3. The Agencies' Delay in Releasing the Transcripts from Public Hearings Violated Procedural Norms and Demonstrated a Lack of Transparency

The Agencies continued to contravene procedural norms and acted without transparency when they inexplicably held back for weeks the transcripts from the three public hearings they held in connection with the Proposed Rollback. Those hearings took place on September 24, 25,

and 26, 2018. On September 24, 2018, a representative of the California Attorney General's Office requested copies of the transcripts during the hearing in Fresno, California, speaking to staff from NHTSA and providing contact information to the court reporters. This request was subsequently confirmed in email correspondence with NHTSA.

The transcripts were certified by the reporters on September 26, 2018 (Pittsburgh hearing), September 27, 2018 (Dearborn hearing), and October 1, 2018 (Fresno hearing), and further review of the transcripts and their metadata indicates that the transcripts were provided to the Agencies by no later than October 1, 2018. Yet the Agencies waited more than three weeks—until October 25, 2018—to post the transcripts to the rulemaking docket.

As a result, the States and other members of the public have had *only a single day* to review over 800 pages of transcripts, which contain valuable testimony that could have led to additional factual research and legal analysis for comments, as well as the submission of additional record materials—which is the legal reason why the Agencies were required to hold the record of these hearings open for 30 days. The only explanation the Agencies offered in response to earlier requests for the transcripts was a vague reference to Agency review. But the court reporters' certification occurred within days of the hearings, and there is no indication either in the posted transcripts, their metadata or in the docket of the Agency requesting any corrections or modifications of any of the transcripts. Their conduct provides another example of a lack of transparency and a disregard for public participation that has attended this entire rulemaking process.

4. EPA Prejudiced the States, CARB, and Numerous Other Stakeholders by Denying Requests to Extend the Comment Period on the Proposed Rollback

On August 27, 2018, eighteen States sent a letter to EPA and NHTSA explaining that, given the breadth, complexity and novelty of the issues raised in the Proposed Rollback, the voluminous but nonetheless incomplete materials accompanying it, and the profound effects the rule would have on the public health and the environment, the States were requesting that the Agencies extend the comment period by 60 days. Such an extension would have been consistent with the Agencies' past practice when dealing with rulemakings of similar significance, scope, and complexity. An extension was particularly necessary in light of the missing data and information identified by CARB.

EPA and NHTSA received seventeen other requests for an extension of the public comment period from a variety of agencies, municipalities, government organizations, environmental groups, industry groups (including the Alliance of Automobile Manufacturers) and 32 United States Senators. Every single one of these letters requested at least a 60-day extension of the comment period. On September 21, 2018, the Agencies issued a letter extending the public comment period by a mere three days to accommodate the requirement of 42 U.S.C. § 7607(d)(5) (EPA must keep record of oral presentation open for thirty days following presentation). The Agencies justified their refusal to grant a longer extension with the assertion that the vehicle manufacturers "will need maximum lead time to respond to the final rule." However, this claim is firmly rebutted by the fact that automakers themselves—through the Alliance of Automobile Manufacturers—requested a 60-day extension of the public comment period for many of the same reasons listed in the States' August 27, 2018 letter. Thus, the

Agencies' refusal to allow a meaningful extension of the public comment period was unjustified and erroneous, and is an additional basis for concluding that the rulemaking is arbitrary and capricious.

5. NHTSA's 15-Page Limit on Public Comment Violates the Administrative Procedure Act and the States' Due Process Rights

In the Proposed Rollback, NHTSA stated that it is imposing a 15-page limit for comments on the Proposed Rollback, but that the page limit does not apply to "necessary attachments." 83 Fed. Reg. at 43,470 (citing 49 C.F.R. 553.21). EPA has not imposed any such limit. To comply with NHTSA's instructions, the States' have summarized their comments in a cover letter that conforms to NHTSA's limitation, and are attaching a more detailed explanation of their comments along with other supporting material. To avoid any ambiguity, however, the Agencies must consider the entirety of the States' comments, including the cover letter and all of the attachments. *See* 5 U.S.C. § 553(c).

To the extent that either or both of the Agencies fail to consider the States' comments in their entirety, such failure would violate the Administrative Procedure Act as well as the States' due process rights. There is simply no basis in the Administrative Procedure Act or elsewhere for NHTSA (or EPA) to impose a page limitation on the States' comments. NHTSA's page limit is an arbitrary and capricious and unlawful constraint on the ability of the public to participate in this rulemaking and to submit "written data, views, or arguments" to the Agencies for consideration. 5 U.S.C. § 553(c). This is especially so here in light of (1) the many complex technical and legal issues addressed in the Proposed Rollback; (2) the significant impact that changes to the federal GHG and fuel economy standards and California's waiver would have on the States, including on their ability to achieve their environmental mandates and/or targets; and (3) the voluminous amount of data and other information issued by the Agencies in connection with the Proposed Rollback.

6. The Agencies' Process Fails to Comply with Multiple Executive Orders

As a separate but related matter, EPA and NHTSA baldly assert that they complied with Executive Order 13132 regarding federalism. 83 Fed. Reg. at 43,476. However, California and the Section 177 States dispute that the Agencies consulted with any of them on this preemption proposal and/or that the Agencies complied with the Executive Order in any other fashion. The Agencies' failure to provide any explanation of how it complied with the Executive Order, or to identify any documents that would provide evidence of the asserted compliance, further deprives Section 177 States and other stakeholders of an adequate opportunity to understand and comment on the proposal. For these reasons as well, the Agencies should abandon this vague, ill-conceived proposal.

The Agencies' claim regarding Executive Order 13132 is all the more ridiculous in the context of its unsupported claims to have complied with a number of other Executive Orders and statutes. For instance, the agencies assert that Executive Order 11990, which concerns protection of wetlands, does not apply because the "agencies are not undertaking or providing assistance for new construction located in wetlands." 83 Fed. Reg. at 43,474. This narrow reading of Executive Order 11990 ignores its requirement that:

> Each agency… shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities… conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

Executive Order 11990 § 1(a)(3), 42 Fed. Reg. 26961. It is almost certainly true, given the vast amount of land devoted to fuel production and distribution, that the proposal affects land use significantly, yet EPA and NHTSA completely ignore the requirements that Executive Order 11990 imposes on agencies for such proposals, including the requirement that "each agency shall consider factors relevant to a proposal's effect on the survival and quality of the wetlands." *Id.* §5. While wetlands are mentioned in the DEIS, the agencies have by no means conducted the analysis required under Executive Order 11990, which requires, for instance, that the agencies consider the proposal's effect on wetland recharge and discharge, and hydrologic-utility resources. *Id.* §5(b).

Similarly, while the agencies claim compliance with Executive Order 13211 on Energy Effects, they do not provide, summarize, or even reference the existence of the Statement of Energy Effects that it requires. *See* Executive Order 13211 §2, 66 Fed. Reg. 28,355. Nor—given NHTSA's failure to analyze any alternative that would have a less damaging effect on energy use by making the standards more stringent (DEIS at 2-1 to 2-9)—can the agencies claim to have sufficiently outlined the "reasonable alternatives to the action with adverse energy effects and the expected effects of such alternatives on energy supply, distribution, and use." *Id.* at §2(b)(ii). Just as it is flawed to respond to NEPA by examining only the current standards and standards that are less stringent, it is unreasonable to "comply" with an executive order demanding consideration of "reasonable alternatives" by using the same analysis.

Indeed, because of the numerous deficiencies in EPA and NHTSA's analysis, much of the Agencies' purported "compliance" with executive orders and other laws is deficient. For instance, as is discussed elsewhere, the Agencies' claim the emissions reductions that will be achieved under the existing standards are not sufficiently large to cause an appreciable reduction in climate harms to be worth undertaking. 83 Fed. Reg. 42986, 42996-42997; *see also* Section II.B. The Agencies apply similar logic in their statements of compliance with the Endangered Species Act (ESA) and the National Historic Preservation Act, stating that this is not the type of action that would affect "historic properties" and that there is no ESA consultation required because the proposal alone is "not likely to jeopardize the continued existence" of endangered species or their habitat. *See* 83 Fed. Reg. at 43473-74. It is clear that the increased emissions from the Proposed Rollback will encourage further damage to historic monuments, endangered species, or critical habitat.[166] The Agencies cannot pretend to have complied with their

[166] For evidence regarding potential damage to endangered species and their habitat, we need go no further than the agencies' own documents. *See e.g., DEIS at S-20* ("Changes in key habitats (e.g., increased temperatures, decreased oxygen, decreased ocean pH, increased salinization) and reductions in key habitats (e.g., coral reefs) may affect the distribution, abundance, and

requirements under these executive orders and statutes while adopting this kind of flawed analysis.

C. EPA's Proposed Rollback Contravenes the Clean Air Act and Is Arbitrary and Capricious

Section 202(a)(1) of the Clean Air Act states that "the Administrator shall by regulation prescribe (and from time to time revise) … standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles …, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." 42 U.S.C. § 7521(a). In this proposal, EPA acknowledges that once it finds that GHGs cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare, Clean Air Act Section 202(a) requires EPA to issue standards to reduce these emissions. 83 Fed. Reg. at 43,228 ("[T]he goal of these standards is to reduce these emissions that contribute to climate change."). Indeed, "EPA's obligation to do so is mandatory." 83 Fed. Reg. at 43,227, citing *Coalition for Responsible Regulation,* 684 F.3d at 114; *Mass. v. EPA,* 549 U.S. at 533.

EPA has found that GHG emissions from vehicles endanger public health and welfare (74 Fed Reg. 66,496) (Dec. 15, 2009) and has not proposed to reconsider that finding here.[167] Nor could EPA reasonably propose to do so, given the sizable and increasing impacts climate change is already having in our States, and in the Nation as a whole, and given the substantial contributions of the transportation sector to the emissions that are causing those impacts. *See* Section II.B. EPA acknowledges its duty to regulate GHG emissions from vehicles in order to reduce the threats posed by those emissions. *See* 83 Fed. Reg. at 43,227.

Nonetheless, EPA proposes to *increase* the very emissions the Clean Air Act requires it to *reduce*. With its preferred alternative, EPA proposes to replace existing standards that require significant year-on-year reductions with standards that require *zero* year-on-year reductions, increasing GHG emissions by 872 million metric tons. 83 Fed. Reg. at 43,230; PRIA at 127. In fact, *all* of the proposed alternatives would, by EPA's own admission, *increase* GHG emissions from light-duty vehicles, as compared to leaving the existing standards in place. 83 Fed. Reg. at

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productivity of many marine species."). The evidence regarding historic buildings is similarly strong. *See, e.g.,* Union of Concerned Scientists, National Landmarks at Risk, Executive Summary, https://www.ucsusa.org/sites/default/files/legacy/assets/documents/global_warming/National-Landmarks-at-Risk-Executive-Summary.pdf (2007) (detailing threats from climate change to dozens of national landmarks, including historic sites).

[167] EPA has since reaffirmed the basis for its endangerment finding. *See e.g.,* 80 Fed. Reg. 64510-01, 64519 (Oct. 23, 2015) ("the 2009 Endangerment Finding, the USGCRP NCA3, and multiple NRC assessments have projected future rates of sea level rise that are 40 percent larger to more than twice as large as the previous estimates from the 2007 IPCC 4th Assessment Report due in part to improved understanding of the future rate of melt of the Antarctic and Greenland Ice sheets…. These assessments and observed changes make it clear that reducing emissions of GHGs across the globe is necessary in order to avoid the worst impacts of climate change, and underscore the urgency of *reducing emissions now*.") (emphasis added).

43,230. EPA's Proposed Rollback—including all of the alternatives, except the no-action alternative—is unlawful.

Indeed, EPA, the agency empowered and required under the Clean Air Act to reduce emissions from a wide variety of sources, appears to assume that it need not take steps that could help keep atmospheric concentrations below catastrophic levels. *See* 83 Fed. Reg. at 42,997. Essentially, EPA appears to believe that its proposal to *increase* GHG emissions can be justified because the problem of atmospheric concentrations is so large and the increases EPA admits its action will cause are, in EPA's view, "relatively small." *Id.* This throwing up of its hands is wholly inconsistent with EPA's statutory duty under the Clean Air Act, particularly since the statute expressly recognizes the importance of incremental reductions in pollution.

In addition, EPA has not proposed to make, and cannot support, the requisite finding under section 202(a)(2) of the Clean Air Act—that rolling back the existing standards is "necessary to permit the development and application of the requisite technology." Indeed, EPA concedes that most or all of the requisite technology is already in use today and does not discuss, let alone provide evidence to support, any findings as to how the substantial (even unprecedented) additional lead time EPA's proposals would provide is "necessary to permit the development and application of the requisite technology." Put simply, EPA's proposal is unlawful because it is entirely unmoored from Section 202(a)'s required finding. *See Mass. v. EPA,* 549 U.S. 497.

EPA has also failed to adequately explain the myriad departures in this proposal from the agency's prior positions. For example, in prior versions of the rule, EPA emphasized the importance of obtaining "very significant reductions in emissions of GHGs from the industry as a whole," and it evaluated alternatives that were more stringent than its proposed standards, not just alternatives that were less stringent. 75 Fed. Reg. 25,324, 25,416 (May 7, 2010); *see also id.* at 25,404 ("EPA therefore evaluated two sets of alternative standards, one more stringent than the promulgated standards and one less stringent.").

EPA's proposal is also unlawful because EPA shirked its responsibility to properly weigh the relevant factors in contravention of the Clean Air Act's text and purpose. Specifically, EPA gave essentially no weight to the factors Congress required it to consider—namely, the volume of dangerous air pollution and the need to continue to drive innovation in pollution control technology—abdicating its statutory duty to protect the American people from the devastating impacts of climate change.

EPA acknowledges that its duty to promulgate these emission standards derives from "a statutory obligation wholly independent of DOT's mandate to promote energy efficiency" and that "EPA has no discretion to decline to issue greenhouse gas standards under section 202(a) or to defer issuing such standards due to NHTSA's regulatory authority to establish fuel economy standards." 83 Fed. Reg. at 43,227, citing *Mass. v. EPA*, 549 U.S. at 532; *Coalition for Responsible Regulation*, 684 F.3d at 127. Yet, that is essentially what EPA proposes here. EPA appears to have deferred improperly to NHTSA's analysis for its fuel economy standards and, in any event, relies on an analysis that used fundamentally flawed and unjustified modeling and assumptions to support a rollback of emission standards EPA admits are currently technologically feasible.

EPA's proposal is unlawful and should be withdrawn. At a minimum, the existing standards should be left in place, but EPA should also consider whether to make the standards *more* stringent, not *less*, just as it has done in prior proposals. *See* 2017 Final Determination at

29-30 ("[T]he technological development of advance gasoline vehicle technologies has surpassed EPA's expectations when we initially adopted the standards.")

1. EPA Did Not Propose to Make the Requisite Finding under Clean Air Act Section 202(A)(2) That It Is "Necessary" to Roll Back the Standards, Let Alone to Freeze Them for Six Years, in Order "to Permit the Development and Application of the Requisite Technology"

Clean Air Act section 202(a)(2) provides that standards promulgated under Section 202(a)(1) "*shall* take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period." 42 U.S.C. § 7521(a)(2) (emphasis added). EPA characterizes this as a constraint on its authority. *See e.g.,* 83 Fed. Reg. at 43,227 (standards are "to take effect only after" sufficient lead time). And the statute does, in fact, require EPA to determine "that the technology needed for compliance will be available when the standards take effect." *NRDC v. EPA*, 655 F.2d 318, 337 (D.C. Cir. 1981). But this statutory language is not only a constraint; it, along with Section 202(a)(1), is also very clearly a mandate—that EPA's standards *shall* take effect after the period the agency has determined is necessary for the development and application of the technology.

Here, EPA failed to propose a finding that it is "necessary" to freeze the standards (maintaining the model year 2021 standard for six years), or even to roll back the standards at all, in order to "permit the development and application of the requisite technology." *See* 42 U.S.C. § 7521(a)(2).

Critically, EPA admits that "[t]he majority of the[] [requisite] technologies have already been developed, have been commercialized, and are in-use on vehicles today." 83 Fed. Reg. at 43,229. EPA goes on to find that technology availability, development and application are "not necessarily a limiting factor in the Administrator's selection of which standards are appropriate[.]" 83 Fed. Reg. at 43,229.

Given these statements, it is perhaps not surprising that EPA fails to propose a finding that six years (or any other amount of lead time) is "*necessary* to permit the *development and application* of the requisite technology, giving appropriate consideration to the cost of compliance within such period." 42 U.S.C. § 7521(a)(2) (emphasis added). In fact, EPA treats this statutory requirement to make a finding not as a mandatory predicate to setting emissions standards, but as one of several factors it may consider when setting standards under section 202(a). But a finding required by statute is not optional food for thought. *North Carolina v. EPA,* 531 F.3d 896, 910 (D.C. Cir. 2008), citing *Whitman v. Am. Trucking Ass'ns* (2001) 531 U.S. 457. ("All the policy reasons in the world cannot justify reading a substantive provision out of a statute.")

EPA pays lip service to its statutory mandate, asserting repeatedly that it considered "the necessary technology and associated lead-time." 83 Fed. Reg. at 43,229, 43,230, 43,231. EPA even claims it "is afforded considerable discretion under section 202(a) when assessing issues of technical feasibility and availability of lead time to implement new technology." 83 Fed. Reg. at 43,227. Yet, there is literally no discussion of the need for additional lead time, or of any benefits that would derive from additional lead time. There is, thus, neither a proposed finding

that this additional lead time is "necessary," as required by Section 202(a)(2), nor a basis that could support such a finding. *See Bluewater Network v. EPA,* 370 F.3d 1, 21-22 (D.C. Cir. 2004) ("We can defer to the Agency's prediction of the feasible pace of implementation only if it has adequately explained the basis of that prediction.").

EPA's failure to propose a finding that it is "necessary" to provide additional lead time also flies in the face of congressional intent. Congress "expected [EPA] to press for the development and application of improved technology rather than be limited by that which exists." *NRDC*, 655 F.2d at 328, citing S. Rep. No. 91-1196, at 24 (1970) (other citations omitted). Here, in contrast, EPA proposes to adopt standards that would ossify technology deployment because, by EPA's own admission, its preferred standards require only "levels similar to what auto manufacturers are selling today." 83 Fed. Reg. at 43,231. And, even its most stringent alternative (other than the no-action alternative) would, by EPA's own analysis, require less than sixty percent of the deployment than the existing standards would require. *Id.* at 43,229. Given EPA's concessions that the requisite technology exists, all of these weaker-than-existing alternatives, and especially the preferred alternative, contravene the congressional intent of Section 202(a) as reflected in its text.

Notably, EPA admits that it *may* set technology-forcing standards under Section 202(a) where appropriate. 83 Fed Reg at 43,228. It is hard to imagine a situation in which that would be more appropriate than where the state of the Earth's climate is at stake. 80 Fed. Reg. 64,510, 64,519 (Oct. 23, 2015) ("[O]bserved changes make it clear that reducing emissions of GHGs across the globe is necessary in order to avoid the worst impacts of climate change, and underscore the urgency of *reducing emissions now*.") (emphasis added). Stopping far short of technology-*forcing*, EPA is proposing technology-*flatlining*—settling for current deployment levels of already existing technology. This cannot be reconciled with the statutory text or congressional intent.

EPA simply has not proposed, and cannot propose, a finding that it is "necessary" to allow six or more years for the "development and application of the requisite technology" such that the standards previously found by the Agency to be both technologically and economically feasible, as well as necessary to help mitigate the effects of climate change, are no longer any of these things. *See* 42 U.S.C. § 7521(a)(2).

2. EPA's Discussion of Costs Does Not Constitute a Proposal to Make the Finding Required by Section 202(a)(2)

Rather than making the finding required by Section 202(a), EPA attempts to justify the Proposed Rollback on its "particular consideration" for effects it claims will develop under the existing standards, specifically "high projected costs" and "the impact of the standards on vehicle safety." 83 Fed. Reg. at 43,231. As discussed elsewhere in these comments, EPA and NHTSA's analyses of both costs and safety impacts are so heavily flawed as to be completely unreliable. *See* Sections III.F.1., III.F.2. In fact, there is no reliable reason to believe that the existing GHG standards and the existing and augural fuel economy standards would have any negative impacts on safety or would render cleaner, more fuel-efficient cars cost-prohibitive. *Id.*

Relevant here, EPA's discussion of costs does not constitute a proposal to find, or a basis to find, that any of the weaker-than-existing proposed alternatives reflect "necessary" lead time "giving appropriate consideration to the cost of compliance within such period." For one thing,

"Section 202's 'cost of compliance' concern" is "juxtaposed … with the requirement that the Administrator provide the requisite lead time to allow technological developments." *MEMA I*, 627 F.2d at 1118. Thus, "cost of compliance" in Section 202(a) "relates to the timing of a particular emission control regulation rather than to its social implications." *Id.* As described above, the proposal contains *no* discussion of the relationship between timing and costs of compliance, meaning EPA has in no way proposed to find that its proposed lead-time is required with respect to cost of compliance concerns. In addition, EPA's attempt to treat societal implications as a statutory factor contravenes the text and precedent.

Further, in its reference to "cost of compliance" in Section 202(a), "Congress … sought to avoid doubling or tripling the cost of motor vehicles to purchasers." *MEMA I*, 627 F.2d at 1118. And EPA, itself, has previously acknowledged that the costs of its Section 202(a) standards may lawfully be quite high, pointing out that it does not owe protection to manufacturers or consumers from absorbing costs associated with obtaining necessary emissions reductions, and that "very significant reductions in emissions of GHGs" is of paramount concern under the statute. *See* 75 Fed. Reg. at 25,416 ("EPA [is not] legally required to *preserve* a certain product line or vehicle characteristic…. In this rulemaking, EPA has consistently emphasized the *importance of obtaining very significant reductions in emissions of GHGs* from the industry as a whole[.]") (emphasis added).

Here, EPA estimates (albeit erroneously) that the existing standards would increase per-vehicle costs by $2,260 in model year 2030 (the maximum cost increase year).[168] 83 Fed. Reg. at 43,229. EPA notes only that "these costs are considerably larger than EPA projected in 2012." *Id.* EPA has not proposed to find, and cannot propose to find, that these costs would double or triple the cost of motor vehicles. (And, even if costs lower than those that would double or triple vehicles costs could support a need for additional lead time, or even a finding of technological infeasibility, in other factual contexts, there is no discussion, let alone any evidence, in this proposal that could support any such finding; nor has the agency proposed such a finding.) EPA, therefore, cannot rely on these cost assessments to support any "necessary" finding under Section 202(a), particularly where it has not proposed any such finding and where it has not discussed these costs in the context of need for additional lead time.

EPA itself acknowledges, "'the [s]ection 202(a)(2) reference to compliance costs encompasses only the cost to the motor-vehicle industry to come into compliance with the new emissions standards.'" 83 Fed. Reg. at 43,227 (quoting *Coalition for Responsible Regulation*, 684 F.3d at 128). EPA offers no explanation or argument as to how any of the other factors it purports to rely on (for example, "consumer choice") could be considered a basis for the requisite "necessary" finding under Section 202(a)(2). *Cf. International Harvester Co. v. Ruckelshaus*, 479 F.2d 615, 640 (D.C. Cir. 1973) ("as long as feasible technology permits the demand for new passenger automobiles to be generally met, the basic requirements of the Act would be satisfied, even though this might occasion fewer models and a more limited choice of engine types").

Finally, EPA's "cost of compliance" analysis rests, to a large degree, on its observation that burdens will be reduced by less stringent standards. 83 Fed. Reg. at 43,229 ("Less stringent

[168] This contention is wholly unsupported. *See* Section III.E.1.a. below; Expert Report by H-D Systems, attached to CARB Comments (Review of Technology Costs and Benefits Utilized in the Proposed SAFE Rule (Oct. 2018) (hereinafter "H-D Report").

standards would be less burdensome."). But Section 202(a)(2) reflects Congress' clear willingness, and even intent, to impose some burdens on auto manufacturers, and on consumers, to advance the objective of reducing harmful air pollution. *MEMA I*, 627 F.2d at 1118 ("Every effort at pollution control exacts social costs. Congress, not the Administrator, made the decision to accept those costs.") And, of course, any regulatory rollback could arguably be "less burdensome." EPA's simplistic truism is not a basis for the required finding that EPA's proposed lead time is necessary to allow technology to develop, giving proper consideration to the cost of compliance.

EPA has entirely failed to propose, and cannot make, the finding required by Section 202(a)(2)—the very section EPA claims authorizes this action. EPA's proposal is inconsistent with the Agency's prior recognition of the "limited flexibility" Section 202(a)(2) affords it. 77 Fed. Reg. at 62,627, *citing Coalition for Responsible Regulation* v. *EPA,* No. 09–1322 (D.C. Cir. June 26, 2012) slip op. p. 41 (non-discretionary duty in Section 202 (a)(1) and limited flexibility available under Section 202 (a)(2)).

The proposal is unlawful and should be withdrawn.

3. EPA Has Not Adequately Explained Its Change in Course from Its Prior Rules, from the Draft TAR It Jointly Authored with NHTSA and CARB, or from Its 2017 Final Determination

EPA has failed to adequately explain the myriad departures in this proposal from the Agency's prior positions. *See also* Sections I.C., III.B.

First, when it adopted the existing standards, EPA emphasized the importance of obtaining "very significant reductions in emissions of GHGs from the industry as a whole." 75 Fed. Reg. at 25,416. EPA has elsewhere also acknowledged the "urgent" need to reduce GHG emissions. *See e.g.*, 80 Fed. Reg. 64510-01, 64519 (Oct. 23, 2015) ("the 2009 Endangerment Finding, the USGCRP NCA3, and multiple NRC assessments … and observed changes make it clear that reducing emissions of GHGs across the globe is necessary in order to avoid the worst impacts of climate change, and underscore the urgency of *reducing emissions now*.") (emphasis added). Here, in contrast, EPA proposes to *increase* those emissions. EPA has offered no justification for this change of course; indeed, the agency does not even acknowledge this change in policy, maintaining that "the goal of these standards is to reduce these emissions that contribute to climate change." 83 Fed. Reg. at 43,228. EPA does not explain how any of its proposed alternatives further that goal or why that goal should be different now than it was in 2012 or 2017. Nor can EPA so explain, given the air-pollution-reduction and technology-driving objectives of the Clean Air Act and given that the scientific consensus on climate change is that we need to drastically do *more* to reduce GHG emissions, not less. Indeed, EPA does not even acknowledge its change of policy. *See Fox Television,* 556 U.S. at 515 ("An agency may not … depart from a prior policy *sub silentio*."); *State Farm*, 463 U.S. at 43 (EPA entirely failed to consider an important aspect of the problem).

Second, and related, when EPA adopted the existing standards, it evaluated alternatives that were more stringent than the rule in place, not just alternatives that were less stringent. *Id.* at 25,404. As noted above, EPA has taken the opposite approach here—considering only alternatives dramatically less stringent than the existing standards. Again, EPA has neither acknowledged nor justified this change in course.

Third, EPA proposes to dramatically roll back the prior standards which were previously set on a trajectory of increasing stringency. Those increasingly stringent standards were previously found by EPA in 2010 and 2012 to be practical, feasible, and ultimately necessary to mitigate the effects of climate change:

> Under section 202(a), EPA is called upon to set standards that provide adequate lead time for the development and application of technology to meet the standards. EPA's standards satisfy this requirement given the present existence of the technologies on which the rule is predicated and the substantial lead times afforded under the proposal (which by MY 2025 allow for multiple vehicle redesign cycles and so affords opportunities for adding technologies in the most cost efficient manner, see 75 FR 25407). In setting the standards, EPA is called upon to weigh and balance various factors, and to exercise judgment in setting standards that are a reasonable balance of the relevant factors … In summary, given the technical feasibility of the standard, the cost per vehicle in light of the savings in fuel costs over the lifetime of the vehicle, the very significant reductions in emissions and in oil usage, and the significantly greater quantified benefits compared to quantified costs, EPA is confident that the standards are an appropriate and reasonable balance of the factors to consider under section 202(a).

77 Fed. Reg. at 62,777.

EPA very recently confirmed these findings in 2017. See 2017 Determination at 29 ("[T]he record clearly establishes that, in light of technologies available today and improvements we project will occur between now and MY 2022-2025, it will be practical and feasible for automakers to meet the MY 2022-2025 standards at reasonable cost that will achieve the significant GHG emissions reduction goals of the program, while delivering significant reductions in oil consumption and associated fuel savings for consumers, significant benefits to public health and welfare, and without having material adverse impact on the industry, safety, or consumers.") And, as discussed in Section III.C.1.b., the Agency's purported withdrawal of this determination was invalid.

EPA has not sufficiently justified its departure from these well-supported and well-reasoned previous analyses and findings. *See* Section III.F. below ("The Agencies' Proposed Rollback Relies on a Technical Analysis that is Arbitrary and Capricious"); *Fox Television,* 556 U.S. at 515-16; *Encino Motorcars*, 136 S.Ct. at 2126 ("explanation fell short of the agency's duty to explain why it deemed it necessary to overrule its previous position").

Fourth, an additional policy departure left unexplained by EPA is its substantially revised position on what compliance costs are considered too high to support Section 202(a) emissions standards. As outlined in Section III.F.1.a. below, in 2016, NHTSA and EPA found that under the existing standards, the costs to comply with the model year 2025 standards compared to model year 2021 standards would be approximately $895 to approximately $1.174 per vehicle.[169] Their new cost estimate of $2,260 per vehicle (83 Fed. Reg. at 43,229) is based on unexplained

[169] *See* States' Appx. C-40, TAR at ES-8.

changes in assumptions, but in addition to the lack of transparency behind the cost figures, EPA fails to sufficiently explain from a policy perspective why a potential increase in compliance costs of $1,365 are so prohibitively high that the current standards must be flat-lined, even in the face of burgeoning climate impacts.

Fifth, in its 2010 light-duty rule, EPA concluded "the rule is estimated to have a measurable impact on world global temperatures." 75 Fed. Reg. at 25,488. Here, EPA proposes to find the opposite—that the impact of rolling back the existing standards will be "minimal." 83 Fed. Reg. at 42,996. Again, EPA has neither acknowledged nor explained this change in position.

And, finally, EPA has made several technical departures from its prior rulemakings setting GHG emissions standards. As outlined in Section III.F.1. below, EPA has forgone the use of models that it relied on for prior standards and relied, instead, on NHTSA's dramatically revised CAFE model. In past proceedings relevant to this rulemaking, EPA used its peer-reviewed OMEGA model to estimate how manufacturers could add technologies to vehicles to meet a fleet-wide GHG standard. CARB Comments at 167. EPA developed its OMEGA model as part of EPA's Phase 1 (MY 2012-2016) GHG rulemaking and used the model to develop, test and justify EPA's choice of standards finalized in that rule. EPA also used the OMEGA model for the Phase 2 (MY 2017-2025) GHG rulemaking and when conducting the Midterm Evaluation of the model year 2022-2025 standards. The model used by the Agencies in this rulemaking, NHTSA's Compliance and Effects Model (referred to as the CAFE or Volpe model) was developed by NHTSA to assist it in carrying out its statutory obligations under EPCA. 75 Fed. Reg. 25,324, 25,572-81, 25,597. EPA is required in this rulemaking to explain why it is now appropriate to forego use of its OMEGA model, which is tailored to satisfying its duty and objectives under the Clean Air Act, and to explain how NHTSA's Volpe or CAFE model is sufficient for purposes of the same.

Other technical departures by EPA from prior rulemakings that require justification relate to its analysis of the relationship between safety impacts and vehicle mass reduction (*see* Section III.E.2.a.(2) below; CARB Comments at 93), and its inflation or doubling of the estimated "rebound effect" from 10% to 20% (*see* Section III.E.2.a.(3) below; CARB Comments at 250). These technical departures significantly affect the outcome of the analysis and have not been sufficiently explained or justified by EPA.

4. EPA Improperly Weighed the Factors It Considered, Giving Too Little Weight to Increasing GHG Emissions and the Need to Provide Incentives for Further Development and Application of Emissions-Reducing Technologies

EPA's analysis is also unlawful because EPA improperly weighed the factors it considered, giving far too little weight to those factors it must consider under the Clean Air Act, including increases in harmful air pollution. Of course, the basic purpose of the Clean Air Act is "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." 42 U.S.C. § 7401(b). The Act provides broad governing principles such as the supremacy of public health. *NRDC v. EPA,* 896 F.3d 459, 465 n.4 (D.C. Cir. 2018), citing 42 U.S.C. § 7619(b)(3) (In promulgating regulations relating to air quality monitoring, "the Administrator shall follow the principle that protection of public health is the highest priority"); *North Carolina v. EPA,* 531 F.3d 896, 918 (2008) (where

EPA did not explain how the statutory objectives related to its choice of emissions caps, the choice was arbitrary and capricious, or not otherwise in accordance with the law).

EPA acknowledges this, essentially in passing, stating that "the goal of these standards is to reduce [GHG] emissions that contribute to climate change." 83 Fed. Reg. at 43,228. As EPA notes, and as the statute makes plain, EPA must consider technical feasibility and the adequacy of lead time to implement new technology. EPA also asserts that it has the discretion to consider and weigh various other, non-statutory factors such as "the impact on consumers with respect to cost and vehicle choice and effects on safety." 83 Fed Reg. at 43,229; *see also id.* at 43,227 (citing *George E. Warren Corp. v. EPA*, 159 F.3d 616, 623-624 (D.C. Cir. 1998)). But, whatever discretion EPA may claim to have to consider other factors, EPA may not escape the fundamental goal of the Clean Air Act or its express statutory responsibility under Section 202(a)(2). In other words, EPA's balancing discretion is not, as it claims here, wholly unfettered. Indeed, EPA's decision to give "particular consideration to the high projected costs of the standards and the impact of the standards on vehicle safety" is arbitrary and capricious and otherwise unlawful for at least two reasons.

First, as discussed below, the agencies' projections with regards to rising costs and adverse safety impacts are massively over-inflated. *See* Section III.E.1.a. And EPA's determination that the costs it projects—which are inflated—are "high" is inconsistent with prior rulemakings, case law, and congressional intent. *MEMA I*, 627 F.2d at 1118; Section III.C.2. above.

Second, it is unlawful for EPA to disregard the Clean Air Act's goals and its own statutory mandate, when balancing multiple factors. *Center for Biological Diversity v. National Highway Traffic Safety Administration,* 538 F.3d 1172, 1197 (9th Cir. 2008) (invalidating "standards that are contrary to Congress's purpose in enacting the [relevant statute]"); *see also American Petroleum Institute v. EPA,* 706 F.3d 474, 479-480 (D.C. Cir. 2013) (EPA's methodology for making cellulosic biofuel projection did not take neutral aim at accuracy and, therefore, it was an unreasonable exercise of agency discretion.) Yet, that is exactly what EPA proposes to do here. EPA admits that compared to the existing standards, "the proposed CO_2 standards for MYs 2021-2026 would *increase* vehicle CO_2 emissions by 713 million metric tons (MMT) over the lifetime of the vehicles produced from MY 1979 through MY 2029, with an additional 159 MMT in CO_2 reduction from upstream sources for a total increase of 872 MMT." 83 Fed. Reg. at 43,230. EPA gives this increase no weight, and, as noted above, appears to assume the agency need do nothing to avert catastrophic levels of CO2 concentrations in the atmosphere. EPA is explicit in this, asserting that: "Notwithstanding the fact that GHG emissions reductions would be lower under today's proposal than for the existing EPA standards, *in light of the new assessment indicating higher vehicle costs and associated impacts on consumers, and safety impacts*, the Administrator believes from a cost/benefit perspective that the foregone GHG emission reduction benefits from the proposed standards are warranted." *Id.* Particularly given the illusory nature of the impacts identified, this conclusion ignores the purpose of these standards, and, indeed, the purpose of the Clean Air Act, namely to reduce air pollution. *See* S. Rep. No. 91-1196, at 24 (1970) ("[S]tandards should be a function of the degree of control required, not the degree of technology available today.")

Courts have held that rules may be arbitrary and capricious where they fail to accomplish their statutory objectives. *See Chemical Mfs. Ass'n v. EPA,* 217 F.3d 861, 867 (D.C. Cir. 2000) (rule establishing schedule for new emission standards was arbitrary and capricious absent

evidence it would benefit human health and the environment, "Given the absence of environmental benefits—indeed, the possibility of environmental harm—EPA violated the basic requirement that its actions must 'not deviate from or ignore the ascertainable legislative intent.'") (citing *Small Refiner Lead Phase-Down Task Force v. EPA,* 705 F.2d 506, 520 (D.C.Cir. 1983)).

EPA's proposal to increase emissions—which gives *no* weight to the fundamental purpose of the Clean Air Act—is the definition of arbitrary and capricious and unlawful. This fact is rendered all the more plain by the burgeoning risks from climate change and the existence of technologies that demonstrably reduce the emissions that cause those risks. *See* Section II.B. above. EPA's decision to over-emphasize factors such as "consumer choice," which are not even part of EPA's statutory mandate, is arbitrary and capricious, as well as contrary to Section 202 of the Clean Air Act. Highlighting its true priority, EPA notes that its analysis "raises concerns that the existing standards … *may not* continue to fulfill the agency's goals of providing sufficient manufacturer flexibility to meet consumer needs and consumer choice preferences." 89 Fed. Reg. at 43,230. But the goal of the Clean Air Act is the protection of public health and welfare, not the facilitation of EPA's view of consumer preferences. *International Harvester,* 478 F.2d at 640 ("The driving preferences of hot rodders are not to outweigh the goal of a clean environment.").

EPA's unlawful and improper balancing—in which it disregards the admitted adverse impacts on air pollution levels and Congress' express interest in driving the development of pollution control technology—is underscored by EPA's failure to consider a single alternative that would strengthen the standards, even though EPA admits that, using technology already deployed, stringent standards are feasible. 83 Fed. Reg. at 43,226 ("more stringent standards may be possible, insofar as production-ready technology exists that the industry could physically employ to reach higher standards….") The failure to consider more stringent alternatives represents a clear abdication of EPA's statutory duty to give serious consideration to the gravity of the harms threatened by climate change; harms that EPA has acknowledged are threatening to become more imminent and serious than previously estimated.

5. EPA Improperly Relies on a Fundamentally Flawed Analysis by NHTSA

As referenced above, EPA acknowledges its duty to promulgate GHG emission standards derives from "a statutory obligation wholly independent of DOT's mandate to promote energy efficiency" and that "EPA has no discretion to decline to issue greenhouse gas standards under section 202(a) or to defer issuing such standards due to NHTSA's regulatory authority to establish fuel economy standards." 83 Fed. Reg. at 43,227 (citing *Coalition for Responsible Regulation*, 684 F.3d at 127); *Mass v. EPA*, 549 U.S. at 532.

Nevertheless, in its proposal, EPA has ignored its statutory mandate under the Clean Air Act to protect public health and welfare in setting standards to reduce GHG emissions and, instead, appears to have deferred to NHTSA's analysis and objectives even though the record reflects that EPA considers NHTSA's analysis to be unreliable.

Agencies have an obligation to independently review evidence and consider factors relevant to their statutory objectives. *Ergon-West Virginia, Inc. v. EPA*, 896 F.3d 600, 612 (4th Cir. 2018) ("On this record, we cannot determine whether the EPA would have reached the same

conclusion had the DOE submitted a proper analysis or had the EPA addressed the DOE's failure to analyze Sections 1(c) and 2(b).").

EPA recognizes these duties in the Proposed Rollback: "NHTSA and EPA are obligated by Congress to exercise their own independent judgment in fulfilling their statutory missions, even though both agencies' regulations affect both fuel economy and CO_2 emissions. Because of this relationship, it is incumbent on both agencies to coordinate and look to one another's actions to avoid unreasonably burdening industry through inconsistent regulations, but both agencies must be able to defend their programs on their own merits." 83 Fed. Reg. at 43,210. *See also* 77 Fed. Reg. at 62,672 ("Finally, with respect to regulation of vehicular greenhouse gas emissions, EPA is not "required to treat NHTSA's regulations as establishing the baseline for the [section 202(a) standards].")

Yet, in this Proposed Rollback, EPA took on the goals and analysis of NHTSA under EPCA, while completely ignoring its own statutory mandate to reduce air pollution, drive innovation, and protect Americans from catastrophic climate change. For example, the Proposed Rollback states that the "footprint" is a good attribute to use for modeling of the standards, and "[s]econd, it is important that the attribute not be easily manipulated in a manner that does not achieve the goals of EPCA or other goals, such as safety." 83 Fed. Reg. at 43,016. There is no mention of the Clean Air Act's goals here. Further, the Proposed Rollback states that: "EPA has chosen to adopt standards consistent with the EPCA/EISA requirements in the interest of simplifying compliance for the industry". 83 Fed. Reg. at 43,015. But EPA offers no reasoned explanation for why "simplifying compliance for the industry" is of paramount concern when the agency's own 2009 Endangerment Finding (and subsequent findings), as well as more recent scientific reports, indicate that the Earth is threatened by irreversible and devastating climate change. Underscoring the point, EPA repeatedly refers to "the analysis" that underlies its proposal rather than "our analysis" or "EPA's analysis" or anything else that would suggest that EPA actually investigated the issues independent of NHTSA's analysis.

With regard to the setting of standards under 202(a): "The Clean Air Act requires the EPA [to be able to] defen[d] its methodology for arriving at numerical estimates." *NRDC*, 655 F.2d at 328 (citing *International Harvester,* 478 F.2d at 629). Documents from the record indicate that EPA identified serious flaws with NHTSA's new and revised modeling (*see also* Section III.E.), yet the proposal contains no discussion of this analysis, and whether or how these flaws were addressed prior to the publication of the Proposed Rollback.[170]

For example, the EPA memo titled EPA Further Review of CAFE Model & Inputs, dated June 18, 2018, notes the following with respect to NHTSA's modeling efforts:

[170] *See* State's Appx. C-50, EPA-HQ-OAR-2018-0283-0453, Documents titled EPA Staff Presentation Review of CAFE Model for OMB (June 18, 2018) (hereinafter "Charmley Memo"); EPA Further Review of CAFE Model & Inputs (June 18, 2018) ("Compared to the results from the As-Received version, our EPA-Revised version provides technology costs that are nearly $500 lower and safety outcomes that show the Proposed standards are detrimental to safety, rather than beneficial as suggested by the As-Received version."); EPA Initial Review of CAFE Model & Inputs (February 9, 2018); EPA Further Review of CAFE Model & Inputs (February 28, 2018) and EPA Presentation to OMB titled EPA review of CAFE model with "GHG" settings (08-Mar ver.) (April 16, 2018).

> First, the scrappage model produces vastly unrealistic growth in the overall fleet size, which in turn causes an unrealistic over-inflation of the fatalities estimated for the Augural standards. Second, the technology packages applied by the model tend to be much more costly than necessary for any specified set of inputs and application constraints.….
>
> Altogether, the effects of [EPA's] code revisions on the CAFE model outputs are substantial, and resolve several of the most indefensible aspects of the CAFE model's representation of the GHG program. Compared to the results from the As-Received version, our EPA-Revised version provides technology costs that are nearly $500 lower and safety outcomes that show the Proposed standards are detrimental to safety, rather than beneficial as suggested by the As-Received version….[171]

EPA summarized its serious concerns with NHTSA's revised CAFE model by noting that the proposed standards:

- Increase fatalities by 17 fatalities per year in CYs 2036-2045;
- Increase fatality rate by 7 deaths per trillion miles driven in CYs 2036-2045;
- Result in 35,000 jobs lost per year; and
- Reduce Net Social Benefits by $83 billion.[172]

Ultimately, EPA stated: "we are not endorsing the use of our modified version of the CAFE model for use in policy setting for the GHG program, in part because of the range of issues we have previously identified with the modeling inputs and assumptions—such as unduly high battery costs, production-ready but unconsidered and/or overly constrained technologies and technology application processes, etc."[173]

In sum, EPA expressed serious reservations about the reliability of NHTSA's modelling results, including the reliability of the data used as inputs to the model. In fact, EPA refers to over-inflated technology costs ("unduly high battery costs") used by NHTSA, and EPA found that when running the model with its own code revisions the Proposed Rollback may actually lead to *increased* fatalities, which is the opposite of what the Proposed Rollback claims. The Proposed Rollback contains no substantive discussion about whether or how the flaws identified by EPA in NHTSA's modelling were revised prior to publication of the Proposed Rollback. And, in fact, the errors EPA identified remain in the analysis EPA now relies on for its proposal. *See* Section III.E. Relying on a model the Agency knows is full of errors is arbitrary and capricious and unlawful. *Columbia Falls Aluminum Co. v. EPA,* 139 F.3d 914 (1998) ("EPA knows that 'key assumptions' underlying the TCLP are wrong and yet has offered no defense of its continued reliance on it.").

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[171] *Id.*

[172] State's Appx. C-50, at 2, Charmley Memo.

[173] *Id*.

6. Even if EPA Could Claim "the Analysis" Here Was Independent, That Analysis Is So Fundamentally Flawed as to Be Arbitrary and Capricious

Where a model is challenged, "the agency must provide a full analytical defense." *Eagle-Picher Indus., Inc. v. EPA,* 759 F.2d 905, 921 (D.C. Cir. 1985); see also *NRDC v. Herrington,* 768 F.2d 1355, 1385 (D.C. Cir. 1985); *Small Refiner Lead Phase-Down Task Force v. EPA,* 705 F.2d 506, 534 (D.C. Cir. 1983) (EPA has a duty to examine key assumptions as part of its affirmative burden of promulgating and explaining a non-arbitrary, non-capricious rule.). Given the numerous flaws in the modeling (described herein and in CARB's Comments), EPA's continued reliance on the outputs of that modeling in support of the proposed standards is arbitrary and capricious.

Moreover, where obvious flaws or holes in the data indicate that the analysis is not based on real world conditions (e.g., over-inflated cost estimates), no deference may be shown and any resulting predictions are arbitrary and capricious. *Michigan v. EPA* 213 F.3d 663, 682 (D.C. Cir. 2000) (EPA could not require state to reduce NO_x emissions where it had accurate data only for part of state showing contribution to downwind ozone levels); *Appalachian Power Co. v. EPA,* 249 F.3d 1032, 1053-1054 (D.C. Cir. 2001) (EPA's nitrogen oxide emission projections were arbitrary to the extent its model failed to use best available information and data that was flatly inconsistent with real world data); *Chemical Mfs. Ass'n v. EPA*, 28 F.3d 1259 (D.C. Cir. 1994) (while courts routinely defer to agency modeling of complex phenomena, model assumptions must have a 'rational relationship' to the real world.)

The analysis in the Proposed Rollback—the models, the inputs, the assumptions, and the conclusions—are arbitrary and capricious, as explained in Section III.E. and in CARB's Comments. Specifically, with respect to the factors EPA purported to consider under the Clean Air Act:

Consideration of the Cost of Compliance. The analysis substantially overstates the compliance costs, as outlined below in Section III.E.1.a. It reduced the estimated fuel economy benefits of certain technologies without explanation or support, which leads to the erroneous conclusion that manufacturers would need to pack more technology in each vehicle in order to meet the existing standards. The Agencies additionally inexplicably increased their previous estimates of the cost of certain technologies which runs counter to evidence in their possession, as reflected in the TAR.[174] Using over-inflated cost data (data acknowledged by EPA as such) to justify a relaxation in the standards at issue is indefensible. In addition, given that the relevant technology is already deployed in the marketplace, estimates relating to compliance costs would be subject to a more exacting standard than predictions that are necessarily more speculative. *NRDC,* 655 F.2d at 328-329.

Consideration of Costs to Consumers. EPA magnifies the overinflating of compliance costs by assuming those costs "could" be passed on to consumers and that these costs would not be offset by fuel savings. 83 Fed. Reg. at 43,230. EPA admits "this imbalance between costs

[174] *See* H-D Report at 6-10; Expert Report by Gary W. Rogers, Roush Industries, Inc., attached to CARB Comments, Attachment 10 (Technical Review of: The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks) (Oct. 25, 2018) ("Rogers Report").

and fuel savings contrasts sharply with what EPA projected in 2012 when setting those standards then," but does not adequately explain this departure. *See id.*; *see also* CARB Comments, Section V (attaching H-D Reports and Rogers Report). EPA also estimates the potential increased costs for consumers related to maintenance, financing, insurance, taxes, and other fees. 83 Fed. Reg. at 43,229 (citing Table VIII-31 and Table VIII-32). EPA's consideration of these costs is contrary to law and to its prior position that section 202(a)(2)'s reference to compliance costs only encompasses costs to the motor-vehicle industry to come into compliance with new emissions standards. 83 Fed. Reg. at 43,227, *quoting Coalition for Responsible Regulation*, 684 F.3d at 128.

Consideration of GHG Emissions. Relative to the very purpose of Clean Air Act section 202, i.e., the setting of standards to reduce GHG emissions which contribute to climate change, as outlined above in Section III.C.4., EPA failed to give any importance to the reduction of emissions when weighing this factor. EPA's discussion of this factor is paltry at best, and makes no effort to explain how its prior endangerment findings can comport with this Proposed Rollback.

The Agencies' flawed and arbitrary analysis provides no justification for EPA's complete abdication of the goal of these standards, and the Clean Air Act itself—namely reducing and preventing air pollution, including the GHG emissions that may lead to catastrophic climate change. Indeed, EPA cannot explain its refusal to carry out its statutory mandate.

As outlined in Section III.E.2.b. below, and in CARB's Comments (Section VI.B) and the Expert Report of Maximillian Auffhammer, the Proposed Rollback grossly underestimates the social cost of carbon ("SCC" or "SC-CO_2"), listed in Table 8-24 of the PRIA, by relying on a number that is dramatically lower than any that was used in hundreds of regulatory proceedings at the federal level through January 2017. The Agencies admit that the reduction in its SCC calculation is primarily due to its decision to calculate SCC only on a domestic rather than a global basis, which is a departure from prior agency decision making and federal guidance, made without offering good reasons. PRIA at 11; see *Fox Television*, 556 U.S. at 515. Put simply, the Agencies' analysis of the GHG benefits lost from rolling back the existing standards rests on a manipulation of the SCC which renders their entire cost-benefit analysis arbitrary and capricious. *Michigan v. EPA,* 213 F.3d at 682 (where obvious flaws or holes in the data indicate that the analysis is not based on real world conditions no deference may be shown and any resulting predictions are arbitrary and capricious); *Appalachian Power,* 249 F.3d at 1053-1054. Relying on an unsupported construct to devalue emissions reduction benefits is patently arbitrary and capricious, and otherwise unlawful, in a Clean Air Act proposal.

Notably, the societal benefits EPA alleges will result from the Proposed Rollback are entirely illusory. As CARB's analysis shows, EPA has flipped the societal costs and benefits on their head. Keeping the existing standards would result in a net benefit of more than $150 billion. *See* Section III.E.3.a; *see also* CARB Comments, Sections VII.B., IX. There simply is no justification for EPA's proposal to *increase* dangerous, climate-disrupting air pollution.

Consideration of Consumer Choice. EPA's longest discussion of the factors it considered in proposing the new standards relates to its consideration of "consumer choice." EPA states that one of the goals it had was to "maintain consumer choice." 83 Fed. Reg. at 43,230. As noted above, EPA does not tie this goal to the objectives of the Clean Air Act. Nor can it do so.

According to EPA, the standards "are designed to require reductions of CO_2 emissions over time from the vehicle fleet as a whole but also to provide sufficient flexibility to the automotive manufacturers so that firms can produce vehicles which serve the needs of their customers." 83 Fed. Reg. at 43,230. This directly contradicts EPA's admission that "automotive companies have been able to reduce their fleet-wide CO_2 emissions while continuing to produce and sell the many diverse products that serve the needs of consumers in the market, e.g., full-size pick-up trucks with high towing capabilities, minivans, cross-over vehicles, SUVs, and passenger cars; vehicles with off-road capabilities; luxury/premium vehicles, supercars, performance vehicles, entry level vehicles, etc." *Id.; Genuine Parts Co. v. Envtl. Prot. Agency*, 890 F.3d 304, 313 (D.C. Cir. 2018) (arbitrary and capricious for EPA to rely on portions of record that support its position, while ignoring cross sections that do not).

EPA also states "the Administrator is concerned that the projected level of hybridization needed to maintain the current standards, and the associated vehicle costs, may be too high from a consumer choice perspective." *Id.* In support of this point, EPA states that "strong hybrid and other advanced electrification technologies have been available for many years (20 years for strong hybrids and eight years for plug-in and all electric vehicles), and sales levels have been relatively low, on the order of two to three percent per year for strong hybrids. 83 Fed. Reg. at 43,231, citing study at footnote 478.[175] EPA claims that the significant increase in hybridization to meet the standards over the next 7 to 12 years would strain manufacturers to offer vehicles consumers do not necessarily want.

The Agencies' characterization of the automobile industry as being forced by the existing regulation to offer vehicles that consumers do not want is belied by the record. Manufacturers have successfully employed a variety of technologies that reduce GHG emissions, many at a faster rate of deployment than was originally projected, as evidenced by large penetration rates of advanced engine and transmission technologies over the last five years. CARB Comments at 76-77. Based on 2017 EPA compliance data, manufacturers are over-complying with the GHG requirements and are offering various vehicles today that are currently able to comply with the GHG standards for later model years. *Id.* With respect to zero-emission technologies, the Agencies are simply wrong. Total sales have risen. *Id.* at 84. Finally, the Agencies' assumption that consumers are not willing to pay for these cleaner vehicles is contrary to historical trends and market research. *Id.* at 199. For example, a 2018 survey commissioned by American Automobile Association shows that 20% of Americans will likely go electric for their next vehicle purchase, up from 15% in 2017. The same survey shows that 31% of respondents are likely to buy a hybrid vehicle the next time they are in the market for a new or used vehicle. *Id.* at 205.

EPA's analysis of this factor is arbitrary and capricious, as discussed above, elsewhere in these comments, and in CARB's comments. And EPA's heavy weighting of this factor exacerbates the errors, as discussed above.

Consideration of Safety. EPA claims that the 2012 standards for model years 2021 and later would increase vehicle fatalities. 83 Fed. Reg. at 43,231 (citing Chapter 11 of the PRIA).

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[175] Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 Through 2017, U.S. EPA Table 5.1 (Jan. 2018), available at https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100TGDW.pdf.

As a threshold matter, EPA's analysis of safety considerations is not grounded in the statute. Clean Air Act section 202(a)(4)(A) specifically prohibits the use of an emission control device, system or element of design that will cause or contribute to an unreasonable risk to public health, welfare, or safety. 42 U.S.C. § 7521(a)(4)(A). But EPA did not propose to find that any specific "emission control device, system, or element of design" available poses unreasonable risks under 202(a)(4)(B), such that its application would be barred under Section 202(a)(4)(A). Nor did EPA propose to find that its safety concerns are caused by the "operation or function" of any particular "device, system or element of design." *Id.*

Further, as outlined in Section III.E.2.a. below, the Agencies' safety claims do not withstand scrutiny. Simply put, where the modelling used to justify the standards has been exposed to be erroneous to the point that its faulty inputs predict the opposite of what should happen in the real world, its use to justify rulemaking is arbitrary and capricious. *Michigan v. EPA,* 213 F.3d at 682; *Appalachian Power,* 249 F.3d at 1053-1054.

EPA's Proposed Rollback—including all alternatives other than the existing standards—directly contravenes the Clean Air Act, runs contrary to congressional intent, and relies on an analysis the Agency knows to be unreliable. The proposal is arbitrary and capricious and unlawful and should be withdrawn.

In conclusion, EPA's analysis is arbitrary and capricious because it fails to give proper weight to the goal of the standards—mitigating or forestalling catastrophic climate change—in favor of avoiding supposed costs to consumers and safety concerns that are not supportable upon review of the data used and analyzed by the agencies. Freezing the standards, or rolling them back at all, is unjustified where the technology required to stay on course exists and there is no credible reason to question the safety impacts. Moreover, the gravity of the harms threatened by climate change are becoming more serious and likely.[176]

A dismantling of the modeling shows that the costs of compliance with the Proposed Rollback are more than outweighed by the costs to the United States (and the globe) of failing to regulate GHG emissions with increasing stringency. Simply put, EPA's effort to balance the relevant factors is neither "appropriate," "reasonable" or supportable under the law. *Center for Biological Diversity,* 538 F.3d at 1198 (considering more recent science on climate change and finding that NHTSA cannot "put a thumb on the scale" by undervaluing benefits and overvaluing the costs of more stringent standards): "What was a reasonable balancing of competing priorities twenty years ago may not be a reasonable balancing of those priorities today."); *Coalition for Responsible Regulation,* 684 F.3d at 122 (citing *Lead Indus. Ass'n v. EPA,* 647 F. 2d 1130, 1155 (D.C. Cir. 1980) (Provision requires a "precautionary, forward-looking scientific judgment" about the risks of a particular air pollutant, consistent with the CAA's "precautionary and preventative orientation.")); *Defenders of Wildlife v. Salazar,* 842 F.Supp.2d 181, 188-189 (D.C. Cir. 2012) (regulations issued under the Endangered Species Act were found arbitrary and capricious where the Department of Interior rolled back consultation procedures between different federal agencies relating to wildlife suppression and the ESA: "…the Defendants have failed to confront [a] significant consequence of the Regulations and 'consider an important aspect of the problem.' [citation omitted]).

[176] State's Appx. C-3, at 1-45, IPCC 1.5°C Report ("If the current warming rate continues, the world would reach human-induced global warming of 1.5°C around 2040.").

D. The Proposed Rollback is Contrary to the Energy Policy Conservation Act

1. NHTSA's Proposed Rollback and Proposed "Maximum Feasible" Determination Contravene EPCA's Energy Conservation Purpose

In proposing to roll back fuel standards for model years 2021 to 2026, NHTSA has abdicated its statutory duty to promote energy efficiency and conservation. Congress created the national fuel economy program as part of EPCA for an express purpose: "to provide for improved energy efficiency of motor vehicles." Pub. L. No. 94–163, 89 Stat. 871 (1975). Congress delegated authority to NHTSA to set fuel standards in order to achieve this "overarching purpose"—a purpose manifest in the title of the statute. 83 Fed. Reg. at 43,206. The plain text of EPCA reaffirms this purpose, through, for example, the requirement that NHTSA set fuel economy standards at the "maximum feasible" level, 49 U.S.C. § 32902(a); the requirement that NHTSA consider the "need of the United States to conserve energy," 49 U.S.C. § 32902(f); and the requirement that fuel standards "increase ratably" from model years 2011 to 2020. 49 U.S.C. § 32902(b)(2)(C). Congress reaffirmed this purpose in 2007 when EPCA was amended by the Energy Independence and Security Act, the stated purpose of which was to "move the United States toward greater independence and security, to increase the production of clean renewable fuels, to protect consumers, [and] to increase the efficiency of products, buildings, and vehicles…" Pub. L. No. 110-140, 121 Stat. 1492 (2007).

The legislative history of EPCA further demonstrates this Congressional intent. *See, e.g.,* H.R. Rep. No. 94-700, at 118 ("The Energy Policy and Conservation Act establishes aggressive and effective programs for energy conservation designed to encourage the maximum efficient utilization of domestic energy."). And multiple courts have held that when setting standards, NHTSA must act in a way that promotes energy conservation. *See Ctr. for Biological Diversity*, 538 F.3d at 1197 ("NHTSA cannot set fuel economy standards that are contrary to Congress's purpose in enacting the EPCA—energy conservation."); *Ctr. for Auto Safety v. Nat'l Highway Traffic Safety Admin.*, 793 F.2d 1322, 1340 (D.C. Cir. 1986) ("It is axiomatic that Congress intended energy conservation to be a long term effort that would continue through temporary improvements in energy availability.").

While NHTSA purports to acknowledge this purpose and the importance of improving fuel economy over time, 83 Fed. Reg. at 42,993, NHTSA proposes to do the opposite: roll back fuel economy standards for a period of at least *six years*. Cynically, NHTSA points to the success it has made thus far in implementing this congressional mandate to conserve energy as a basis for justifying rolling back standards. NHTSA admits that, since EPCA's passage and the adoption of increasingly stringent fuel economy standards, "the oil intensity of U.S. GDP has continued to decline." *Id*. at 43,214. Further, the agency acknowledges that "in today's market American consumers have more options for fuel-efficient new vehicles" because "[m]anufacturers have responded to fuel economy standards and to consumer demand over the last decade to offer a wide array of fuel-efficient vehicles in different segments and with a wide range of features." *Id*. at 43,215; *see also id.* at 43,216 (noting "[t]he effectiveness of CAFE standards in reducing the demand for fuel"). Indeed, the U.S. Energy Information Administration (EIA) credits EPCA's vehicle efficiency standards as a major contributor to the

nation's decline in energy intensity over the past four decades.[177] But NHTSA touts these achievements in the same breath as it abdicates its congressionally-mandated duty to *continue* maximizing energy efficiency.[178]

The Proposed Rollback, and the proposed reinterpretation of the "maximum feasible" statutory language that underlies it, flies in the face of the unambiguous text, structure, and purpose of the Act, and is thus unlawful under *Chevron* step one. *Chevron*, 467 U.S. at 843. And even assuming *arguendo* that some ambiguity existed, NHTSA's interpretation of "maximum feasible" in the Proposed Rollback is "manifestly contrary" to EPCA's primary purpose of energy conservation, and is, therefore, an unreasonable and improper interpretation of the statute under *Chevron* step two. *Id*.

2. NHTSA's Reinterpretations of the EPCA Factors Are Unambiguously Prohibited and Unreasonable, and NHTSA's Analysis of those Factors Is Arbitrary and Capricious

When setting maximum feasible fuel economy standards, NHTSA is required to consider and balance four factors: 1) technological feasibility, 2) economic practicability, 3) the effect of other motor vehicle standards of the Government on fuel economy, 4) and the need of the United States to conserve energy. 49 U.S.C. § 32902(f). In the Proposed Rollback, NHTSA has interpreted these statutory factors in ways that are inconsistent with EPCA's language and congressional intent by narrowly redefining "economic practicability" and constraining "other standards of the Government" to exclude California's emissions standards. These interpretations are both impermissible and unreasonable. *Chevron*, 467 U.S. at 843. Further, NHTSA has impermissibly balanced the factors in a manner that contravenes EPCA's central purpose of energy conservation. *Id., see also Ctr. for Auto Safety*, 793 F.2d at 1340.

In addition, the Agency has balanced the factors in an arbitrary and capricious manner by failing to provide reasoned explanations for its actions, ignoring crucial aspects of the problem the Agency is required by statute to solve, reaching conclusions that run counter to the evidence before the agency, and offering explanations that are simply implausible. *State Farm*, 463 U.S. at 42-43. Further, the agency has departed sharply from its past interpretations and practice without an adequate explanation, often without even an acknowledgment. *Fox Television,* 556 U.S. at 515. As NHTSA has recognized, "[c]onserving energy, especially reducing the nation's dependence on petroleum, benefits the U.S. in several ways" and "[i]mproving energy efficiency has benefits for economic growth and the environment as well as other benefits such as reducing pollution and improving security of energy supply." 70 Fed. Reg. at 51,455. In 2012, NHTSA rejected less stringent alternatives to the augural standards because these alternatives would not have represented "the appropriate balancing of the relevant factors, because they would have left technology, fuel savings, and emissions reductions on the table unnecessarily, and not

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[177] State's Appx. C-109, U.S. Energy Information Administration, "U.S. energy intensity projected to continue its steady decline through 2040," Mar. 1, 2013, available at https://www.eia.gov/todayinenergy/detail.php?id=10191.

[178] Even though the alternatives NHTSA suggests involve some year-on-year increase in fuel economy, none of the alternatives serves EPCA's statutory purpose or represents the maximum feasible standard.

contributed as much as possible to reducing our nation's energy security and climate change concerns." 77 Fed. Reg. at 63,055. With the Proposed Rollback, NHTSA has radically changed positions—assuming energy conservation provides little, if any, benefits, for example—without explaining or even acknowledging this complete reversal of course. *Fox Television,* 556 U.S. at 515; *see also Encino Motorcars*, 136 S. Ct. at 2126 ("[T]he explanation fell short of the agency's duty to explain why it deemed it necessary to overrule its previous position").

In addition, NHTSA's technical analysis departs significantly from that contained in the TAR. Among other things, the analysis in the Proposed Rollback uses completely new models for calculating scrappage, fleet share, and sales response and doubles the rebound rate from 10% to 20%. *See* Section III.E.2. NHTSA has failed to provide an adequate or reasonable explanation for these changes, despite the fact that these new models and assumptions "contradict those which underlay its prior policy." *See Fox Television,* 556 U.S. at 515. Indeed, EPA's review of NHTSA's revisions to the CAFE model noted a number of substantial defects which were not corrected in the Proposed Rollback—including that the scrappage model produces vastly unrealistic growth in the overall fleet size and vehicle miles travelled, that the technology packages applied by the model tend to be much costlier than necessary, and that the model tends to produce fleets that over-comply and make sub-optimal use of available credits, resulting in an unrealistic over-estimation of costs.[179] By failing to adequately respond to these substantial critiques by another federal agency, NHSTA failed to consider significant problems and proposes to reach a conclusion that is counter to the evidence before the agency. *See State Farm*, 463 U.S. at 43. The Proposed Rollback is therefore arbitrary, capricious, and contrary to law. 5 U.S.C. § 706(2)(A).

a. Technological Feasibility

NHTSA effectively concedes that the existing and augural standards are technologically feasible. 83 Fed. Reg. at 43,216 ("We continue to believe that technological feasibility, *per se,* is not limiting during this rulemaking time frame."). Nevertheless, NHTSA has unreasonably reinterpreted this statutory factor in a manner contrary to EPCA's purpose of encouraging technological development. Indeed, fuel economy standards under EPCA are "intended to be technology forcing" because Congress recognized "that 'market forces...may not be strong enough to bring about the necessary fuel conservation which a national energy policy demands.'" *Center for Auto Safety*, 793 F.2d at 1339 (citing S. Rep. No. 179, 94th Cong., 1st Sess. 2 (1975) at 9). However, the Proposed Rollback's preferred alternative would flatline the standards for at least six years, resulting in no technology forcing whatsoever. And the other proposed alternatives would require only very slight increases in fuel economy over time, also resulting in no technology forcing given NHTSA's concession that the technology already exists that could meet the more stringent augural standards. NHTSA is therefore impermissibly and unreasonably (and even implicitly) re-interpreting this factor in a manner contrary to the plain meaning of "feasibility," and ignoring EPCA's technology forcing purpose. *See Chevron*, 467 U.S. at 843; *Fox Television*, 556 U.S. at 515 ("An agency may not … depart from a prior policy *sub silentio*.").

[179] States' Appx. C-50, Charmley Memo, EPA-HQ-OAR-2018-0283-0453, at 1.

The Proposed Rollback further departs from NHTSA's practice with regard to the scope of technology it considers. In past rulemakings, the agency has considered "*all* types of technologies that improve real-world fuel economy." *See, e.g.*, 77 Fed. Reg. at 62,668; 75 Fed. Reg. at 25,555 (emphasis added). NHTSA recognized that it is "not limited…to technology that is already being commercially applied at the time of the rulemaking" but rather "can, instead, set technology-forcing standards." 77 Fed. Reg. at 63,015; *see also* 75 Fed. Reg. at 25,605. In the Proposed Rollback, NHTSA proposes to narrow the scope of its consideration to an unspecified "wide range" of technologies, and admits it "has not attempted to account for every technology that might conceivably be applied to improve fuel economy." 83 Fed. Reg. at 43,208. This is an unexplained departure from the agency's past practice and prior interpretation of "technological feasibility." *Fox Television,* 556 U.S. at 515. In lieu of an explanation, NHTSA opines that it is unnecessary to account for all technologies "given that many technologies address fuel economy in similar ways." *Id.* However, NHTSA has failed to explain: 1) what "similar ways" means, or 2) why the fact that a technology that might improve fuel economy "in similar ways" to another technology obviates NHTSA's obligation to consider its availability, particularly given the differences in costs between different technologies. *State Farm*, 463 U.S. at 43; *Fox Television*, 556 U.S. at 515 (requiring "a more detailed justification" when agencies "new policy rests upon factual findings that contradict those which underlay its prior policy").

In fact, the agency has ignored many technologies, some of which are already widely available in the market.[180] Further, NHTSA failed to even consult with EPA regarding which engine technologies the agency considered.[181] These glaring omissions, along with a number of other errors in modeling of technologies, result in fundamentally flawed predictions of what technology can be applied in model years 2021-2026. *See* Section III.E.1.a. Due to these arbitrary technology constraints, NHTSA has failed to evaluate what is technologically *feasible,* in direct contravention of EPCA's plain text and overall purpose. Further, NHTSA's fundamentally flawed and ill-explained analysis is arbitrary and capricious. *State Farm*, 463 U.S. at 43.

b. Economic Practicability

NHTSA has utterly failed to analyze the economic practicability of the Proposed Rollback by: failing to consider significant job losses and other economic harms that would result from the proposal, erroneously reinterpreting the factor to put an unreasonable amount of weight on consumer choice, considering unrelated concerns about safety, and relying on fundamentally flawed economic inputs and assumptions. These failures render the Proposed Rollback arbitrary, capricious, and contrary to the letter and purpose of EPCA.

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[180] CARB Comments, Section V.A. (noting that "[k]nown technologies, such as high compression ratio engines (referred to as HCR1 and HCR2), were overly limited or ignored" in NHTSA's analysis, despite the fact that these technologies are already being deployed by manufacturers including Mazda and Toyota).

[181] EPA Comments on the Preliminary RIA sent to OMB, Docket No. EPA-HQ-OAR-2018-0283-045 (July 12, 2018), p. 229, available at https://www.regulations.gov/document?D=EPA-HQ-OAR-2018-0283-0453.

(1) Failure to Fully Consider Employment and GDP Losses

As evidenced by EPCA's text and legislative history, and NHTSA's longstanding practice, an important consideration in setting fuel standards is the impact such standards will have on the auto industry and the national economy. *See* H.R. Rep. No. 94–340, at 1771 (discussing Congress's intent that "economic health is restored, that the jobless find work"). Therefore, NHTSA has long interpreted this factor to mean that a standard is "economically practicable" where it is "within the financial capability of the industry, but not so stringent as to" lead to "adverse economic consequences, such as a *significant loss of jobs* or the unreasonable elimination of consumer choice." 83 Fed. Reg. at 43,208 (emphasis added). As discussed below, NHTSA fails to apply this interpretation in this proposal, suggesting that NHTSA is implicitly reinterpreting this statutory factor without acknowledging or explaining this change of course. *Fox Television,* 556 U.S. at 515. NHTSA's failure to adequately explain its new interpretation prevents meaningful comment. And what can be gleaned about the new interpretation indicates it is impermissible and unreasonable. *Chevron*, 467 U.S. at 843; *State Farm*, 463 U.S. at 43.

Contrary to its prior interpretation (and the only one it has expressly announced), NHTSA has failed to consider significant economic harms that would result from the Proposed Rollback. By the agency's own estimation, the proposal would result in 60,000 fewer auto sector jobs by 2030—a five percent reduction in automotive industry employment. 83 Fed. Reg. at 43,291. Instead of examining this relevant data under the only interpretation of this factor it has announced, and rather than articulating a satisfactory explanation for its action, NHTSA merely states that it "believes there could be potential for unreasonable elimination of consumer choice, loss of U.S. jobs, and a number of adverse economic consequences under nearly all if not all of the regulatory alternatives considered today." 83 Fed. Reg. at 43,216. By declining to address its own findings of significant job losses in the auto sector, NHTSA has ignored an important aspect of the problem and failed to propose a "rational connection between the facts found and the choice made." *State Farm,* 463 U.S. at 42. Further, the agency failed to acknowledge or explain its break with its own interpretation and practice of considering whether standards would cause a "significant loss of jobs." 83 Fed. Reg. at 43,208; *Fox Television,* 556 U.S. at 515.

Further, NHTSA completely failed to engage in an analysis of the impacts its proposal would have on employment in sectors related to the auto sector and on national GDP. These macroeconomic factors are not insignificant—the Proposed Rollback is likely to lead to economy-wide employment reductions of nearly 350,000 jobs and GDP reductions of $21 billion by 2035.[182] The agency's omission of any analysis of these economy-wide impacts constitutes a "fail[ure] to consider an important aspect of the problem." *See State Farm*, 463 U.S. at 43. Further, glossing over the negative employment and GDP impacts of the Proposed Rollback is an abdication of NHTSA's clear statutory duty to consider the economic practicability of its proposed standards, and an impermissible interpretation of the statutory text. *See* 49 U.S.C. § 32902(f); *Chevron*, 467 U.S. at 843.

[182] Expert Report by Synapse Economics, Avi Allison et al., at iv, attached to CARB Comments (Assessment of Macroeconomic Impacts from Federal SAFE Proposal) (October 22, 2018) ("Synapse Report").

(2) Overreliance on Unjustified Assumptions about Consumer Choice

Given that the existing standards are within the financial capability of industry and the Proposed Rollback would have *adverse* employment impacts, NHTSA relies heavily (or perhaps entirely) on considerations of consumer choice to argue that the rollback is economically practicable. However, interpreting the factor in this distorted way is impermissible and unreasonable because that is not how Congress intended this technology-forcing statute to be read and because it completely ignores the conservation purpose of EPCA. *Chevron*, 467 U.S. at 843; *Good Fortune Shipping*, 897 F.3d at 261. While NHTSA may consider consumer demand in establishing standards, it cannot do so "to such an extent that it ignore[s] the overarching goal of fuel conservation." *Center for Auto Safety*, 793 F.2d at 1340.

Nevertheless, in an attempt to elevate consumer choice above all other economic considerations, the agency has redefined "economically practicable" to categorically exclude standards that, based on some unspecified metric, "widely apply technologies that consumers do not want." 83 Fed. Reg. at 43,208-09 n.403. This categorical definition is at odds with the technology-forcing purpose of EPCA and is thus impermissible and unreasonable. In addition, NHTSA has offered no explanation for how it would define "wide application," much less how it would supposedly determine what consumers do or do not want. *See State Farm*, 463 U.S. at 42-43. Moreover, this reinterpretation cannot be reconciled with NHTSA's own admission that consumer preferences are notoriously difficult to predict. S*ee id*. at 43,216 (acknowledging the "extensive debate over how much consumers do (and/or should) value fuel savings and fuel economy as an attribute in new vehicles"); *see also Fox Television,* 556 U.S. at 515.[183] The internal inconsistency of NHTSA relying heavily on a factor it admits is notoriously difficult to predict is arbitrary and capricious. *United States Sugar Corp.*, 830 F.3d at 650 (invalidating an agency action due to internal inconsistencies).

Further, NHTSA's economic analysis of consumer choice suffers from several fundamental flaws. First, the agency has drastically overestimated the price impacts that the existing standards would have on new vehicles, by inexplicably inflating technology costs and relying on flawed models to predict impacts on vehicle sales. *See* Section II.E.1.a. Relatedly, NHTSA has not substantiated its concern that an increase in new vehicle prices would place a particular burden on "low-income purchasers."[184] 83 Fed. Reg. at 43,223. And NHTSA assumes, without explanation, that "net savings for consumers improves as stringency [of standards] decreases"—an assumption that NHTSA acknowledges, without justification, "is a

[183] *See also* 83 Fed. Reg. at 43,071 ("Empirical estimates using this approach…of relat[ing] individual buyers' choices among competing vehicles to their purchase prices, fuel economy, and other attributes…span a wide range, extending from substantial undervaluation of fuel savings to significant overvaluation, thus making it difficult to draw solid conclusions about the influence of fuel economy on vehicle buyers' choice." [citations omitted]); 77 Fed. Reg. at 63,038 (acknowledging that consumer acceptability is "particularly difficult to gauge").

[184] *See* State's Appx. C-114, Greene, David L., Welch, Jilleah G., "Impacts of fuel economy improvements on the distribution of income in the U.S," Energy Policy 122 (2018) at 528–541, 530 n.7 (noting that lower income households purchase primarily used vehicles).

significantly different analytical result from the 2012 final rule, which showed the opposite trend." 83 Fed. Reg. at 43,225; *see also Fox Television,* 556 U.S. at 515.

Even more fundamentally, NHTSA has failed to consider the extent to which consumer choice is, in fact, enhanced by providing consumers with the option of purchasing higher-efficiency vehicles. The agency relies on models that assume vehicle consumers assign no value to fuel savings whatsoever. *See* Section II.E.1.a. This assumption not only is implausible but also flies in the face of the Agency's own statements that consumers likely value between half of and all future fuel savings.[185] 83 Fed. Reg. at 43,073. NHTSA fails to justify its assertion that changes in the petroleum market have "supported a shift in consumer preferences." *Id*. at 42,993. NHTSA also relies on an unsupported assumption that gasoline prices will remain relatively low all the way through 2026, thus making fuel efficiency less attractive to consumers. As discussed below in Section II.D.2.d.2, NHTSA fails to provide adequate support for this conclusion, and it is contradicted by recent evidence.[186]

In sum, NHTSA's emphasis on consumer choice as the sole basis for supporting a finding of economic practicability for a proposal that reduces employment and GDP "runs counter to the evidence before the agency," *State Farm*, 463 U.S. at 43, and is an unlawful and unreasonable interpretation of EPCA, *Chevron*, 467 U.S. at 843.

(3) Improper Consideration of Safety

Additionally, NHTSA has, for the first time, defined safety as a "subcomponent of economic practicability"—thus adding an additional component to the "economic practicability" analysis. 83 Fed. Reg. at 43,209. This is an unreasonable interpretation of this factor, given that safety concerns are not discussed in EPCA and have no direct correlation to whether a standard is economically practicable. *See Chevron*, 467 U.S. at 843; *State Farm*, 463 U.S. at 43 (arbitrary and capricious for agency to rely on factors "which Congress has not intended it to consider"). Further, NHTSA has never before analyzed safety considerations as falling under this factor, and fails to explain its reason for doing so now. *See Fox Television,* 556 U.S. at 515. The only justification offered for this redefinition is the unsupported assertion that "[i]nvestment into the development and implementation of fuel saving technology necessarily comes at the expense of investing in other areas such as safety technology." 83 Fed. Reg. at 43,209. Not only is this assertion unmoored from reality, *see* Section III.D.2.e below, it also does not explain why safety should be folded into a consideration of whether standards are economically practicable.

Thus, the agency has misinterpreted this factor and acted in an arbitrary and capricious manner in evaluating the economic practicability of the Proposed Rule.

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[185] This assumption also contradicts NHTSA's claim that automakers that over comply will have a market advantage because of consumer preferences for more fuel-efficient cars. 83 Fed. Reg. at 43,211; *see also U.S. Sugar Corp.*, 830 F.3d at 650.

[186] Indeed, the agency's analysis inconsistently accounts for uncertainty in interest rates and inflation, in tension with its assumption that oil prices will remain steady. *See* 83 Fed. Reg. at 43,216, 43,224.

c. The Effect of Other Motor Vehicle Standards on Fuel Economy

In the Proposed Rollback NHTSA has posited a novel interpretation of EPCA: that "State tailpipe standards (whether for GHGs or for other pollutants) do not qualify as 'other motor vehicle standards of the Government'" under the statute. 83 Fed. Reg. at 43,210. This proposed interpretation contravenes the statute, case law, and the Agency's past practice.

First, redefining "other standards of the government" to exclude all state tailpipe standards is contrary to the plain text of EPCA. *See Chevron*, 467 U.S. at 843. NHTSA attempts to read "federal" into EPCA's text before "Government," when in fact the statute contains no such language. 49 U.S.C. § 32902(f). Courts "ordinarily resist reading words or elements into a statute that do not appear on its face," and NHTSA must do the same. *Bates v. United States*, 522 U.S. 23, 29 (1997). Moreover, NHTSA does not offer any reason Congress would have prohibited the consideration of state tailpipe standards when determining what level of fuel economy is maximum feasible.[187] That failure alone forecloses NHTSA's interpretation. NHTSA's conclusion is also contrary to case law which states unequivocally that California's standards must be considered by NHTSA under this factor. *See Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie,* 508 F. Supp. 2d 295, 347 (D. Vt. 2007) ("It seems beyond serious dispute therefore that once EPA issues a waiver for a California emissions standard, it becomes a motor vehicle standard of the government, with the same stature as a federal regulation with regard to determining maximum feasible average fuel economy under EPCA.").

NHTSA further argues that California's standards are preempted by EPCA, and therefore the agency need not consider them. 83 Fed. Reg. at 43,210-11. This argument is circular and deeply flawed. First, NHTSA has no authority to decide whether or not California's standards are preempted. And as described further in Section IV.A.1, one of the reasons California's Advanced Clean Cars program is not preempted by EPCA is *because* those standards are "other motor vehicle standards of the Government" within the meaning of EPCA. It is therefore question-begging for NHTSA to assert that California's emissions standards are not "other motor vehicle standards of the Government" because they are preempted." *See* Section IV.A.1.

Further, NHTSA clearly contravenes EPCA by asserting that state standards cannot be considered under the "other standards" factor, while simultaneously taking the position that the agency *can* consider these standards under other EPCA factors, if and when it sees fit. 83 Fed. Reg. at 43,210 ("NHTSA may consider elements not specifically designated as factors to be considered under EPCA, given the breadth of such factors as technological feasibility and economic practicability, and such consideration was appropriate."). It is both inconsistent and

[187] As discussed in Section IV.A.2.a, NHTSA's statutory and legislative history arguments related to standards for model years 1978-1980 lack merit, as NHTSA has provided no reasonable argument that Congress meant NHTSA to consider a wider range of standards for those years than for others. *See* 83 Fed. Reg. at 43,210. In fact, legislative history shows that Congress clearly intended NHTSA to consider California's standards, as evidenced by the explicit inclusion of those standards in Section 502(d) of EPCA. *See* Section IV.A.2.a. That section was removed from the statute because it expired, not because Congress took issue with NHTSA's consideration of California's waiver standards. *Id*.

manifestly contrary to congressional intent for NHTSA to ignore state standards under the factor specific to "other motor vehicle standards," yet maintain, at its option, the ability to consider such standards under factors like "technological feasibility" and "economic practicability." *See United States Sugar Corp.*, 830 F.3d at 650. Such an interpretation gives NHTSA far more discretion than Congress intended, and is thus unambiguously prohibited and unreasonable. *See Chevron*, 467 U.S. at 843.

In addition to being contrary to statute and case law, NHTSA's decision not to consider California's standards is an unjustified departure from the agency's past practice. NHTSA has considered California's standards under this factor in numerous past rulemakings. *See, e.g.,* 77 Fed. Reg. at 62,668; 75 Fed. Reg. at 25,556; 70 Fed. Reg. 51,414, 51,454 (2005); 68 Fed. Reg. 16,868, 16,896 (2003). Attempting to justify its departure here, NHTSA notes that "[d]uring the 2012 rulemaking, NHTSA sought comment on the appropriateness of considering California's tailpipe GHG emission standards in this section and concluded that doing so was unnecessary." 83 Fed. Reg. at 43,210. In the Proposed Rollback, NHTSA does not request comment on this issue, instead relying on an incorrect and novel statutory interpretation to categorically exclude California's standards. *Id*. Thus, NHTSA has departed sharply with its past practice without providing a reasoned explanation as required by the Administrative Procedure Act. *See Fox Television,* 556 U.S. at 515.

d. The Need of the United States to Conserve Energy

NHTSA has exceeded its congressionally-delegated authority by diminishing the "need of the United States to conserve energy" factor in a manner that contradicts statutory language as well as congressional design and intent. 49 U.S.C. § 32902(f). By proposing to roll back current standards and advancing a preferred alternative that would freeze fuel economy standards for at least six years, NHTSA has effectively decided that the nation no longer needs to conserve energy. However, as is evident from the plain text of EPCA, Congress made the determination that this need existed and limited NHTSA's role to balancing that established need with other enumerated factors to determine maximum feasible fuel economy levels. *Id*. Thus, NHTSA's current proposal contravenes EPCA, and indeed is *ultra vires*, because the statute does not delegate authority to NHTSA to decide *whether* the nation needs to conserve energy.

Relatedly, it is improper under the statute for NHTSA to define "conservation" as limited to "avoid[ing] wasteful or destructive use." 83 Fed. Reg. at 43,213. Nothing in EPCA's text allows for such a narrow meaning of the term "conserve," and this definition contradicts the statute's fundamental purpose of improving energy efficiency. *See* 49 U.S.C. § 32902(f). Indeed, NHTSA offers no explanation whatsoever from either the statute or legislative history to support this definition. The statute does not define the term "conserve," but legislative history indicates that Congress intended EPCA to "achieve the effective utilization of scarce resources." H.R. Rep. No. 94-700, at 116-17. NHTSA has completely ignored this congressional intent, and impermissibly and unreasonably interpreted the statute, by equating conservation with only the avoidance of waste and destruction.

Traditionally, NHTSA has evaluated "the need of the Nation to conserve energy" by considering "the consumer cost, national balance of payments, environmental, and foreign policy implications of our need for large quantities of petroleum, especially imported petroleum." 83

Fed. Reg. at 43,210. In the Proposed Rollback, NHTSA arrives at arbitrary or unsupported conclusions by completely discounting environmental impacts, mischaracterizing the United States' position in the global oil market, failing to accurately consider consumer costs, and ignoring the fundamental fact that the Proposed Rollback will result in greater use of petroleum, thus increasing our nation's dependence on oil.

(1) Environmental Impacts

Crucially, NHTSA has completely disregarded major environmental concerns in its evaluation of this factor and failed to articulate a reasoned explanation for doing so. The agency attempts to justify these omissions, in part, by relying on its novel definition of "conservation" as limited to "avoid[ing] wasteful or destructive use." 83 Fed. Reg. at 43,213. However, the agency has not explained what this definition actually means and how it changes the agency's past practice of considering environmental impacts. *See State Farm*, 463 U.S. at 43; *Fox Television,* 556 U.S. at 515. In addition, under any plausible interpretation of the phrase, the Proposed Rollback would lead to "wasteful or destructive use" of energy by causing the nation to consume more oil than it would under the existing standards. NHTSA's proposal is, thus, inconsistent with its own proposed understanding of this factor.

Further, NHTSA projects that the Proposed Rollback will result in significant climate harms, yet perversely uses those bleak projections to justify rolling back fuel standards, noting: "it is reasonable to ask whether rapid ongoing increases in CAFE stringency…can sufficiently address climate change to merit their costs." *See* 83 Fed. Reg. at 43,215-16 (noting that "global surface temperatures are still forecast to increase by 3.484-3.487 °C" by 2100). First, positing an open-ended question regarding the balancing of costs and benefits does not provide a "satisfactory explanation" for NHTSA's decision to completely disregard environmental costs. *See State Farm*, 463 U.S. at 42-43. Second, NHTSA admits that it has been the agency's longstanding practice, reaching back to 1988, to consider the effects of reducing tailpipe emissions of CO_2 in conjunction with this factor. *Id*. at 43,211. Although the data provided by NHTSA is both limited and skewed, NHTSA admits that the Proposed Rollback will increase CO_2 emissions by 7,400 million metric tons (MMT) by 2100 when compared to augural standards.[188] Nevertheless, the agency effectively ignores its own findings, in a sharp and unexplained break with the agency's past practice of considering climate impacts. *See Fox Television,* 556 U.S. at 515; *see* 77 Fed. Reg. at 63,113 (in 2012, discussing benefits of standards, including reductions in "economic damages expected to result from climate change and local air pollution"); 75 Fed. Reg. at 25,645 (in 2010, discussing value of reduced climate-related economic damages from lower emissions of GHGs).

Additionally, NHTSA's evaluation of this factor fails to include any analysis of environmental costs related to air quality. NHTSA ignores this important issue based on false assertions that certain emissions will be reduced under the Proposed Rollback. However, due to fundamental flaws in NHTSA's technical analysis, *see* Section III.E.2, NHTSA substantially understates the actual impacts of the Proposed Rollback on criteria air pollutants (such as NOx

[188] NHTSA DEIS, S-18 and Appendix D-18.

and PM) and air toxics (such as benzene).[189] NHTSA cannot reasonably rely on its fundamentally flawed findings.

(2) Consumer Costs

NHTSA concedes that "consumers benefit from vehicles that need less fuel to perform the same amount of work," but then fails to analyze the fact that the Proposed Rollback will increase fuel costs for these same consumers, and increase consumer exposure to gas price shocks. 83 Fed. Reg. at 43,210.

First, NHTSA arbitrarily and capriciously assumes in its modeling that oil prices will remain constant, and attempts to justify this claim by presenting unsupported conjecture that the nation is now immune from price shocks in the global oil market. *See* 83 Fed. Reg. at 43,213-14. But, in reality, accurate forecasting of the oil market is difficult to achieve,[190] and there is ample evidence that oil prices will fluctuate in the future.[191] In fact, the International Energy Agency predicts that gasoline prices will go up between 2018 and 2050[192] and could become volatile after 2023.[193] 83 Fed. Reg. at 43,215. In addition, OPEC spare capacity is at one of the lowest levels in the last 15 years, meaning that in case of a disruption to oil supply, world oil producers will have fewer reserves from which to quickly supply oil.[194] Moreover, NHTSA's emphasis on the domestic "shale revolution" is misplaced, as "considerable uncertainty remains about its long-term scope, longevity, and price responsiveness."[195] Most fundamentally, the key fact that NHTSA's analysis ignores is that U.S. gas prices are *no less vulnerable* to volatility in global oil

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[189] Multistate NEPA Comment Letter, Section II.D.

[190] Since the early 1990s projections have been correct only 60 percent of the time. Expert Report by Elizabeth A. Stanton et al., at 8, (Review of August 2018 NHTSA/EPA Proposed Rulemaking Reducing the Stringency of CAFE and CO2 Standards) (October 24, 2018) ("Stanton Report"); *see also* Comment by Jason Bordoff, Docket ID: NHTSA-2018-0067-10718 (October 25, 2018) ("Bordoff Comment") (noting that "oil prices are inherently volatile" as exhibited by the fact that oil prices "collapsed from $115 per barrel in mid-2014 to the high $20s by early 2016").

[191] *See, e.g.,* Bordoff Comment at 3-5 (noting that "geopolitical risk remains a factor affecting oil prices" and providing recent examples); States' Appx. C-107, Holly Ellyatt, *Expect 'Extreme Volatility' for Oil Prices Due to The Iran Sanctions, BP CEO says*, CNBC (Oct. 10, 2018), https://www.cnbc.com/2018/10/10/bp-ceo-says-oil-markets-will-see-extreme-volatility-iran-sanctions.html.

[192] States' Appx. C-110, EIA, Annual Energy Outlook, 2018 ("AEO") at 58.

[193] States' Appx. C-115, International Energy Agency, Oil 2018: Analysis and Forecasts to 2023, at 5.

[194] Stanton Report at 14; Bordoff Comment at 4, 8 (noting that "[o]nly a handful of OPEC members, particularly Saudi Arabia, hold a meaningful amount of spare capacity").

[195] Bordoff Comment at 7-10 (noting that shale oil cannot serve as a swing supplier to stabilize oil markets because it takes 6-12 months for U.S. shale to respond to price changes, and that "public opposition to fracking is on the rise," which could result in stricter regulation of the practice, "thus undermining shale economics and diminishing the prospects of future production growth").

markets as a result of increased domestic production.[196] Thus, the most effective way to protect Americans from gas price volatility is to improve vehicle fuel economy and thereby reduce the oil intensity of the U.S. economy.[197]

Further, the agency's myopic focus on drastic market fluctuations completely fails to take into account the many factors that contribute to oil prices. The agency states, without support, that "the relevant question for the need of the U.S. to conserve energy is not whether there will be *any* movement in prices but whether that movement is likely to be sudden and large." 83 Fed. Reg. at 43,214 n. 444. However, even if the nation is more protected from global price shocks than it was at the time EPCA was enacted, this does not mean that "that gasoline prices will never rise again at all." *Id.* Thus, by failing to analyze the likely impact of even moderate future increases and volatility in fuel prices, NHTSA has failed to consider an important aspect of the problem and finalizing this finding would run counter to the evidence before the agency. *See State Farm,* 463 U.S. at 43.

Finally, NHTSA fails to take into account the fact that, regardless of whether gas prices rise or remain constant, the Proposed Rollback would inevitably force consumers to spend more on gasoline. 83 Fed. Reg. at 43,216. This would lead to a number of economic consequences that NHTSA has failed to analyze. Historically, as gas expenditures rise, consumers' disposable incomes shrink and their spending on other goods falls, resulting in negative economy-wide effects.[198] Further, higher gas expenditures disproportionately impact low income households, which spend a larger share of their income on gas.[199] These negative impacts on consumer costs are likely to continue and perpetuate, given that cars sold in the model years for which NHTSA proposes to freeze standards will, according to the Agencies, be on the roads for decades.[200] Thus, NHTSA's analysis is arbitrary and capricious because it entirely fails to consider how the Proposed Rollback would impact consumers and the economy as a whole due to increased gasoline expenditures.

(3) National Balance of Payments

NHTSA has failed to offer an adequate explanation for its conclusion that the national balance of payments weighs in favor of a Proposed Rollback which would make the nation more dependent on oil, including imported oil. Notably, as the Agencies acknowledged in 2016, 90%

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[196] Bordoff Comment at 6-7 (noting that "increased U.S. oil supply does not insulate drivers from higher pump prices, which are largely determined by oil prices set in a globally integrated market" and that "[r]ising domestic output does nothing to diminish U.S. linkages with world energy markets.").
[197] *Id*. at 11-12.
[198] Stanton Report at 11; Synapse Report at v ("Ultimately, we find that the Proposed Rollback will lead to increased gasoline expenditures, which will have negative repercussions for the U.S. economy as a whole.").
[199] Stanton Report at 11-12.
[200] *See* PRIA at 971 (assuming a 30-year vehicle life).

of fuel savings from existing standards would lead directly to a reduction in imported oil.[201] Instead of addressing this or justifying its departure from its prior approach, NHTSA lays great emphasis on the fact that "oil imports have declined while exports have increased" since 2005.[202] But the United States continues to import significant amounts of petroleum—10.1 million barrels per day (MMb/d) in 2017, which accounted for approximately one-fourth of nation's total consumption.[203] Further, imports as a share of oil consumption in the United States are only about 10% lower today as compared to 1975,[204] and we are producing the same amount of crude oil domestically today as we were in 1970.[205] Moreover, as discussed above, increased domestic oil production does not immunize consumers from oil price fluctuations.

Bizarrely, NHTSA argues that the need of the nation to conserve energy is lessened by the fact that fuel purchases increasingly "represent transfers between domestic consumers of fuel and domestic producers of petroleum." 83 Fed. Reg. at 43,211. In doing so, NHTSA essentially claims that increasing revenues of oil companies—which report annual profits in the billions[206]—is an even trade-off for adding cost pressures and oil-price shock exposure to American households.[207] As discussed in the previous section, this assertion ignores the negative economic impacts that would result from increasing the cost burden on oil consumers. Indeed, NHTSA's argument that the "urgency of the U.S. to conserve energy" has been "reduced" due to the fact that domestic oil companies will turn greater profits from increased oil consumption, 83 Fed. Reg. at 43,212, "is so implausible that it could not be ascribed to a difference of view or the product of agency expertise," *State Farm,* 463 U.S. at 43.

(4) Foreign Policy

Finally, NHTSA fails to provide adequate support for its conclusion that "[f]oreign policy considerations appear to have shifted along with the supply shifts" in the global oil market. 83 Fed. Reg. at 43,215. NHTSA provides no evidence to support the assertion that the emphasis

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[201] *See* States' Appx. C-40, Draft TAR at 10-23 ("Based on a detailed analysis of differences in U.S. fuel consumption, petroleum imports, and imports of petroleum products, the agencies estimate that approximately 90 percent of the reduction in fuel consumption resulting from adopting improved GHG emission and fuel economy standards is likely to be reflected in reduced U.S. imports of crude oil and net imported petroleum products.").

[202] After stating that concerns over the national trade deficit have "largely laid fallow in more recent CAFE actions," 83 Fed. Reg. at 43,213, NHTSA does not explain why it now considers the balance of payments more important than it has been in the recent past. *Fox Television,* 556 U.S. at 515.

[203] States' Appx. C-111, EIA, FAQ: How much petroleum does the United States import and export? ("EIA FAQ").

[204] States' Appx. C-112, EIA, Annual Energy Review 2011 at 120 Table 5.1a.

[205] States' Appx. C-110, AEO at 44 ("U.S. crude oil production in 2018 is projected to surpass the record of 9.6 million barrels per day (b/d) set in 1970.").

[206] In 2017, Exxon Mobil $20.4 billion in profits, and Chevron earned $10.3 billion. States' Appx. C-113, Forbes, The World's Largest Public Companies.

[207] Average U.S. household income in 2017 was $61,372. States' Appx. C-116, U.S. Census, Income, Poverty and Health Insurance Coverage in the United States: 2017.

placed on global oil market stability, and the stability of major oil-exporting nations, by the U.S. military and foreign policy institutions has in any way lessened as U.S. oil production has increased. *See id*.; *State Farm,* 463 U.S. at 43. To the contrary, NHTSA admits that "[i]f U.S. demand for imported petroleum increases, it is also possible that increased military spending to secure larger oil supplies from unstable regions of the globe will be necessary." 83 Fed. Reg. at 43106. The Proposed Rollback will increase the nation's demand for petroleum, a quarter of which is still imported.[208] As NHTSA has acknowledged in the past, "expenses for maintaining a U.S. military presence to secure imported oil supplies from unstable regions" are linked to increases in oil consumption. *See* 77 Fed. Reg. at 62,939; 75 Fed. Reg. at 25,556. NHTSA has not explained why the Proposed Rollback, which will increase our nation's oil consumption, would not increase these expenses. *See Fox Television,* 556 U.S. at 515

In conclusion, NHTSA has failed to articulate a reasonable basis for concluding that the "need for the United States to conserve energy" factor weighs in favor of the Proposed Rollback. Considerations of environmental concerns, costs to consumers, exposure to global oil market volatility, foreign policy and the national balance of payments all weigh against the Proposed Rollback, which would drastically increase the nation's oil consumption.[209] Further, NHTSA's claim that the nation's need to conserve energy is any less than it was at the passage of EPCA or EISA, or at the time the existing standards were set, is unsupported and therefore arbitrary and capricious. *See State Farm*, 463 U.S. at 43; *Fox Television,* 556 U.S. at 515. It is also unambiguously prohibited and unreasonable under EPCA and constitutes an *ultra vires* usurpation of a determination made by Congress.

e. Safety

NHTSA has historically considered safety impacts when setting maximum feasible standards. *CBD v. NHTSA*, 538 F.3d at 1204. But in the Proposed Rollbacak, NHTSA departs from its past practice by relying on completely novel and unsupported theories regarding the linkages between fuel economy and safety that do not reflect reality. In the past, NHTSA has considered the safety of the technologies that improve fuel economy. *See* 77 Fed. Reg. at 62,670; 75 Fed. Reg. at 25,556-57; 68 Fed. Reg. at 16,870. In the Proposed Rollback, however, NHTSA has linked safety concerns with rebound and scrappage effects of more stringent fuel economy standards. 83 Fed. Reg. at 43,209, 43,212. As discussed in Section III.E.2, these theories are unsupported, implausible, and contradicted by numerous experts—rendering them arbitrary and capricious. The agency has also failed to acknowledge or adequately justify its break with past analyses of safety. *See Fox Television,* 556 U.S. at 515.

Further, NHTSA's emphasis on safety is inconsistent with the agency's failure to take more direct and effective steps toward improving vehicle safety. According to the Consumers Union, "DOT and NHTSA have failed to finalize numerous safety efforts begun under their own initiative prior to 2017, as well as at least 11 overdue vehicle safety rules required by Congress."[210] In addition, NHTSA's position regarding safety is inconsistent with the agency's

[208] States' Appx. C-111, EIA FAQ.
[209] States' Appx. C-39, 2017 Final Determination at 5-6.
[210] States' Appx. C-108, Consumer Reports, Auto Fuel Economy and Safety: Improving Together at 4.

apparent lack of concern that automakers might "globalize a vehicle platform" in response to more stringent fuel standards in other countries, which would in theory lead to the same safety risks NHTSA has identified. 83 Fed. Reg. at 43,211. NHTSA does not explain these inconsistencies. *See United States Sugar Corp.*, 830 F.3d at 650; *State Farm*, 463 U.S. at 42-43.

3. NHTSA's Proposal Violates Statutorily-Imposed Timing Limitations

a. NHTSA's Proposal Violates Statutory Lead Time Requirements

EPCA requires that NHTSA prescribe new CAFE standards, and amendments to existing standards, at least 18 months[211] before the beginning of each model year. 49 U.S.C. § 32902(a), (g). NHTSA has elected to ignore this requirement in setting standards for the year 2021. 83 Fed. Reg. at 43,207. NHTSA appears to argue that this lead-time requirement only applies to amendments that make average fuel economy standards more stringent, and thus does not apply to its rollback of the standards for 2021.[212]

NHTSA's reading of the statute is unambiguously prohibited and unreasonable.[213] Amendments to existing standards are governed by Section (g)(1), and are permitted only where "the amended standard meets the requirements of subsection (a) or (d), as appropriate." 49 U.S.C. § 32902(g)(1). Section (a), in turn, contains the 18-month lead-time requirement.[214] To argue that amendments are exempt from lead-time requirements would impermissibly render this provision a nullity. *See FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 133 (2000) (holding that the words of a statute must be read in context, and with a view to their place in the overall statutory scheme). Further, NHTSA has not found, nor is there a basis to find, that it is not "appropriate" to give manufacturers 18 months lead time for amending the existing standards.[215] Instead, NHTSA impermissibly and unreasonably ignores Section (g)(1) in its discussion of lead-time for MY 2021. Therefore, NHTSA's proposal would violate EPCA by amending standards for 2021 without providing sufficient lead time, unless that standard is

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[211] NHTSA claims that to meet this requirement for model year 2022, it must publish a final version of the Proposed Rollback by April 1, 2020. 83 Fed. Reg. at 43,207. The agency has counted incorrectly—18 months prior to September 1, 2021 is, in fact, March 1, 2020.

[212] *See* 83 Fed. Reg. at 43,207. It is difficult to understand NHTSA's justification, which states: "EPCA contains no lead time requirement unless amendments make an average fuel economy standard less stringent." *Id*. This statement would seem to indicate that the lead time requirement *does* apply to the Proposed Rollback, which proposes to loosen existing standards.

[213] On a practical level, this interpretation could punish advanced automakers that have made significant investments in technology to comply with their legal obligations, and endanger the ability of CARB to work with EPA and NHTSA on a coordinated regulatory program, by enabling NHSTA to alter and undercut standards without providing sufficient lead time.

[214] Section (d) lists exemptions for small manufacturers which are not relevant here.

[215] Nor can NHTSA issue an "appropriateness" finding in the final version of the rule without first giving the public notice of, and opportunity to comment on, the basis for any such finding. 5 U.S.C. § 553(b).

finalized by July 1, 2019. *See* 49 U.S.C. § 32901(a)(16) (defining "model year" as beginning January 1 of a calendar year).

b. The Proposed Rollback Violates EPCA's Prohibition on Setting Standards for More Than Five Model Years

EPCA states that the Secretary shall "issue regulations under this title prescribing average fuel economy standards for at least 1, but not more than 5, model years." 49 U.S.C. § 32902(b)(3)(B). The Proposed Rollback would set standards for model years 2021 through 2026—one year more than permitted by statute. 83 Fed. Reg. at 43,208. NHTSA argues that the 5-year limit does not apply to 2021 because the agency is relaxing existing standards for that year. *Id*. However, NHTSA is impermissibly reading an exemption into the statute. *See Bates v. United States*, 522 U.S. 23, 29 (1997). Nothing in the statute's text indicates that relaxing a standard should be exempted from the 5-year timeframe. The text refers only to "prescribing" standards, without regard for whether the agency is making standards more or less stringent. 49 U.S.C. § 32902(b)(3)(B). Therefore, NHTSA would violate EPCA by setting standards for a period of more than 5 years.

4. NHTSA Cannot Retroactively Revise the 92-Percent Standard

EPCA defines a minimum standard for domestically manufactured passenger automobiles as "92 percent of the average fuel economy projected by the Secretary…which projection shall be published in the Federal Register when the standard for that model year is promulgated…." 49 U.S.C. § 32902(b). NHTSA published the 92-percent minimum domestic passenger car standards for model years 2017–2025 as part of the 2012 final rule. 49 CFR 531.5(d). NHTSA is now proposing to "retroactively revise the 92-percent minimum domestic passenger car standards for MYs 2012–2016 'to reflect 92 percent of the required average passenger car standard taking into account the fleet mix as it actually occurred, rather than what was forecast.'" 83 Fed. Reg. at 43,207.[216]

This proposed retroactive revision is inconsistent with EPCA for two reasons. First, the 92 percent requirement is expressly intended to be a projection, not a retrospective recalculation. *See* 49 U.S.C. § 32902(b). Second, the statute does not contemplate a "range," but rather a "minimum" with a set value—92 percent. *Id*. If Congress had intended the value to be a range, it would have included that language in the statute, and would not have determined the value with such specificity. *See Bates*, 522 U.S. at 29. Therefore, any reconsideration of that minimum standard at any value other than 92 percent would be an impermissible and unreasonable interpretation of EPCA. *Chevron*, 467 U.S. at 842–43.

[216] *Quoting* States' Appx. C-106, Automobile Alliance and Global Automakers Petition for Direct Final Rule with Regard to Various Aspects of the Corporate Average Fuel Economy Program and the Greenhouse Gas Program (June 20, 2016) at 5, 17–18.

E. The Agencies' Proposed Rollback Relies on a Technical Analysis that is Arbitrary and Capricious

The Agencies' technical analyses in support of the Proposed Rollback is a radical departure from past analyses and modeling of the light-duty vehicle sector. In short, EPA has foregone the use of models that it relied on for the 2009 and 2012 rulemakings, as well as the 2016 Draft TAR, and relied, instead, on NHTSA's dramatically revised CAFE model and entirely new, non-peer reviewed models of sales, fleet share shifts, and scrappage. These models, and the assumptions, model constraints, and other model inputs on which the Agencies rely, introduce profound errors into the Agencies' analyses and conclusions regarding safety, vehicle sales and costs, and macroeconomic impacts.[217] In this Section, we describe the major flaws in the Agencies' modeling (including assumptions and other inputs) and how they lead to erroneous conclusions. In addition, we hereby incorporate in full by reference the more detailed, technical comments on these subjects submitted by CARB (including the expert reports submitted with CARB's comments). We begin with a summary of the main points.

First, the Agencies' findings— that rolling back the existing standards would lead to over one million additional new vehicle sales, reduce manufacturers' technology costs by over $250 billion, and reduce vehicle ownership costs—contradict prior findings and do not stand up under examination. The Agencies' calculation of the vehicle sales impact comes from a new and un-peer reviewed "sales model" that has numerous flaws. To begin, the sales model's results are compromised by the erroneous assumptions made about the impact of the existing standards on manufacturers' and consumers' technology costs. EPA and NHTSA vastly overestimate manufacturers' technology or "regulatory" costs and thus, consumers' costs of vehicle ownership. By using obsolete data, understating the efficiency of technologies, inflating the costs of technologies, and making erroneous calculations, among other things, the Agencies skew their predictions of costs. For example, the Agencies overestimate the cost of hybrid technologies and other zero-emission technologies by more than double. These results deviate without explanation from the Agencies detailed technical review in 2016 and contradict real-world data.

The model also omits important data by failing to consider how consumers respond to fuel cost savings that offset increases in sticker price. *See State Farm*, 463 U.S. at 43 (holding that EPA acted arbitrarily and capriciously because it "'entirely failed to consider an important aspect of the problem' by failing to address evidence that "runs counter to the agency's decision"). And, the model relies on aggregate and macro-level data that lack the detail sufficient to capture the consumer behavioral response it purports to model. The model results are also inconsistent with evidence to date showing that light-duty vehicle sales have been increasing during the same period when emissions have been reduced and vehicle prices have risen.

Second, the Agencies' conclusion that rolling back the existing standards will prevent thousands of fatalities on the Nation's roads is simply untrue. The Agencies' fatality figures are

[217] Indeed, EPA pointed out many problems with the model and its assumptions to NHTSA during the rulemaking process. NonethelessEPA offers no alternative to NHTSA's flawed modeling in the proposed rollback. *See* Section II. D. above.

primarily driven by NHTSA's fundamentally flawed, new, and un-peer-reviewed "scrappage model," which produces counter-intuitive and unexplained results. Although the Agencies purport to be rolling back the standards because the projected increase in the price of new vehicles will slow the rate at which drivers purchase newer vehicles that are safer, they do not in fact model any effect of new vehicle sales on scrappage. The sales model and the scrappage model are not connected, and therefore a change in sales has no effect in the scrappage model. Rather, the "scrappage" model purports to examine the effect of new vehicle *prices* on the retention of existing vehicles. The model finds that the projected increase in the price of new vehicles will result in a dramatic increase in the number of used cars on the road and a commensurate increase in vehicle miles traveled (VMT), and that an increase in fatalities will result. The inconsistencies between the model's outputs and real-world data and common sense are plain. For example, the model estimates that for every new vehicle not sold under the existing standards, between 4 to 23 more used vehicles would remain on the road in that same year, leading to a total of 9 million more vehicles on the road by 2035 than under the Agencies' preferred alternative. This model also leads to an enormously inflated projection of vehicle miles travelled because that figure is based, unreasonably and illogically, on fleet size rather than on the demand for driving. These results are inconsistent with robust historical data and defy common sense, problems that are only highlighted by the complete absence of any explanation from the Agencies. The results are "so implausible that [they] could not be ascribed to a difference in view or the product of agency expertise." *State Farm*, 463 U.S. at 43.

The Agencies also attribute the need to roll back the standards to negative safety impacts arising from the effect of vehicle mass reduction. The Agencies' analysis fails to acknowledge the increasing disconnect between vehicle mass and safety, as manufacturers turn to structural design and materials that while lighter, are stronger and have safety benefits. Moreover, the Agencies acknowledge that the estimated effects are not statistically significant at the confidence level generally regarded as sufficient to rely on in rulemaking. *See* 83 Fed. Reg. at 43,111. Nor do the Agencies account for safety benefits that new safety technologies in future vehicles will have on the Agencies' predicted outcome.

The remainder of the Agencies' purported safety impacts derive from an unsupportable fleet share model and their unjustified decision to assume a 20% "rebound" effect—i.e., a rate used to predict an increase in vehicle miles driven because of increased fuel economy, double the figure these same agencies previously used. The 20% figure is unsupported, even by the authors of papers upon which the Agencies rely. *See Encino Motorcars, LLC v. Navarro*, 136 S.Ct. 2117, 2126 (2016) ("Divergent factual findings … raise questions as to whether an agency is fulfilling its statutory mandates impartially and competently").

The Agencies' safety conclusions also suffer from a troubling internal inconsistency and an inconsistency with federal transportation policy generally. That is, the Agencies acknowledge that any increase in vehicle miles traveled is not caused by the existing regulations *per se*, but rather is a result of individual drivers' exercise of a choice to drive more. Drivers would only do so if that additional driving or mobility brought them greater benefit than the additional risk of an accident. In other words, causing people to drive more—which statistically would increase fatalities (all other factors being held equal)—has not been deemed a negative effect in federal transportation policy. To name just a few examples, the federal government funds highway construction and subsidizes oil and gas exploration, both of which increase vehicle miles

traveled. Yet, here, the Agencies rely on a (unsupportable) projection of increased fatalities *from increased vehicle miles travelled* as a central justification for the Proposed Rollback.

Third, the Agencies' analysis of the Proposed Rollback's economic impacts fails to include an analysis of economy-wide employment and GDP impacts. The Agencies themselves admit the proposed rollback will result in 60,000 fewer automotive sector jobs by 2030. That alone should give the Agencies' pause. But those numbers are underestimated by more than half. In addition, the Agencies completely ignore GDP reductions between $13 billion and $17 billion in 2035. By limiting their analysis in this way, the Agencies have completely failed to consider important economic consequences of the Proposed Rollback. *State Farm*, 463 U.S. at 43. In the end, monetizing the societal costs and benefits of the Proposed Rollback (which the Agencies do to justify their rollbacks) reveals that the societal costs of the Proposed Rollback far exceed its societal benefits.

1. NHTSA and EPA Misstate the Effect of the Existing standards on Vehicle Sales by Overstating the Cost to Comply

While NHTSA and EPA concluded in 2012, and EPA confirmed in 2017 (77 Fed. Reg. at 62,555; 3 EPA-420-R-17-001 (Jan. 2017)), that the current GHG standards and the augural CAFE standards are feasible at reasonable costs, the Agencies now claim that they want to roll back those standards in "light of what is technologically feasible and economically practicable, as directed by Congress." 83 Fed. Reg at 42,995. As noted above, the Agencies do not actually claim the existing standards are technologically infeasible. *See* 83 Fed. Reg. at 43,216 ("We continue to believe that technological feasibility, *per se*, is not limiting during this rulemaking time frame."). Rather, NHTSA and EPA propose to roll back the standards partially based on their claim that the costs of compliance are too high and would reduce vehicle sales.

For example, the Agencies now claim that meeting the existing model year 2025 standards would raise per-vehicle costs by $2,260 as compared to the model year 2020 standards (PRIA at 93), roughly twice what they previously found.[218] The Agencies then assert that, compared to the Proposed Rollback, the price increases from existing standards would depress new sales by 0.2 % in 2022 and by as much as 1.1 % in 2026 and 2027. 83 Fed. Reg at 43,291-92, Table VII 26. These percentages correspond to around 100,000 to 200,000 vehicles in any given year), or 1.2 million vehicles through 2030. 83 Fed. Reg. at 43,266. Neither the increase in costs of compliance nor the decreases in sales are plausible, and the modeling and inputs used by the Agencies run counter to, or fail to consider, the available evidence. Further, the Agencies' have not justified their departure from their 2016 analysis of compliance costs.

a. The Agencies' Overstated Compliance Costs Are Not Supportable

In 2016, NHTSA and EPA found that under the existing standards, the costs to comply with the model year 2025 standards compared to model year 2021 standards would be

[218] States' Appx. C-40, TAR at ES-8.

approximately $895 to $1,174 per vehicle.[219] Their new cost estimate of $2,260 per vehicle is based on unexplained changes in assumptions.[220] *First*, the Agencies have reduced the estimated fuel economy (and emission-reduction) benefits of certain technologies, without explanation or support. This, in turn, leads the Agencies to erroneously conclude manufacturers would have to pay for additional technologies to meet the standards, driving up costs. *Second*, the Agencies have simply increased their previous estimates of the cost of certain technologies, again without explanation or support. As discussed below, the Agencies' doubling or more of their previous cost estimate runs counter to evidence in their possession, as reflected in the 2016 TAR. *See, e.g.*, *Organized Vill. of Kake v. U.S. Dep't of Agric.*, 795 F.3d 956, 968 (9th Cir. 2010) ("Agency may not simply discard prior factual findings without a reasoned explanation"). This doubling is also unsupported by the most recent real-world data. *Third*, the PRIA and Proposed Rollback text ignore cost-effective technologies that would reduce costs. In sum, the Agencies' embedding of these flaws in their model renders reliance on its results arbitrary and capricious. *See State Farm*, 463 U.S. at 43 (discussing how implausible results and failures of the agency to consider evidence that runs counter to their decision renders their action arbitrary and capricious).

Understated Technology Effectiveness. As CARB's comments, and attached expert reports, detail, the Agencies understate the fuel economy (and GHG reduction) benefits many available technologies can achieve. For example, the Agencies understate fuel economy savings in start-stop systems, 48-volt mild hybrid technologies, tire rolling resistance reductions, and HCR2 (high compression ratio second generation).[221] The fact that these estimates fail to reflect real-world effectiveness is clear from a review of prior EPA analyses and prior EPA vehicle test data (*see https://*epa.gov/compliance-and-fuel-economy-data**)** and data from vehicle manufacturers.[222] In contrast, it is not clear from the Proposal where the data used by the Agencies in the Argonne model used by the Agencies is from, or how the model produces its results. It is truly a "black box," which itself makes adequate public comment impossible. Further, the Agencies have not explained or justified their departure from their previous conclusions concerning the fuel economy and GHG-reducing benefits of these technologies. Nor have the Agencies explained or justified their departure from their prior approach of using their own vehicle test data. Finally, the Agencies have ignored the data from Tier-I parts suppliers (suppliers that sell entire subassemblies such as transmissions directly to automotive manufacturers), although this data is in the agency's possession or publicly available.[223]

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[219] U.S. EPA and NHTSA, EPA-420-D-16-900, Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025 at ES-8 (July 2016).

[220] The inflated compliance costs also lead the Agencies to inflate additional costs for insurance, registration, and sales taxes by the same proportion.

[221] See Expert Report by H-D Systems, attached to CARB Comments ("Review of Technology Costs and Benefits Utilized in the Proposed SAFE Rule") (Oct. 2018) (hereafter "H-D Report") at v, 21-25.

[222] *Id.* at 2-25, 43-51.

[223] H-D Report at 39.

In addition, the Agencies' underestimation of the effectiveness of technologies (particularly for conventional gasoline engines), leads to the faulty conclusion that much higher levels of "strong hybrid" vehicles than the Agencies previously forecast will be needed to meet the existing standards.[224] This error, in turn, inflates the Agencies' new estimates of the costs of compliance. And, as discussed immediately below, the effect of this inflation is further compounded by the Agencies' unsupported asserted increase in hybrid technology costs.

Inflated Technology Costs. In many instances, NHTSA and EPA also inflate the costs of technologies compared to the numbers they relied on in 2016. For example, in the Proposal, costs of hybrid technologies are 2 to 2.5 times greater than they estimated in 2016.[225] The importance of this number cannot be understated; because the Agencies substantially overestimate the amount of hybrids required to comply, the doubling of hybrid costs has an even greater effect on compliance costs.[226] The 2016 cost estimates were based on a series of studies, including teardown studies,[227] and retail price observations in the market.[228] There is no basis offered in the Proposal or PRIA for NHTSA's and EPA's new inflated cost estimate.[229] *See, e.g.*, PRIA at 378 (stating hybrid cost estimates without explaining difference from past findings). Those inflated estimates are, in fact, contrary to real-world facts, given that battery technology has become less expensive, not more expensive, over recent years.[230] Similarly, the Agencies' current costs for mass reduction and the HCR2 engine are much greater than they estimated in 2016.[231] The increases in costs are neither explained nor supported.

Cost-Effective Technologies Omitted and Ineffective Technologies Added. The Agencies are relying upon the Volpe model to assess compliance costs. The sole purpose of the model is to assess how much it will cost automakers to comply with various levels of fuel economy or greenhouse gas emission reduction requirements. It is evident that the model is unable to execute this task, and as such, reliance upon it is arbitrary. First, the model does not assess technologies by their cost-effectiveness, and therefore does not identify the most cost-effective compliance pathways. Second, the model assigns certain technologies little to no

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[224] Thus, while the Agencies determined in 2016 that the fleet would only have to be 2% strong hybrids (strong hybrids are vehicles such as the Toyota Prius) to meet the 2025 standards, the PRIA estimates that by 2026, 20 to 24 % of the fleet would have to include strong hybrids to meet the 2025 standards. H-D Report at v, 12.
[225] H-D Report at 3-4.
[226] H-D Report at v, 12, 13-14.
[227] *Id.* at 40-42. A teardown study is a piece-by-piece disassembly of a vehicle or subsystem in the vehicle (such as an engine), where every single piece is examined to determine its manufacturing costs and the total production cost.
[228] H-D Report at iii-v; *see also* States' Appx. C-40, at 2-3 (teardown studies discussed throughout).
[229] *Id*. at 19.
[230] See Expert Report by Gary Rogers, submitted to EPA Docket EPA-HQ-OAR-2018-0283 and to NHTSA Docket NHTSA-2018-0067 ("Technical Review of the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks") (Oct. 25, 2018) (hereafter "Rogers Report") at 10.
[231] H-D Report at v, viii, 25, 37, 42-43.

effectiveness—in other words, they do little or nothing to improve fuel economy or reduce greenhouse gas emissions—and the technologies are nonetheless added to vehicles and make them more expensive. Further undermining their analysis, the Agencies have hard-wired the model to prevent it from applying available technologies such as the Miller Cycle Engine, the High-Compression Ratio Atkinson Cycle, and the combination of turbo-charging with advanced cylinder deactivation in identifying compliance pathways.[232]

Constrained Technology Pathways. The CAFE model also constrains certain technology pathways, which force the combination of technologies in illogical ways that in turn, increase costs. For example, it forces application of cooled exhaust recirculation within the evolution of high compression ratio engines, resulting in almost no improvement to fuel economy at an excessively high cost.[233]

Comparing the CAFE model's results on a representative small SUV and a full-size pickup truck against model results based on engine maps actually used in the automotive industry shows how the Agencies' asserted compliance costs are substantially overstated. The more reasoned cost of complying with 2025 GHG and CAFE standards for a Toyota Rav4AWD is approximately 60 % less than predicted in the CAFE model ($1,767.06 instead of $4,422.26). The CAFE model overestimated the cost of compliance for a Ram 1500 4x2 by over 30 percent ($2,359.52 instead of $3,371.87).[234] Those examples do not represent average costs to comply (the average would take into account all models) but they do show the highly exaggerated costs to comply created by the Agencies' model.

Testing the Agencies' new conclusions against results from the lumped parameter model (used by the Agencies in 2016 and which is well-examined and reviewed model) also shows that the Agencies substantially overstated compliance costs, in part, due to underestimating the effectiveness of many technologies. The Agencies estimate that it would cost $5,020 to add enough technology to design a Chevy Equinox that achieves 52.3 miles per gallon, which is slightly above the projected 2025 existing standard for this vehicle of 51.7 miles per gallon. Data from the lumped parameter model shows, however, that the technology improvements the Agencies costed out would in fact achieve a rating of 57.55 miles per gallon. The lumped parameter model shows that to achieve a rating of 52.2 miles per gallon (and comply with the 2025 standards) would cost less than half of the Agencies' estimate (approximately $2,110) simply by removing the least cost-effective technology (HEVP2 and MR5, and ROLL30) applied by the model.[235, 236]

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[232] *Id.* at vi, 43-51.
[233] Rogers Report at 5, 10-11; H-D Report at 34-37.
[234] Rogers Report at 24-29.
[235] H-D Report at vii, 51.
[236] Even without performing the type of sophisticated analyses performed to compare the Agencies' pathways and costs to meet the existing standards, CARB was able to fix a few of the numerous modeling errors and find reductions of $600 in compliance costs. CARB Comments at Section V.

In sum, the Agencies' conclusions regarding the technology necessary to meet the 2025 standards and the cost of that technology run counter to the evidence before the agency, diverge from prior factual findings without explanation and without transparency as to the source of data relied on, and are unsupported by any reasoned analysis.[237] Such analysis bears many hallmarks of an arbitrary and capricious action. *See, e.g.*, *State Farm*, 463 U.S. at 43; *Fox Television*, 556 U.S. at 515; *Humane Soc. of U.S. v. Locke*, 626 F.3d 1040, 1049 (9th Cir. 2010).

b. The New Sales Model Also Errs by Failing to Account for Consumer Response to Fuel Economy Benefits

The second major flaw in the new sales model is that it operates as if the only change in vehicles is the increased price; it fails to consider how consumers will respond to the reduced cost of operating the vehicle from better gas mileage and therefore inaccurately predicts a decline in vehicle sales under the existing standards. The new sales model essentially operates under the theory that consumers would only consider increased vehicle costs and would not consider at all the corresponding fuel-cost saving. The NPRM states that:

> The analysis was unable to incorporate any measure of new car and light truck fuel economy in the model. . . .

83 Fed. Reg. at 43,075.

But certainly there are some fuel savings; indeed the average fuel savings from 2025 vehicles compared to 2021 vehicles are greater than the average compliance costs for a new vehicle. In 2016, the EPA calculated those fuel savings to $1,650 *above the costs of compliance costs* over the lifetime of the vehicle.[238] And given that fuel price forecasts have been relatively stable since 2016, the estimated fuel savings remains the same.[239]

The Agencies recognize that this is a flaw in their calculations because elsewhere they state that "consumers value most, if not all, of the fuel economy improvements when purchasing new vehicles" and cite to academic literature to support that conclusion. 83 Fed. Reg at 43,072-43,073. If consumers do value most of the fuel savings, then it is more likely they will purchase new vehicles, because the fuel savings will functionally reduce the price of the vehicle. The excuse that NHTSA and EPA use for failing to take fuel cost savings into account is that the new sales model "operates at a high level of aggregation" and that the "average fuel economy was not a meaningful value with respect to its influence on the total number of new vehicles sold." 83 Fed. Reg. at 43,075. But the inability to include fuel savings appreciation into the sale model does not excuse its omission. It simply demonstrates that the Agencies' model is not an accurate

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[237] CARB Comments at Section V.
[238] *See* States' Appx. C-39, EPA 2017 Determination, at 7.
[239] *See* Bethany Davis Noll et al., Institute for Policy Integrity, *Analyzing EPA's Vehicle-Emissions Decisions: Why Withdrawing the 2022-2025 Standards is Economically Flawed* 1-2 (May 2018).

predictor of behavior.[240] Basing a policy to roll back GHG emissions on a model that cannot take relevant factors into account is arbitrary and capricious. See *State Farm*, 463 U.S. at 43 (failing to consider an important aspect of the problem is arbitrary and capricious).

The Agencies' failure to consider the impact of fuel economy on consumer purchasing decisions is also contrary to the principles of behavioral economics, which examines economic questions by looking at actual human behavior, instead of assuming people perform as perfectly rational economic actors. Decades of research in that field inform us that when people are presented with a risky choice, they become loss-averse—they give greater weight to avoiding a loss than obtaining a gain. But when framing the choice appears to reduce the risk, that is, if loss-aversion is not triggered, people will have a more neutral valuation and make a different choice. So, for example, when presented with the question of whether to pay additional money for additional fuel economy technology, individuals become loss-averse because there is uncertainty in how much benefit the fuel economy technology will bring and the loss of the money is given greater weight. But when fuel economy standards require all new vehicles to be more efficient, the consumer's loss-aversion is not triggered. The consumer will then fully value the benefits of fuel economy.[241] Therefore vehicle sales should not decline due to the existing standards.[242]

Further, the relationship between price and vehicle sales is more complicated than the Agencies acknowledge. But certainly, the data does not support the conclusion that rising vehicle prices necessarily reduce sales. A rising average price for vehicles sold over the past several years (*see, e.g.*, 83 Fed. Reg. at 42,994) has coincided with a general increase in vehicle sales, with sales rising from 16,452,200 in 2014 to 17,464,800 in 2016 before slowing to 17,134,700 in 2017.[243] And as Figures VI-3 and VI-4 in CARB's Comments demonstrate, the number of new vehicles sold can increase when vehicle prices and fuel economy in vehicles rise.[244] In short, the Agencies' estimated sales data runs counter to the evidence even they presented. *State Farm*, 463 U.S. at 42.

c. The New Sales Model is Unreliable

EPA's comments to NHTSA during the interagency review process highlight several additional problems with the model that do not appear to have been addressed. First, EPA critiqued the use of the new sales model, noting that some commenters have discouraged the use

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[240] *See* Expert Report by David I. Greene attached to CARB Comments ("Consumers' Willingness to Pay for Fuel Economy: Implications for Sales of New Vehicles and Scrappage of Used Vehicles) (Oct. 10, 2018) (hereafter "Greene Report") at 2-3, 13.

[241] Greene Report at 2-3, 13.

[242] CARB's Comments also demonstrate how sales of ZEVs and other fuel-efficient vehicles are expanding. *See, e.g.*, CARB Comments at Section IV.C, VI.A, X.H; *see also* Appendix B: ZEV Penetration and Infrastructure Beyond California.

[243] *See* Statistica, Light vehicle retail sales in the United States from 1977 to 2017 (in 1,000 units), https://www.statista.com/statistics/199983/us-vehicle-sales-since-1951/ (last visited Oct. 16, 2018).

[244] CARB Comments at Section VI.A.

of sales models because they have not been validated.[245] Indeed, that had been EPA and NHTSA's joint position in the 2012 rulemaking (77 Fed. Reg. at 62,914, 62,949) and 2016 TAR,[246] and the Agencies fail to explain the basis for their change in position. Nor, as EPA's comments point out, had the sales model been peer reviewed at the time of interagency review,[247] and there is no evidence that is has since. This runs contrary to both EPA's and NHTSA's own procedural rules and guidelines, as well as those from the Office of Management and Budget (OMB) which require that agencies use peer-reviewed or validate models in their rulemakings.[248] Further EPA's comment raised the need to test the model to validate its usefulness, noting that even "reasonable" models can predict badly. EPA's concerns were justified. Here, the Proposed Rollbacks reveals that the Agencies' new sales model is unable to predict sales accurately. Table II-32 (83 Fed. Reg. at 43,076) demonstrates that the sales model forecasts have under-predicted vehicle sales when compared to historical data: underestimating 2016 sales by 1.2 million out of 17.55 million; and understating 2017 sales by 400,000 out of 17.25 million sales). When compared to the sales model's predictions of reduced sales of 100,00 to 200,000 per year, those appear to be substantial errors.

The new sales model has structural errors built into it. For example, as CARB notes, the coefficients in the PRIA did not match the CAFE model source codes. When adjusted to match, the model results in a negative fleet population and then crashes. On September 11, 2018, CARB informed NHTSA about its error. Not until October 23, 2018, three days before all comments would be due, did NHTSA inform CARB that it repaired the error.[249] In addition, two economists found three technical problems with the sales model that result in erroneous sales reduction conclusions. First, the autoregressive distributed lag (ADRL) model uses estimates that should be interpreted as quarterly effects but which they interpreted as yearly effects, which means that lost sales would be on the order of 30% of the NPRM modeled effect. Second, the model should not be used to estimate demand for new vehicles because the supply and demand are simultaneously estimated; it would be inappropriate to use the results to understand the causal effect of increases in new vehicle prices on new vehicle sales. And third, the ADRL model does not make quality adjustments when considering vehicle price and consumer preferences.[250]

Ultimately, in EPA's critique of the new sales model, it stated that it does not agree with the conclusion that the Proposed Rollback "would increase total sales of new cars and light

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[245] *See* U.S. EPA, Docket ID EPA-HQ-OAR-2018-0283-0453, EO 12866 Review: EPA comments on the NPRM sent to OMB, June 29, 2018 at 122.
[246] *See* States' Appx. C-40, TAR.
[247] NHTSA, CAFE Model Peer Review, DOT HS 812 590 (July 2018) at 223, 303.
[248] See EPA, Science and Peer Review Handbook (EPA/100/B-15-001, 4th ed. 2015); Dept. of Transportation Policy Statement and Guidelines (August 2002) at 16; OMB Guidelines, § V.3.b.ii.C, published at 67 Fed. Reg. at 8460.
[249] CARB Comments at Section VI.A.
[250] Comment Letter of Kenneth Gillingham and James Stock,"Comments on the Effect of Fuel Economy Standards on New Vehicle Sales," submitted to Docket Number EPA-HQ-OAR-2018-0283 on October 26, 2018.

trucks during future model years."[251] In spite of EPA's objection, the Proposed Rollback still includes the conclusion. It simply removed the language in the draft that the "agencies believe" that rollback would increase sale and replaced it with "it is reasonable to assume" that the rollback would lead to increased sales. See 83 Fed. Reg. at 43,075. Such glossing over cannot hide the obvious problems with the model, or with EPA's own fundamental disagreements with the analysis it is relying upon to justify the rollback of its vehicle emission standard.[252]

For the reasons discussed above and additional reasons discussed at more length in CARB's Comments and the expert reports attached thereto, the Agencies' assumptions, modeling and conclusions about the existing standards' impacts on costs and new vehicle sales render the entire Proposal arbitrary and capricious. *Fox Television*, 556 U.S. at 515.

2. NHTSA and EPA Misstate the Societal Impacts of the Proposed Rollbacks

NHTSA and EPA seek to justify the Proposed Rollback's substantial increase in oil consumption and GHG emissions, claiming that flatlining the model year 2021-2026 standards will reduce highway fatalities by up to 12,700 over the lifetime of vehicles through 2029 and save over $500 billion in societal costs. 83 Fed. Reg. at 42,995, 42,998. The Agencies' claims are beyond arbitrary and capricious, they grossly mislead the public.

a. NHTSA and EPA Falsely Claim that GHG and Fuel Economy Standards Will Result in 12,700 to 15,600 Vehicle Fatalities.

EPA and NHTSA's claim that thousands of deaths will result from the existing standards does not withstand scrutiny.[253] Their claim that those standards would result in increased fatalities due to greatly reduced scrappage of older vehicles (leading to illogical growth in the size of the fleet and total vehicle miles traveled), mass reduction in new vehicles (in ways that reduces safety), and significant increases in the miles driven by new vehicle owners (known as "rebound") is, in fact based on a never before used, un peer-reviewed model that incorporates illogical assumptions and fails to use real world data.

These same issues—rebound, scrappage, and mass reduction—arose in *Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie*, 508 F.Supp. 295 (D. Vt. September 12, 2007). There the court rejected those same claims made by the plaintiff opposing GHG emissions standards because, the court determined, any negative impacts from the regulation would result from changes in consumer behavior, not from the regulations. *Id.* at 391-92. The court was right, and nothing has changed since then.

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[251] U.S. EPA, Docket ID EPA-HQ-OAR-2018-0283-0453, EO 12866 Review: EPA comments on the NPRM sent to OMB, June 29, 2018, at 130.

[252] The Agencies' dynamic fleet share model is also problematic, due to modeling errors that invalidate its results. *See* CARB Comments at Section VI.A. Therefore, there is no basis to assume any fatalities from a switch in type of vehicles purchased.

[253] The Agencies claim 12,700 fatalities from the CAFE standard or 15,600 fatalities from the GHG standard. 83 Fed. Reg. at 43152, 43,257.

(1) NHTSA's Scrappage Model is Flawed

NHTSA and EPA claim that the existing standards would increase fatalities compared to the Proposed Rollback by slowing the rate of scrappage of older vehicles, thereby increasing the overall size of the vehicle fleet and, by their estimation, total vehicle miles traveled. Specifically, the Agencies claim that fatalities will increase by 221 on average annually for calendar years 2036-2045, or 7,880 during the life of model year vehicles 1977 to 2029. 83 Fed. Reg. at 43,154, Table II-75; 83 Fed. Reg. at 43,157, Table II-77. There is no reasoned economic or other analysis that can justify these numbers. The Agencies rely on unsupportable assumptions, incorrect facts, and a model NHTSA created for this rulemaking that was so poorly constructed that its results are meaningless.[254]

The scrappage model only examines one thing—the effect of new vehicle prices on the scrappage of existing vehicles, based on the theory that when new vehicle prices increase, existing vehicle prices also increase. The Agencies then assert that this leads individuals with vehicles near the end of their useful lives to decide to delay the scrappage of those vehicles. The Agencies' scrappage model outputs create results that do not make sense and are unexplained.

First, the Agencies' fleet size conclusions are dubious. They claim that by 2035, the vehicle fleet in the United States would be 9 million vehicles larger in 2035 than it would be if the current GHG and fuel economy standards were rolled back. 83 Fed. Reg. at 43099. That would occur, the Agencies argue, because for every new vehicle not sold under the existing standards (that would be sold under the Rollbacks), there will be two to four old vehicles not scrapped. 83 Fed. Reg. at 43,098-99. In interagency discussions, EPA complained the model inaccurately and unrealistically showed that there would be 60 vehicles not scrapped for every new vehicle not sold,[255] and CARB's analysis shows the model produces a ratio of 4 to 23 old vehicles not scrapped per each new vehicle not sold.[256] The Agencies' fleet size projections under either standard—whether the existing standards or Proposed Rollbacks—are highly suspect, given that their fleet size projections under the existing standards are about 50 million

[254] As noted above, CARB's Comments go into more detail on technical subjects, including the scrappage model. *See* CARB Comments at Section VI.B, D.
[255] *See* EPA-HQ-OAR-2018-0283-0453, Attachment 5, at 5.
[256] CARB Comments at Section VI.B.

vehicles larger than the projection created by the U.S. Department of Energy's Energy Information Agency's ("EIA")[257] Annual Energy Outlook ("AEO") for 2032.[258]

After predicting a larger fleet due to reduced scrappage, the Agencies claim that vehicle miles traveled will increase. The Agencies include an erroneous number for the increase (it appears to be a cut and paste error).[259] So using the Agencies' flawed model, CARB calculated the Agencies' suspected increase in vehicle miles traveled from the Proposed Rollback in model year vehicles 1977 to 2029 to be approximately 979 billion miles (through model year 2029) for the GHG standards.[260]

The Agencies do not and cannot plausibly explain why the fleet size would grow so dramatically under the existing standards—particularly when prices increase—or why people would suddenly have the need or the urge to drive significantly more miles in their older vehicles.[261] These implausible figures pertaining to fleet size and vehicle miles traveled undermine the Agencies' conclusion that the existing standards would increase fatalities relative to the Proposed Rollback.

As explained by multiple economic experts in reports submitted with CARB's comments (including from three economists whose works NHTSA cites),[262] the fleet size results of the scrappage model contradict basic economic principles. For example, in a situation where new

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[257] The EIA is the statistical and analytical agency within the U.S. Department of Energy. EIA collects, analyzes, and disseminates independent and impartial energy information to help promote unbiased policymaking and public understanding regarding energy and its interaction with the economy and the environment. EIA is the Nation's premier source of energy information and, by law, its data, analyses, and forecasts are independent of approval by any other officer or employee of the United States Government. John Maples Testimony to The Future of Transportation Fuels and Vehicle Subcommittee, March 7, 2018, https://docs.house.gov/meetings/IF/IF18/20180307/106958/HHRG-115-IF18-Wstate-MaplesJ-20180307.pdf.

[258] CARB Comments, Figure VI-17, Section VI.B.

[259] Expert Report of Mike Van Auken attached to CARB Comments, "Comments on the Preliminary Regulatory Impact Analysis of the Proposed Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021-2026 Passenger Cars and Light Trucks" (Oct. 2018) (hereinafter "Van Auken Report") at v, 11. Van Auken explains in his expert report that the vehicle miles traveled for the CAFE standards are identical to the vehicle miles traveled for the GHG standards. 83 Fed. Reg. at 43,662-64. That does not make sense and must be an error from cutting and pasting. Van Auken Report at v.

[260] CARB Comments at VI.B.

[261] Indeed, under EPA and NHTSA's own rebound theory, people would be tempted to drive more miles when they have newer, more fuel-efficient vehicles, not older ones. *See S*ection III.E.2.a(3).

[262] EPA-HQ-2018-0283-2650, Comment of Mark Jacobsen & Arthur van Benthem (Oct. 8, 2018) (hereafter Jacobsen and van Benthem Comments). *Compare* 83 Fed. Reg. at 43,093, 43,094; *see also* EPA-HQ-OAR-2018-0283-0756, NHTSA-2018-0067-11598, Comment of Antonio Bento (Oct. 22, 2018).

vehicle prices increase and vehicle sales decline, and used vehicle prices increase (as the Agencies purport will happen under the existing standards), the total vehicle fleet on the road would be expected to decline, not to radically increase. And people who could not afford to purchase a vehicle will likely rely on the vehicle they own (if they own more than one) and/or rely more on public transportation.[263] By contrast, if new vehicles and existing vehicles become less expensive, more people may buy them. Thus, under the Agencies' cost and sales assumptions (i.e., that the Proposed Rollback would reduce prices of new and existing vehicles and increase sales of new vehicles), "all the evidence and economic logic points to a larger total vehicle fleet under a rollback, at odds with NHTSA's fleet turnover model."[264]

Nor is there any reasoned basis to conclude that vehicle miles traveled would increase in direct proportion to the size of the vehicle fleet (i.e., that the 9 million additional cars would be driven a set, predictable amount based on their age). Merely adding a vehicle to a household does not increase driving demand.[265] Before the Agencies finalized the Proposal, EPA identified that problem as well. It stated that if VMT schedules are adjusted upward because of the increased size of the fleet, then the effect of the error in fleet size "is to erroneously inflate the total VMT" and increase the number of fatalities.[266] Even the Proposed Rollback states that in a scenario where people delay scrappage and add a vehicle to their household fleet, the number of household vehicles "have to serve the family's travel demand." 83 Fed. Reg. at 43,135. That leaves unanswered the question as to why household demand would increase.

As the Agencies recognize, use of a model that contradicts basic economic theory is directly contrary to OMB requirements that "benefits and costs reported in regulatory analyses must be defined and measured consistently with economic theory." PRIA at 933. The model's use here, then, is highly suspect.

Indeed, the fact that the scrappage model leads to implausible results is not surprising. It is deeply flawed both in its construction and in its inputs. Initially, the new vehicle prices it input are excessive because—as noted above—the Agencies vastly inflated the cost of compliance. That would substantially affect the model outputs. Structurally, the flaws are

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[263] *See* Expert Report of Kenneth Gillingham attached to CARB's Comments ("How Fuel Economy Standards Affect Fleet Turnover and Used Car Scrappage: Comment on the Safer Affordable Fuel-Efficient (SAFE) Vehicles Proposed Rule for Model Years 2021-2026 Passenger Cars and Light Trucks") (Oct. 25, 2018) (hereafter Gillingham Fleet Turnover Report) at 5; *see also* Jacobsen and van Benthem Comments at 2.

[264] *See* Jacobson and van Benthem Comments at 2; *see also* Gillingham Fleet Turnover Report at 2. Jacobsen and Benthem also note in a footnote that the Agencies argue that the "leakage" in the current NHTSA scrappage model of 12-18% coincides with their own analysis of 15% is simply wrong because the two leakage rates are not comparable to the same starting rates. Jacobson and van Benthem Comments at 3, n.3.

[265] *See* Gillingham Fleet Turnover Report at 8; *see also* expert report of Susan Handy attached to CARB Comments, "Potential Federal Actions to Reduce Vehicle Travel" (Oct. 16, 2018) (hereafter Handy Report), at 3.

[266] *See* States' Appx. C-50; EPA-HQ-OAR-2018-0283-0453, Document titled "Further Review of CAFE Model & Inputs" (June 18, 2018) at 6 (pdf p. 4).

numerous. The scrappage model is not connected to the sales model, so it does not take into consideration the sales model's projections of new vehicle sales.[267] It only bases new sales forecasts on the average incremental increases in compliance costs for the entire fleets of new vehicles, which is insufficient to adequately capture behavioral responses of consumers.[268] The model also does not link the new and used vehicle markets as required by economic theory, nor does it attempt to measure used vehicle prices, which form the basis of scrappage theory (i.e., if used vehicle prices increase, then people will be less likely to scrap their vehicles). Instead it uses new vehicle prices as a proxy for used vehicle prices, without considering the myriad of other factors affecting used vehicle prices.[269] But that does not operate as a good substitute for older used vehicle prices. Nor does the model input repair costs, an essential element for measuring scrappage (when it is less expensive to repair an older vehicle than purchase a newer one, then one may decide not to scrap one's own vehicle).[270]

The model then squeezes in too many variables (known as "overfitting") to achieve the Agencies' desired results. Further, the data used by the Agencies includes extraneous information that does not go to what is being modeled (referred to as "noisy" data).[271] "Noisy" data particularly affects the analysis of vehicles between 18 and 22 years old, which is where the model shows the largest gap between scrappage rates under the existing standards and under the Proposed Rollbacks.[272] The model also includes many correlated explanatory variables resulting in a "multicolinearity" problem. (Multicolinearity makes it difficult to isolate the true effect of an independent variable.)[273] The scrappage model is rife with a series of additional errors.[274] Academic researchers have determined that, as a consequence, the scrappage model is unreliable for making inferences and testing hypotheses.[275] Finally, the difference between scrappage under the existing standards and the Proposed Rollback that the model purports to find falls within the range of statistical error, based on the quality of the data used in the model.[276] Both

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[267] EPA raised this as a concern with NHTSA in June 2018 when it reviewed the model. As EPA described it, "there is no mechanism within the CAFE model to reconcile the combined effects of the sales and scrappage models in order to produce a realistic total fleet of registered vehicles." *See id.* at 4 (pdf p. 13).

[268] Expert Report of David Bunch, attached to CARB Comments, ("An Evaluation of NHTSA's Economics-based Modeling and Implications for Benefit-Cost Analysis in the NHTSA/EPA August 24, 2018 Notice of Proposed Rulemaking (NPRM"), (Oct. 24, 2018), (hereinafter "Bunch Report") at 7.

[269] *Id.* at 6-7.

[270] CARB Comments at Section VI.B.

[271] *Id.*; *see also* Bunch Report at 10-11; *see also* Greene Report at 23 n.15.

[272] Bunch Report at 10-11.

[273] Greene Report at 16 (providing an example of how, in one instance, the model uses eight variables that are statistically significant and eleven that are not).

[274] Bunch Report at 7-13 and throughout; Bunch is a professor at the University of California Davis Graduate School of Management and is an expert in discrete choice modeling methods and simulation models of vehicle market behavior.

[275] Bunch Report at 7-13.

[276] *Id.* at 11, 65-67.

scrappage curves lie within each projection's 90% confidence band. That calls into serious question the validity and usefulness of the scrappage model.[277]

In short, the scrappage model's development, design, and validation all fail to reflect best practices and as such, its predictive abilities are wholly unreliable.[278] It would be arbitrary and capricious to rely on a model does not support the conclusions it purports to represent, especially when that model is challenged and the agency does not provide a full analytical defense of it. *Columbia Falls Aluminum v. EPA*, 139 F.3d 914, 923 (D.C. Cir. 1998) (citing *American Iron & Steel Industries v. EPA*, 115 F.3d 979, 1005 (D.C. Cir. 1997) and *Eagle-Pitcher Indus., Inc. v. EPA*, 759 F.2d 905, 921 (D.C. Cir. 1985.)

And finally, as a matter of policy, it is inappropriate to base a rollback on the claim that people would drive more under the existing standards than they would under Proposed Rollbacks (though the question of why they would remains a mystery). The Agencies actually explain why. When discussing the rebound effect (see below), the Agencies recognize that the regulations do not compel people to drive more. If people drive more under the regulations, they do so because they choose to. There is social utility to that increase in mobility. Thus, as with the Agencies' analysis of the rebound effect, they should offset the societal cost of increased fatal and non-fatal accidents resulting from increased vehicle miles traveled with the social benefit from the additional travel. Thus, the Proposed Rollback's failure to use internally consistent approaches to the problem it seeks to address renders it arbitrary and capricious. *Air Transport Ass'n of America v. Department of Transportation*, 119 F.3d 38, 43 (D.C. Cir. 2015.)

(2) The Agencies Estimates of Increased Fatalities from Mass Reduction Are Neither Supportable Nor Statistically Significant

NHTSA and EPA claim that rolling back GHG emissions standards will reduce highway fatalities by 56 people annually or by 468 people during the operation of model year 1977-2029 vehicles because vehicle manufacturers will not have to reduce the mass of its vehicles to meet the more stringent standards. *See* 83 Fed. Reg. at 43,154, Table II-75; 83 Fed. Reg. at 43,157,

[277] For instance, CARB tested the validity of the scrappage model and found some illogical results. It ran the model under two scenarios, one where new vehicles only consisted of passenger cars and one where new vehicles only consisted of light trucks. The scrappage rates under the former scenario were similar to the default fleet share assumptions. But when measuring light trucks only, the model created vehicle populations that are about one-tenth of the default case. *See* CARB Comments at Section VI.B. Bunch also finds that while the elasticity of scrappage estimates (the percentage change in scrap rates for a one percent increase in new vehicle prices) should fall within approximately 0 to -3, the scrappage model elasticity estimates show wild variation, taking on wild variations both above and below 0. Those do not make sense and are inconsistent with economic theory. Bunch Report at 12-13.

[278] Greene Report at 16; Bunch Report at 7-14.

Table II-77. That would be roughly a 0.15 % change in annual fatalities when compared to the 40,100 fatalities in 2017 that the National Safety Council reported.[279]

Other statements by NHTSA and EPA belie their own claim. They separately point out that none of the specific mass reductions in any of the five types of vehicles (light automobiles, heavier automobiles, CUVs and minivans (light trucks and SUVs), and heavy trucks show a statistically significant effect on fatalities to a 95 % confidence level. Only two show an effect to an 85 % confidence bound. 83 Fed. Reg. at 43,111. Because this type of statistical analysis requires a 95 % confidence level[280], the Agencies' analysis indicates that the current GHG standards could result in greater fatalities due to mass reduction, or they could result in *fewer* fatalities. In other words, the results NHTSA and EPA obtained from their mass reduction analysis are statistically insignificant.[281] As NHTSA and EPA recognize, and expert review confirms, the type of mass reduction the Agencies suggest may occur under the existing standards could reduce or increase the number of fatalities by a small number that cannot be reliably distinguished from zero.[282]

Another expert in the field published an analysis showing that mass reduction effects would be small and statistically insignificant (could result in increased or decrease fatalities).[283] Directionally, the expert's analysis showed that reducing vehicle mass would save lives. Indeed, under each of the eight scenarios, reducing mass of vehicles saved from 39 to 1,737 lives (six of the eight scenarios showing fatality reductions of 39 to 225 lives).[284] But because each of the studies derived statistically insignificant data, it would be incorrect to ascribe greater or fewer fatalities to mass reduction, much less to base public policy on an assumption that fatalities would increase.

Even though historical data show mass reduction will have a negligible impact on fatalities, new design may change that for the better. Vehicle manufacturers can make vehicles safer as they make them lighter by using better designs and high-strength materials.[285]

Basing the Proposed Rollback on claims of fatalities that even the Agencies admit they cannot establish is arbitrary and capricious. *State Farm*, 463 U.S. at 43.

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[279] *See* https://www.nsc.org/road-safety-topics/fatality-estimates.
[280] Van Auken Report at 12.
[281] *Id.* at 38. Note that EPA acknowledges in the Proposed Rollback that Van Auken is an expert on mass reduction effects. *See* 83 Fed. Reg. at 43,110, fn. 304; *see* also *id.* at 43,132.
[282] Van Auken Report at 43
[283] *See* Tom Wenzel, Assessment of NHTSA's Report "Relationships Between Fatality Risk, Mass, and Footprint in Model Year 2004-2011 Passenger Cars and LTVs," (LBNL Phase 1) (LBNL-2001137, Lawrence Berkeley Laboratory, Berkeley, CA March 2018), at 88-91. Wenzel's study is included in the EPA Docket (Docket No. EPA-HQ-OAR-2015-0807-11039-2) and may be found on https://crashstats.nhtsa.dot.gov/API/Public/ViewPublications 1811665.
[284] *Id.*
[285] *See*, *e.g.*, CARB Comments at Section VI.D.

(3) The Agencies' Doubling of their Prior Rebound Estimate Based Largely on the Same Evidence is Arbitrary and Capricious

EPA and NHTSA improperly argue that, in comparison to the Proposed Rollback, the existing GHG standards will lead to 872 more fatalities annually, or 7,300 more fatalities during the lifetime of model year 1977-2029 vehicles, due to the "rebound effect." 83 Fed. Reg. at 43,154, Table II-75 and 83 Fed. Reg. at 43,157, Table II-77. Both the factual and policy underpinnings of that conclusion are indefensible.

The "rebound effect," is premised on the idea that people will adjust the amount of their driving in response to increases or decreases in the cost of driving. It is typically measured in percentages. A rebound of effect of 5% generally means that for every one percent increase in the cost of driving, there will be a 0.05% decrease in vehicle miles traveled. Conversely, for every one percent decrease in the cost of driving, there will be a 0.05% increase in the amount of driving. The cost of driving may be affected by swings in fuel prices or, as here, an increase in fuel economy that effectively makes it cheaper for a person to drive.[286]

In 2012 and 2016, EPA and NHTSA concluded that the rebound effect from the existing standards is 10%, based on many of the same studies considered in the Proposed Rollback].[287] In 2018, however, EPA and NHTSA doubled their estimate of the rebound effect, placing it at 20%. 83 Fed. Reg. at 43,104. Consequently, the Agencies posit that there will be more fatal and non-fatal crashes under the existing standards because driving will become more affordable under the existing standards. As discussed below, the Agencies do not begin to offer adequate reasons for doubling the rebound effect, and indeed, EPA strongly disagreed with it in interagency discussions. *Fox Television*, 556 U.S. at 515 (agency must show there are good reasons for reversing a prior position).

While NHTSA and EPA make sure to highlight fatalities they claim will result from the rebound effect, they also concede that fatalities and increases in non-fatal accidents from such additional driving should *not* be a basis for rolling back GHG emissions and CAFE standards. They conclude that increased driving from the rebound effect is not imposed on consumers by the regulations but rather is a matter of personal choice. The NPRM states:

> [I]mproved CAFE will reduce driving costs, but nothing in the higher CAFE standards compels consumers to drive additional miles. If consumers choose to do so, they are deciding that the

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[286] *See, e.g.*, Expert Report of Kenneth Gillingham, attached to CARB's Comments ("The Rebound Effect of Fuel Economy Standards: Comment on the Safer Affordable Fuel-Efficient (SAFE) Vehicles Proposed Rule for Model Years 2021-2026 Passenger Cars and Light Trucks") (Oct., 2018) ("Gillingham Rebound Report"); *see also* 83 Fed. Reg. at 43,107. Because the rebound effect influences vehicle miles traveled, the proper estimate of it affects not only fatalities but also fuel consumption and emissions of criteria pollutants as well as GHGs.

[287] 77 Fed. Reg. at 62,716; *see also* States Appx. C-40, TAR at 10-20.

> utility of more driving exceeds the marginal operating costs as well as the added crash risk it entails.

83 Fed. Reg. at 43,107. Therefore, NHTSA and EPA fully offset the societal cost of fatal and non-fatal collisions resulting from the rebound effect with the societal benefit of the rebound effect. 83 Fed. Reg. at 43,313, Table VII-51. That said, the Agencies still include their projected increase in fatalities from a rebound effect in the top line "increased fatalities" figure presented to the public in the Proposed Rollback and prominently featured in their "Fact Sheets."[288]

The Agencies' decision to offset the costs were reasonable because there is a societal benefit to consumers being free to drive more if they choose.[289] But along with that freedom comes risk. Certainly, for decades it has been the practice of United States policymakers to accept that risk when taking steps to make transportation more affordable, such as seeking to reduce fuel prices. President George W. Bush sought energy policies that would reduce the price of fuel over time.[290] So, too, did congressional leaders at the same time, when they enacted EISA.[291] President Trump has requested that Saudi Arabia produce more oil so that fuel prices in the United States can decrease.[292] The Proposed Rollback also states that "[a]ll things equal, consumers benefit from vehicles that need less fuel to perform the same amount of work." 83 Fed Reg. at 43,210. Presumably EPA and NHTSA are not currently advocating increasing the cost of driving to protect people from the risks entailed in driving, even though they support a rollback of GHG emissions and CAFE standards. In effect, the agencies are trying to have it both ways: ignoring the benefits of the existing standards while attributing to the standards the increased risks inherent in driving.

Regardless, the Agencies' new claim that the rebound effect is 20 %—or double their previous finding—is indefensible. They argue that their 2012 and 2016 conclusions pertaining to the rebound effect were based almost exclusively on a 2007 study by Small and Van Dender, finding the rebound effect was essentially 11 % and decreasing. 83 Fed. Reg. at 43,103-43,104. The Agencies also claim that the "central tendency" of all rebound studies is around 22-23 %. 83 Fed. Reg. at 43,100. But in 2018, they fail to cite several recent rebound studies that do not

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[288] NHTSA, Fact Sheet: MYs 2021-2026 CAFE Proposal – by the Numbers, https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/rev_fact_sheet_cafe_nprm_by_the_numbers_003-tag.pdf (Aug. 2, 2018.)

[289] Gillingham Rebound Report at 10.

[290] *See* 2007 State of the Union Policy Initiatives, Twenty In Ten: Strengthening America's Energy Security, https://georgewbush-whitehouse.archives.gov/stateoftheunion/2007/initiatives/energy.html.

[291] *See* 153 Cong. Rec. S7586 (daily ed. June 13, 2007) (statement of Sen. Thune), https://www.congress.gov/crec/2007/06/13/CREC-2007-06-13-pt1-PgS7582-2.pdf; *see also* 153 Cong. Rec. H16748 (daily ed. Dec. 18, 2007) (statement of Speaker Pelosi), https://www.congress.gov/crec/2007/12/18/CREC-2007-12-18-pt1-PgH16659.pdf.

[292] *See* Thomas Heath, *Trump urges OPEC to drive down oil prices*, THE WASHINGTON POST, Sept. 20, 2018, https://www.washingtonpost.com/business/2018/09/20/trump-urges-opec-drive-down-oil-prices.

support a 20 % rebound effect. That is arbitrary and capricious. *Genuine Parts Co. v. EPA*, 890 F.3d. 304, 307 (D.C. Cir. 2018).

Moreover, the Agencies fail to give appropriate weight to studies: (1) that examine the impact of fuel economy standards, as opposed to the impact of fuel price changes (people respond to price changes differently than to fuel economy standards)[293], (2) that are conducted in the United States (European drivers and driving conditions are different than American drivers and conditions in important and relevant ways), or (3) that rely on superior data sets (such as those based on odometer readings instead of self-reported travel diaries) and on data from time periods other than the Great Recession of 2008-2009, which had wildly fluctuating fuel prices among other confounding economic variables.

In April 2018, EPA reviewed NHTSA's 20 % rebound figure and heavily criticized it on many of these same grounds.[294] EPA pointed out that not all studies are equal in quality or relevance, and that simply averaging them was not a sensible way of determining the rebound effect when making policy. Instead EPA recommended relying on studies that are based on data sets that are more recent, that are larger (or national) in scale rather than local, that are multi-year rather than single year, and that are more reliable because they are based on objective odometer readings. EPA also recommended giving greater weight to studies that avoid relying on NHTSA data collected in 2009 due to the unique circumstance posed by the Great Recession when fuel prices fluctuated dramatically (from $3.30 per gallon in March 2008 to $4.10 in the summer of 2008, to $1.70 in late 2008/early 2009), GDP fell, and unemployment increased from 4 to 10 %.[295] At the time, EPA recommended as most compelling and relevant Hymel and Small's 2015 study finding a rebound range from 4-18 %[296] and Greene's 2012 study finding a rebound effect of 10 %. (As will be seen below, it actually found a rebound effect of 4% or less.) In the Proposed Rollback, EPA has not explained why it's prior criticisms of NHTSA's analysis are no longer valid, nor can it.

A brief review of the studies relied on in the Proposed Rollback's "averaging" exercise shows why it is clearly inappropriate to consider many of these studies. Indeed, some of the authors of those studies have *themselves* stepped forward to say they should not be used here or that at least should be given less weight.

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[293] Gillingham Rebound Report at 8.
[294] *See* EPA-HQ-OAR-2018-0283-0453, "EPA Review of CAFE Model with 'GHG' Setting (8-Mar Ver.)," at 27-33 (pdf pp. 116-22).
[295] *Id.* at 29-31 (pdf pp. 118-20).
[296] EPA twice tried to correct NHTSA's mischaracterization of Hymel and Small's rebound effect conclusion. EPA stated that the authors found a 4-18 % effect, not an 18 % effect cited in the Proposal. *See id*. at 32 (pdf p. 121); EPA-HQ-OAR-2018-0283-0453, EO 12866 Review: EPA comments on the NPRM sent to OMB, June 29, 2018, at 122.
83 Fed. Reg. at 43,101.

- Six studies that skew the results upward are of minimal value because they do not purport to measure the rebound effect in the U.S. transportation system but instead measured the rebound effect in other countries;[297]

- The rebound numbers from Bento (21-38 %)) are based on old 2001 data taken from travel diaries (not odometer readings) and is otherwise limited in its value.[298] More importantly, the author of the study does not believe the paper can be used to imply a particular rebound effect for fuel economy. He believes that the more appropriate rebound effect for fuel economy ranges between 10 and 15%, with more recent evidence suggesting the lower level of 10% is more realistic.[299]

- The rebound numbers from West and Pickrell (9-34 %) should not be given any weight because they did not publish their paper (and it has not been subject to peer review), it is unclear how they obtained their results, and they use data from 2009, the year of the Great Recession and wildly fluctuating fuel prices;

- The rebound numbers from Linn (20-40 %) are based on less reliable self-reported travel diaries. The author himself cautioned against the simple averaging of studies, and even in a weighted averaging would not give too much weight to studies such as his own that are limited to a year, as opposed to those lasting over the lifetime of the vehicles, particularly when trying to estimate the rebound effect for fuel economy, as opposed to for fuel prices.[300] Finally, Linn also relied on 2009 NHTSA data (relying on 2008-2009 information), which has the limitations that EPA recognized (data from the Great Recession, including wild fluctuations in prices);

- The rebound numbers from Liu et al. (40 %) should also be given little weight since one of its authors, Cinzia Cirillo found that it did not contain an analysis of the rebound effect for fuel economy standards but rather focused on responsiveness to fuel price changes.[301] This study was based on 2009 NHTSA data from the Washington D.C. metropolitan area only, measuring driving during a time when fuel prices rose dramatically and then fell (from March 2008 to April 2009);

- The rebound numbers from Gillingham 2014 (22-23 %) measured the effect of fuel price shocks in in California, not changes in fuel economy standards, and is therefore of little purpose here.[302] By contrast, Gillingham measured the effect of

[297] *See* 83 Fed. Reg. at 43,101, (Table II-44), citing Barla (Canada, 8-20%), Anjovic and Haas (E.U., 44%), Frondel and Vance (Germany, 46-70%), Weber and Farsi (Switzerland, 19-81%), DeBorger (Denmark, 8-10%), and Stapleton (Great Britain, 14-30%).
[298] *See* Gillingham Rebound Report at 82.
[299] *See* NHTSA-2018-0067-11598, Comment of Antonio Bento (Oct. 22, 2018).
[300] *See* EPA-HQ-OAR-2018-0283-2698, Comments of Joshua Linn (Oct. 11, 2018) at 1-3.
[301] *See* NHTSA-2018-0067-7819, Comments of Cinzia Cirillo Comments (Oct. 18, 2018) at 1-2.
[302] *See* Gillingham Rebound Report at 14-15.

changes in fuel economy (not fuel prices) in California using odometer readings from 2001-2009, he found a rebound effect of *one percent*.[303] NHTSA and EPA inexplicably omit the latter study; and

- Hymel and Small should either be recognized as showing a 4-18 % rebound effect (an average of 11 %) or a 4 % rebound effect. As explained by Small, the study cited found a "long-run rebound effect of 18 % under a simpler model *but a 4.0 % or 4.2 % effect under two, more realistic, models that are supported by the data*."[304] He also noted that he found the 4.2 % effect would decline to 1.0 % by 2025 and lower thereafter.[305] EPA also recognized that the Hymel and Small study suggests the rebound effect should be 4% for falling fuel prices, which, of course, are more similar to increased fuel economy than increased fuel prices

The Agencies have abandoned their prior analysis of rebound research, which recognized the differences in the quality and relevance of different studies and weighted them accordingly. That is arbitrary and capricious. *See Genuine Parts*, 890 F.3d at 307. Instead, they have ignored relevant research they previously considered and given equal weight to studies that they know are not as relevant or reliable but that have a high rebound number. Their analysis is entitled to no deference. *Vill. Of Barrington, Ill. V. Surface Transp. Bd.*, 636 F.3d 650, 660 (D.C. Cir. 2011).

An expert report prepared by Kenneth Gillingham attached to CARB's comments demonstrates how the inclusion of more recent studies not considered by the Agencies, as well as a proper weighting of other relevant studies (similar to the weighting EPA had initially suggested) leads to very different results than the Agencies found.[306] That report finds the average rebound effect measured with odometer studies (the expert's and EPA's recommended data set) is about 8.1%. He also found that all but one of the studies measuring the rebound effect of changes in fuel economy (as opposed to fuel price changes) fall below 10%. And the one that does not is Linn's study, which Linn himself cautioned against using when compared to odometer readings (see above). And even including studies based on travel diaries or data sets during the Great Recession (even including the Linn, Liu et al., and Bento studies which the authors caution are inapplicable or should be given little weight) shows a rebound effect of 14.1%.[307] Thus, Gillingham concludes that the literature upports a conservative (i.e., using a higher value out of an abundance of caution) rebound effect of 10%, a number consistent with the one EPA and NHTSA used in 2016.

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[303] *Id.* at 1, 11-12.
[304] *See* EPA-HQ-OAR-2018-0283-2698, Comments of Kenneth Small (September 14, 2018) at 1-2.
[305] Small also comments that the paper he wrote with Van Dender in 2007 also shows that people respond to fuel prices as would be expected (purchase more fuel when it is cheaper and purchase less when it is more expensive) but that they could not prove that people respond to fuel economy at all (i.e., a zero percent rebound effect for fuel economy). *Id.* at 2.
[306] *See* Gillingham Rebound Report at 2-4.
[307] *Id.* at 1-2.

In sum, to present an accurate assessment of the rebound effect on criteria pollutants, GHG emissions, noise, accidents, and congestion, EPA and NHTSA should reduce their selected number by at least half. But the mistakes of NHTSA and EPA go even beyond that. Their model skews the results by overstating increased vehicle miles traveled based on whatever the appropriate rebound effect is (be it 20%, 10%, or closer to zero) by using an inappropriate method of calculating the effect.[308] Further, it is improper to roll back the current GHG standards based on any claimed fatalities (which the agencies argue is based on personal choice, not the regulation) or the amount of other claimed adverse effects of increased vehicle miles traveled. Any final rule based on the agencies' distorted assessment of the rebound effect will necessarily be arbitrary and capricious.

(4) All Fatality Rates Based on Model Years Asserted by NHTSA and EPA are Improperly Inflated

Even assuming the current regulations would lead to increased fatalities, the fatality rates that NHTSA and EPA predict are exaggerated. The Agencies calculate fatalities based on model years (the NPRM calculates fatality rates for model year vehicles 1977 through 2029) but fail to "account for changes in the fatality rate that occur over time" even for the same vehicle.[309] For example, 1985 vehicles driven in 2018 will be involved in fewer fatal accidents than those same vehicles driven in 1989 due to changes in human behavior and roadway design. Among other things, increased seat belt use over time, improvements in roadway design and life-saving emergency response and treatment, and crash compatibility with other vehicles improve the overall safety of vehicles currently on the road. And this trend will only grow more positive as current technology improves.[310] Thus the CAFE model's assumption that the fatality rate of a 1985 model year vehicle is 23.8 per billion vehicle miles traveled for any calendar year is incorrect. That error increases the risk of fatalities determined by the NPRM for scrappage by around 25%.[311]

Ultimately, though, NHTSA and EPA fail to present reliable data to establish that the existing standards would result in any fatalities.

(5) NHTSA and EPA Failed to Consider Safety Improvements that will Reduce Fatalities

CARB points out in its comments that when measuring safety risks, NHTSA failed to consider improvements in vehicle safety and road improvements that will reduce fatalities.[312] Vehicle improvements and highway design features have historically led to substantial decreases

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[308] *Id.* at 14-16.
[309] Van Auken Report at 23-24, 43-44.
[310] *Id.* at 43-44; *see also* expert report of David Ragland, attached to CARB's Comments, ("Strategies to Improve Traffic Safety in the United States and Comments on Safety Impacts of Potential Rollback of Vehicle Efficiency Standards") (Oct. 23, 2018) (hereinafter "Ragland Report") at 11-18.
[311] CARB Comments at Section VI.D.
[312] *Id.*

in fatalities per vehicle mile driven. There may be setbacks, but the general trend is toward greater safety. Vehicle improvements currently being made will not only protect drivers of new vehicles by making vehicles safer if there is a crash, they will also help older vehicles by avoiding crashes altogether. Crash avoidance features such as lane departure warnings, blind spot assistance, and pre-collision braking assistance will help prevent crashes between vehicles with these technologies and any other vehicles on the road. Roadway improvements such as speed-activated speed limit signs, rumble strips, and roadway medians continue to help reduce the number of accidents. And based on historical trends, they will do so in the future as well.[313] The projected risk of fatal and non-fatal collisions will be inflated without taking these into account.

(6) Additional Mitigation Measures to Reduce Fatalities that NHTSA and Sister Agencies Can Take

Governmental entities could also take several steps to increase highway safety without dangerously rolling back GHG emissions and CAFE standards. Certainly, those actions should be the focus of the Department of Transportation and NHTSA.[314]

Those entities could and should take many steps to reduce vehicle miles traveled (which would combat claimed increases in driving from the rebound effect or reduced scrappage). One step could be to increase the federal gasoline tax, which was last increased in 1993 and is not adjusted for inflation and, consequently, functionally has gone down. They could also provide tax breaks to support mass transit and biking, expand transportation Demand Management Programs for federal employees, implement social marketing campaigns, increase dedicated funding for transit and active modes, along with several other steps.[315]

There are also several safety measures that NHTSA should take to make driving safer. Among them are reducing driving at excessive speeds through better laws, improved enforcement, greater penalties, and enhanced communications and outreach, and supporting efforts to reduce alcohol-impaired driving (accounting for over 10,000 fatalities per year) through more deterrence laws.[316]

Suggesting that NHTSA should focus on rolling back emissions standards that place the nation at greater risk of climate change to protect against traffic fatalities that are not really the result of those standards does not make sense. There is so much NHTSA can do to promote a safe environment and safe highways without exacerbating the dangerous effects of climate change.

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[313] *Id.*; *see also* Ragland Report at 14.
[314] *See* 23 U.S.C. § 401; *see also* https://www.nhtsa.gov/about-nhtsa/nhtsas-core-values).
[315] CARB Comments at Section VI.D; *see also* Handy Report at 4-15.
[316] *See* CARB Comments at Section VI.D; *see also* Ragland Report at 13.

(7) Increases in Traffic Fatalities Caused by the Proposed Rollback

Contrary to the Agencies' conclusions, the Proposed Rollbacks could result in more fatalities, not fewer. If the NPRM correctly concludes that vehicle manufacturers will increase horsepower and speed that they would not have added to vehicles under the existing standards, that, too, could result in increased fatalities. Increased speed and power come with the risk of more fatalities, and the Agencies do not analyze this effect at all.[317]

3. The Agencies Incorrectly Claim that the Societal Benefits of Rolling Back the Current GHG Standards Will Outweigh the Costs

The agencies argue that the societal benefits of rolling back the GHG standard to 2020 levels will be $200.8 billion compared to keeping the existing standards. 83 Fed. Reg. at 43,313 (Societal Net Benefits for MYs 1977-2029 GHG Program, 3% Discount Rate). But that number does not withstand scrutiny. Simply removing scrappage from consideration (based on the facts above, that the scrappage model that does not take basic economics into account, that is structurally unsound, and has improper inputs) alone turns the supposed societal net benefit into a societal net cost of roughly $14.3 billion.[318]

Addressing each supposed cost and benefit demonstrates that *keeping the existing standards* will result in a net benefit of approximately $168 billion.[319] Here is a summary of the most significant errors the Agencies made and the appropriate corrections to those errors.

- The Agencies claim the existing standards will result in technology costs of $259.8 billion. That number should be $118.8 billion lower.[320] Moreover, given that the Agencies overstated compliance costs by over 50% ($2,260 v. $895 to $1,174), even that figure should even be lower.

- The Agencies claim the existing standards will only provide fuel savings of $143.8 billion. But that is based on substantial overestimates of the rebound effect and scrappage effects. The actual fuel savings from the existing standards is $206 billion.[321]

- The agencies identify non-rebound fatality costs at $46.3 billion and non-rebound non-fatal crash costs of $72.3 billion from the existing standards. But that is largely based on claimed fatalities from mass reduction that do not exist (the data provides that mass reduction effects cannot be reliably be distinguished from zero) and from the scrappage model, which was not peer-reviewed, suffers from fundamental development, design, and validation

[317] Ragland Report at 18.
[318] Bunch Letter at 11.
[319] CARB Comments at Table IX-1, Section IX.
[320] *Id.*
[321] *Id*.

problems and provides unreliable results that are in direct conflict with economic theory. Finally, the fatality projections from the scrappage model are based on an unjustified and inexplicable increase in vehicle miles traveled. Moreover, in the context of rebound, the Agencies determined that it is not appropriate to attribute to the standards the increase in crashes from an individual deciding to drive more. The societal costs are zero.[322]

- The agencies claim congestion and noise costs are $62.5 billion based on inflated vehicle miles traveled from the rebound and scrappage effects. The better figure is $16.2 billion.[323]

- The agencies claim that pollution costs under the Proposed Rollbacks total $5.5 billion. Instead, they should total $57.9 billion.[324]

Ultimately, the agencies flipped the societal benefit and cost on its head. The existing standards are societally beneficial. And given that rolling back the standards would increase unemployment and reduce the GDP, the Proposed Rollbacks would impose a substantial burden on the United States.

In the end, the Agencies bold statements that rolling back the existing standards would save hundreds of billions in societal costs, reduce fatalities, and have no meaningful impact on the environment, all turn out to be false. What is true is that reducing climate changing GHGs immediately is imperative.

a. The Agencies Miscalculate the Social Costs of Carbon

The Proposed Rollback and PRIA grossly underestimate the social cost of carbon ("SCC" or "SC-CO2"), listed in Table 8-24 of the PRIA, by relying on a number that is dramatically lower than any that was used in hundreds of regulatory proceedings at the federal level through January 2017. NHTSA admits that the reduction in its SCC calculation is primarily due to its decision to calculate SCC only on a domestic rather than a global basis, which is a departure from prior agency decision making, and is made without offering good reasons. PRIA at 11; see *Fox Television*, 556 U.S. at 515. Not only does NHTSA's new SCC calculation depart from agency practice, it also violates Executive Order 13783 and Circular A-4—both of which NHTSA concedes guide its analysis here—by failing to use the best available science and appropriate discount rate. PRIA at 1062. In short, the Agencies' analysis of the GHG benefits lost from rolling back the existing standards (or the GHG costs imposed by the Proposal) is rendered arbitrary and capricious by their manipulation of the SCC.[325]

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[322] *Id.*

[323] *Id.*

[324] *Id.*

[325] As referenced in Section III.C.6 of these Comments and discussed in more detail in CARB's Comments, the Agencies' analysis of forgone GHG benefits or new GHG costs imposed is also rendered arbitrary and capricious by the errors in the calculation of the quantity of GHG

In addition to the Agencies' dramatic shift in position without reasoned explanation, NHTSA's SCC analysis contains the following seven fatal flaws.[326] First, by calculating the SCC on a domestic rather than a global basis, NHTSA fails to account for the global effects of carbon pollution that impact the U.S. and its citizens. As the EPA recognized in 2008,[327] carbon pollution's effects do not stop at the U.S. border; emissions in India and China, for example, can cause damage to U.S. companies and citizens (and vice versa). NHTSA's use of a domestic SCC number to justify greater U.S. emissions creates a dangerous precedent that other countries may also follow to relax their own emissions. Such increased global emissions will, in turn, harm the U.S. and its citizens.[328]

Second, by omitting any analysis of the global SCC, NHTSA failed to adhere to OMB's Circular A-4, which instructs that impacts beyond the U.S. borders should be reported separately. NHTSA's failure to calculate a global SCC was not due to a lack of information; EPA provided the data for NHTSA to do so, and NHTSA ignored it. By omitting a global SCC calculation, NHTSA has attempted to conceal from the public the implications of switching from a global to a domestic SCC calculation: had NHTSA used the global number, its SCC calculation would increase seven-fold.[329]

Third, NHTSA's domestic SCC omits important spillover effects on U.S. corporations. The negative effects of global climate change—such as increased armed conflicts and extreme weather events—impact U.S. corporations both directly (through assets they own) and indirectly (though disruptions of supply chains). NHTSA's domestic SCC does not account for any of these global effects.[330]

Fourth, by using only a domestic SCC, NTHSA fails to consider the welfare of 9 million U.S. citizens living abroad and 450,000 men and women serving in the U.S. armed forces abroad. These individuals are affected by extreme weather events outside U.S. borders. Moreover, despite sound science demonstrating that climate change will lead to an increase in the frequency of conflict domestically and globally, NHTSA fails to account for the likelihood that the number of American troops who will be deployed abroad will increase.[331]

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emissions savings from the existing standards and the quantity of additional GHG emissions that the Proposed Rollback would cause (under the preferred alternative or any of the other alternatives).

[326] These flaws are discussed in more detail by Maximillian Auffhammer, an expert in energy and climate change economics in a report attached to CARB's comments and incorporated herein by reference. See Auffhammer Report, attached to CARB Comments. Professor Auffhammer served on the National Academies of Sciences panel which studied SCC at the request of an interagency working group composed of several federal agencies, including the Department of Transportation and EPA.

[327] Auffhammer Report at 8-9.

[328] *Id.* at 8.

[329] *Id.* at 10.

[330] *Id.* at 10-11.

[331] *Id.* at 11.

Fifth, NHTSA's analysis uses discount rates of 3% and 7%, whereas the best available science and majority of experts agree that the discount rate should be closer to 2%. As reflected in a forthcoming, peer-reviewed analysis in a top economics journal,[332] less than 3 in 100 experts believes a discount rate of 7% is appropriate. And 67% of experts preferred a discount rate *lower than* 3%.[333]

Sixth, NHTSA failed to use the best available science when it relied on outdated models that did not implement any of the updates suggested by the abovementioned National Academy of Sciences panel which studied SCC at the request of a federal interagency working group. NHTSA's decision to ignore these updates, such as damage functions concerning the agricultural impacts of climate change, is inexplicable because many of the panel's suggestions have already been implemented in the peer-reviewed literature and so are readily available. Moreover, whereas the clear majority of the literature analyzing SCC is from after 2010, NHTSA's analysis here did not incorporate any literature from the past decade. This failure had a significant impact on the SCC calculation; for example, as one analysis found,[334] simply updating the damage function for one sector of the economy leads to a doubling of the SCC.[335]

Seventh, even if a domestic SCC number were appropriate (which it is not), the most recent, peer-reviewed, scientific analysis published in a top journal[336] indicates that such a domestic number is at least $48 per ton of CO_2—far higher than the $1 to $7 range used to justify the Proposed Rollback.[337]

In each of these respects, the Agencies' analysis ignores important aspects of the problems caused by GHG emissions and fails to consider evidence that runs counter to their decision. See *State Farm*, 463 U.S. at 43. Such an approach to analyzing the SCC is arbitrary and capricious.

b. The Agencies Failed to Fully Consider the Full Economic Impacts of the Proposed Rollback

The Agencies' limited employment analysis finds that the Proposed Rollback will result in automotive sector employment losses of 50,000 in 2025 and 60,000 in 2030. While these findings are significant—demonstrating that the Proposed Rollback with result in a loss of 5% of auto sector jobs—they do not provide a complete picture of the Proposal's economic impacts. When the full economy is considered, projected job losses rise to between 180,000 and 275,000

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[332] Drupp, M.A., Freeman, M., Groom, B. and Nesje, F. Discounting disentangled. *American Economic Journal*.
[333] Auffhammer Report at 12.
[334] Moore, F.C., Baldos, U., Hertel, T. and Diaz, D., 2017. New science of climate change impacts on agriculture implies higher social cost of carbon. *Nature Communications*, 8(1), at 1607.
[335] Auffhammer Report at 14.
[336] Ricke, K., Drouet, L., Caldeira, K. and Tavoni, M., 2018. Country-level social cost of carbon. *Nature Climate Change*, at 1.
[337] Auffhammer Report at 14.

in 2035. In addition, GDP is predicted to drop by up to $17 billion as a direct result of the Proposed Rollback.

Synapse Economics identified several values used in the Agencies' analysis which do not comport with generally accepted values and expectations of economic modeling, or the Agencies' past findings. First, the Agencies drastically inflated compliance costs, as noted above in Section III.E.1. Further, the Agencies failed to adequately justify their decision to set the rebound effect at 20 %, given that a 10 % rebound effect is consistent with prior rulemakings and is consistent with the latest literature on the rebound effect. See Section III.E.2.a.(3). Finally, the Agencies have failed to account for the possibility that oil prices will rise, resulting in an underestimation of harms from the Proposed Rollback. Given the issues with the Agencies' economic modelling discussed above, Synapse Economics evaluated the macroeconomic impacts of the Proposed Rollback using two different sets of inputs. First, Synapse modeled economy-wide employment and GDP impacts using the same data and assumptions used in the Proposed Rollback ("NPRM Economy-Wide Model"). Second, Synapse revised the Proposed Rollback's compliance costs, gas forecasts, and rebound effect to more updated and realistic values ("Revised Model"). Under the Revised Model, Synapse determined that the Proposed Rollback will, in fact, cause a *decrease* in new vehicle sales as compared to existing standards, with resulting harms to the automotive and related sectors. See Section III.E.1. above.

Both Synapse models demonstrate that the Agencies drastically underestimate the economy-wide harms that would result from the Proposed Rollback by constraining their modelling of employment impacts to the automotive sector only. By looking at employment impacts in the automotive and petroleum sector supply chains, as well as the impacts of increased consumer spending on gasoline, Synapse determined that, even using the Agencies' values and assumptions, the Proposed Rollback would cause employment reductions of 90,000 jobs in 2025 and over 180,000 jobs in 2035. Under the Revised Model, Synapse found employment reductions of nearly 130,000 in 2025 and over 275,000 in 2035. Under both models, Synapse found that the Proposed Rollback would result in GDP reductions of between $13 billion and $17 billion in 2035.

By arbitrarily constraining their economic analysis to exclude these employment and GDP impacts, the Agencies "failed to consider an important aspect" of the economic analysis of the Proposed Rollback. *State Farm*, 463 U.S. at 43. Further, the Agencies have departed from their past practice of considering macroeconomic impacts, including effects on the auto sector, auto dealers, auto parts sector, fuel suppliers, and impacts on consumer expenditures. *See* 77 Fed. Reg. at 62,953-57.

c. The Agencies Fail to Account for the Harms to the United States and its Citizens Resulting from Increased Fuel Consumption

NHTSA and EPA acknowledge that the Proposed Rollback would increase oil consumption and raise fuel prices in the United States but attempt to minimize the adverse economic impacts from those increases. They do so by arguing that the United States will ultimately be a net exporter of oil. Fed. Reg. at 43,105. But their argument is contrary to the facts.

First, increased fuel use resulting from the Proposed Rollbacks will have an impact on the economy because lower fuel economy would lead to increased use of fuel and therefore higher prices. It is true that the United States is producing more oil, but the NPRM projection of being a net exporter of oil is prone to inaccuracy. The NPRM relies on data premised on the existing standards. A projection based on the Proposed Rollback would result in the United States being a net importer. Moreover, such forecasting is prone to inaccuracy, being correct (i.e., within a 10% margin) only about 60% of the time since the early 1990s.[338]

Second, the Proposed Rollback will adversely affect American consumers of fuel. NHTSA and EPA try to explain that while the American economy is adversely affected when money for oil flows overseas, that is less of an issue now because more oil is produced in the United States; the more money for oil is transferred within the United States. PRIA at 1073. But this fails to appreciate that increased fuel consumption will reduce the disposable income of consumers, thereby decreasing consumer spending on other goods decreases. The negative effect of higher fuel prices falls more on those with lower incomes, because they spend more on fuel as a percentage of their incomes than upper-income citizens by far (8% in the lowest 20% of income, and 2% for the upper 20%).[339]

Third, increased fuel production does not insulate the United States from price shocks. that are harmful to the economy. NHTSA and EPA underplay the importance of that by arguing that because the United States will become a net exporter, it is not at as great a risk of price shocks than before. That argument disregards the fact that there is still a global oil market. So the United States may still be susceptible to disruptions in the world oil supply. Currently, there are still risks of price shocks because there is less spare capacity in the world fuel supply. OPEC's spare production capacity is below two million gallons per day, and it would take some months to increase that.[340]

Finally, the risk of oil supply problems also compels the United States to increase its military spending. Certainly, EPA and NHTSA acknowledge that and conclude that increases in fuel consumption from reducing the GHG and fuel economy standards leads to higher military spending and increased spending on the Strategic Petroleum Reserve. PRIA at 1078. But they argue that since military spending has decreased in comparison to the GDP since the 1960s, increased fuel consumption would not have a significant impact on military spending. PRIA at 1079. But military spending in absolute dollars has increased. And analysts have made clear that oil security is a driver of military spending, with $27 to $73 billion in military spending associated with oil in the Persian Gulf.[341]

In short, the idea that increased fuel use is not harmful to the United States economy and national security is simply wrong. Concluding otherwise misses the facts, and basing policy on

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[338] Expert Report of Elizabeth Stanton et al., attached to CARB's Comments ("Review of August 2018 NHTSA/EPA Proposed Rulemaking Reducing the Stringency of CAFE and CO_2 Standards") (Oct. 2018) (hereafter "Stanton Report") at 4-9.
[339] *Id*. at 9-12.
[340] *Id*. at 12-15.
[341] *Id*. at 16-19.

ignoring those facts is arbitrary and capricious. *State Farm*, 463 U.S. at 43; *Genuine Parts*, 890 F.3d at 307.

F. NHTSA's Draft Environmental Impact Statement Violates the National Environmental Policy Act and is Arbitrary and Capricious

In separate comments that are incorporated by reference herein, we address the flaws in NHTSA's Draft Environmental Impact Statement (DEIS). Among other things, NHTSA's DEIS fails to meet its core obligation to review a reasonable range of alternatives, which would include at least one option that is more stringent than the augural standards. Nor does the DEIS discuss in detail all reasonable mitigation measures, as it must. NHTSA fails to do so, claiming its "hands are tied." But, NHTSA fails to discuss federal actions such as creating tax breaks or increasing federal funding for transit and biking, requiring vehicle miles traveled (VMT) as a performance measure for federal funding, and providing NEPA guidance on evaluating VMT impacts of federal projects. Additionally, the Draft EIS misstates the air quality impacts and obscures the significance of the GHG emission impacts of the Proposed Rollback. For these and other reasons, NTHSA should withdraw the DEIS.

IV. THE AGENCIES' ATTACK ON SEPARATE STATE GHG EMISSIONS STANDARDS AUTHORIZED UNDER SECTIONS 209 AND 177 OF THE CLEAN AIR ACT IS UNLAWFUL

In addition to proposing unwarranted, unlawful and dangerous rollbacks to the federal standards, NHTSA and EPA mount attacks on state standards that reduce GHG emissions from motor vehicles—specifically California's GHG and ZEV standards, for which EPA granted California a Clean Air Act Section 209(b) waiver of preemption five years ago. NHTSA proposes to find that California's GHG and ZEV standards are preempted by EPCA. EPA, in turn, proposes to revoke the parts of a waiver it granted to California that correspond to these same standards. EPA also proposes to interpret Section 177 of the Clean Air Act as prohibiting other States from adopting California's GHG standards. As discussed below, these attacks on state standards are unmoored from the statutes the Agencies' purport to interpret, and, in fact, the Agencies do not have the authority to take the steps they propose. These attacks also contravene Congress' long-standing and repeatedly reaffirmed intent that California continue to pioneer vehicle emissions controls, would upend the cooperative federalism structure established by Congress, would interfere with our States' abilities to protect our residents and our resources, and are entirely unsupported by evidence. The Agencies should withdraw the Proposal.

A. NHTSA's Proposed Finding that California's Emissions Standards Are Preempted Is Unfounded

As described in more detail in CARB's comment letter, NHTSA's analysis and proposed finding that California's tailpipe GHG and ZEV standards are preempted by EPCA is both improper and unlawful.

NHTSA's proposal significantly overreaches its authority under the statute, and contravenes the cooperative federalism framework that Congress has repeatedly embraced in the arena of motor vehicle emission control. Moreover, the proposal is contrary to—and fails to

adequately rebut—the two federal court decisions that have addressed this specific issue and held that California's standards are not preempted by EPCA. *Green Mountain Chrysler Plymouth Dodge Jeep v. Crombie*, 508 F.Supp.2d 295 (D. Vt. 2007); *Cent. Valley Chrysler-Jeep, Inc. v. Goldstene,* 529 F.Supp.2d 1151 (E.D. Cal. 2007).

As those courts held, EPCA's preemption provision does not apply to California's separate emissions standards. *Green Mountain*, 508 F.Supp.2d at 354; *Cent. Valley*, 529 F.Supp.2d at 1175. On top of that, California's tailpipe GHG and ZEV standards are not "related to fuel economy standards" within the meaning of EPCA's preemption provision and do not conflict with EPCA's purposes.

1. NHTSA Lacks Delegated Authority to Declare California's Standards Preempted

As a general matter, agencies lack legal authority to determine the preemptive effect of statutes, absent express delegation from Congress giving them such authority. *Am. Tort Reform Ass'n v. Occupational Safety & Health Admin.*, 738 F.3d 387 (D.C. Cir. 2013); *Wyeth v. Levine*, 555 U.S. 555, 577 (2009) (Agencies "have no special authority to pronounce on preemption absent delegation from Congress."). EPCA clearly does not delegate to NHTSA authority to decide whether a given state law is preempted, or even whether that state law is "related to fuel economy standards." 49 U.S.C. § 32919(a). Nor is NHTSA entitled to deference for its interpretation of EPCA's preemption provision. *See Wyeth*, 555 U.S. at 577. NHTSA's claims of conflict preemption are also unwarranted and meritless for a number of reasons, including the Agency's failure to engage with the facts. *Alascom, Inc. v. FCC*, 727 F.2d 1212, 1220 (D.C. Cir. 1984). Accordingly, the agency should not finalize its proposed regulations nor its proposed analysis of the preemption provision.

2. EPCA Does Not Expressly Preempt California's Tailpipe and ZEV Standards

a. Emission Standards for which California Obtains a Waiver under Section 209(b) Are Never Preempted by EPCA

EPCA's preemption provision must be interpreted in light of Congress' history of preserving California's authority to regulate motor vehicle emissions standards. *Medtronic, Inc. v. Lohr*, 518 U.S. 470, 485 (1996) ("[T]he purpose of Congress is the ultimate touchstone in every pre-emption case.") (internal quotation marks omitted). As that history makes clear, and as two federal courts have held, Congress did not intend EPCA's preemption provision to apply to emissions standards for which California has obtained a valid waiver under section 209(b) of the Clean Air Act. *Green Mountain*, 508 F.Supp.2d at 354; *Cent. Valley,* 529 F.Supp.2d at 1175; *see also Lincoln-Dodge, Inc. v. Sullivan*, 588 F.Supp.2d 224 (D.R.I. 2008).

In a series of statutes adopted over a span of forty years, Congress has repeatedly protected and reinforced the ability of California, and later other States, to exercise its historic police powers and regulate air pollution from new vehicles sold in the State. As described in more detail in Section IV.B below as well as in CARB's Comments, Congress created a process—now embodied in Section 209(b) of the Clean Air Act—that presumptively entitles

California to obtain a waiver of preemption for its program to control new motor vehicle emissions. *See Motor & Equip. Mfrs. Ass'n, Inc. v. EPA*, 627 F.2d 1095, 1110 (D.C. Cir. 1979) ("*MEMA I*"). The effect of this provision was to preserve California's historic police power to adopt and enforce vehicle emission standards, including standards for GHG emissions. *See Mass. v. EPA*, 549 U.S. 497, 532 (2007) (holding that Clean Air Act framework for vehicle emission standards applies equally to GHG emission standards).

NHTSA interprets EPCA to have rendered Section 209(b) of the Clean Air Act ineffective as to California's vehicle emission standards for GHGs. Such a reading is impermissible both because it would implicitly repeal parts of Section 209(b) (its applicability to tailpipe GHG emissions), *see Epic Sys. Corp. v. Lewis*, 138 S. Ct. 1612, 1624 (2018), and because it would result in the preemption of historic state police powers, *see Medtronic v. Lohr*, 518 U.S. 470, 486 (1996). Moreover, this reading is foreclosed by both EPCA itself and subsequent legislation.

At the same time Congress enacted EPCA's preemption provision, it also established fuel economy standards for Model Years 1978-1980 and provided for manufacturers to obtain modifications of those standards, from NHTSA, if the manufacturers could show that other "Federal" standards for those model years would make compliance with fuel economy standards impossible. Pub. L. 94-163, 89 Stat. 871, § 502(d)(3)(D)(i) (1975). Those other "Federal" standards expressly included "emissions standards applicable by reason of Section 209(b) of such Act," i.e., standards for which California had obtained a waiver. *Id.*; *see also* S.Rep. No. 94–516, at 156 (1975). In other words, far from preempting California's emission standards, Congress expressly provided that EPCA's fuel economy standards would accommodate them.

Nothing in NHTSA's discussion of EPCA's preemption provision supports the incredible notion that Congress would have required accommodation of California's waiver standards in one part of the statute while preempting them in another. *See* 83 Fed. Reg. at 43,237. The fact that the section expressly requiring accommodation of California waiver standards only applied until 1980 is irrelevant; there is no reason to think that Congress intended the scope of the preemption provision to be broader for standards NHTSA would set than for standards Congress itself established or to expand after Model Year 1980. Nor is there any reason to think Congress would have manifested a full about-face—from expecting NHTSA to treat California vehicle emissions standards as "Federal" prior to 1980 to allowing NHTSA to disregard California standards entirely afterwards.

NHTSA's argument that Congress only meant to exempt California smog standards that existed in 1975, *see* 83 Fed. Reg. at 43,237, is also not credible. The text of the statute is not so limited; indeed, the absence of any qualifying or limiting language in Congress' identification of California waiver standards is telling and unambiguous. And NHTSA has not articulated any reason Congress would have cared only about accommodating some California waiver standards but not others. It is illogical to assume that Congress preserved broad authority for California in Section 209(b) of the Clean Air Act but only intended fuel economy standards to accommodate a subset of the standards California might adopt in its exercise of that broad authority.

In any case, the statute expressly requires NHTSA to consider California waiver standards. When Congress recodified EPCA in 1994 and struck the modification provision

discussed above as fully executed, it specified that NHTSA should consider "other motor vehicle standards of the Government" when determining what level of standards is maximum feasible. There is no basis to conclude "other motor vehicle standards of the Government" means anything but the same standards that NHTSA had previously been required to consider when reviewing applications for modifications of standards applicable to individual manufacturers.[342] Indeed, that is how NHTSA has consistently interpreted the phrase in the past, *see*, *e.g.*, 71 Fed. Reg. 17,566, 17643 (Apr. 6, 2006), and how both courts to consider the issue have interpreted the phrase. *Green Mountain*, 508 F.Supp.2d at 347 ("It seems beyond serious dispute therefore that once EPA issues a waiver for a California emissions standard, it becomes a motor vehicle standard of the government…."); *Cent. Valley*, 529 F.Supp.2d at 1173("[T]here is nothing in statute or in case law to support the proposition that a regulation promulgated by California and granted waiver of preemption under section 209 is anything other than a 'law of the Government' whose effect on fuel economy must be considered by NHTSA in setting fuel economy standards.")

NHTSA also fails to explain away laws enacted subsequent to EPCA—specifically, the Clean Air Act Amendments of 1977 and the Energy Independence and Security Act of 2007 ("EISA")—in which Congress embraced the ability of California and other States' to regulate vehicle emissions, including GHG emissions. The 1977 Amendments made changes to Section 209(b) "to ratify and strengthen the California waiver provision and to affirm the underlying intent of that provision, i.e., to afford California the broadest possible discretion in selecting the best means to protect the health of its citizens and the public welfare." *MEMA I*, 627 F.2d at 1110 (quotation omitted). In addition, Congress added Section 177 to allow other States to adopt California's waiver standards under specified conditions, reflecting Congress' recognition that California is not the sole State with substantial sovereign interests in controlling vehicle emissions in ways different from, or more stringent than, those adopted by EPA. Pub. L. 95-95, 91 Stat. 685, § 129(b) (1997). In expanding and strengthening the Clean Air Act's preservation of state authority, Congress made no mention of EPCA or its preemption provision, even though it was already well aware of the relationship between California's emissions standards and fuel economy.

In EISA, Congress embraced the value of California's GHG vehicle emissions standards in particular. In amending federal agency vehicle acquisition rules, Congress established a general rule that federal agencies acquire only "low greenhouse gas emitting vehicles." 42 U.S.C. § 13212(f)(2)(A). Congress simultaneously required EPA to determine which vehicles qualify as "low greenhouse gas emitting vehicles" by taking into account "the most stringent standards for vehicle greenhouse gas emissions applicable to and enforceable against motor vehicle manufacturers for vehicles sold anywhere in the United States." *Id.* § 13212(f)(3)(B). At the time of EISA's passage, California had already adopted such standards and was, in fact, the only agency that had done so anywhere in the United States.[343] Congress was, thus, requiring

[342] If anything, Congress' omission of the word "Federal" suggests "other motor vehicle standards of the Government" is *broader* than just the specific "Federal" standards that could enable a manufacturer to obtain a modification of the standards in Model Years 1978-80.
[343] Moreover, the Supreme Court had recently made clear in *Mass. v. EPA* that EPA could set standards for GHG emissions from new motor vehicles, meaning that California, in turn, could

EPA to consider California's GHG emissions standards for new motor vehicles while it set qualifications for Congress' vehicle acquisition program. If Congress had meant otherwise—had meant EPA to only consider (future) federal standards to be set by EPA—it would have had to say so, given that the only such standards in existence at the time were California's. Instead, Congress used capacious language, referring to the "most stringent" standards, indicating that multiple standards were possible, and standards "for vehicles sold anywhere in the United States." Moreover, two federal district courts had already held that EPCA does not preempt California from adopting GHG emissions standards for vehicles. *Green Mountain*, 508 F.Supp.2d 295; *Cent. Valley*, 529 F.Supp.2d 1151. Those decisions, the Supreme Court's decision in *Mass. v. EPA*, and the existence of California's GHG emission standards, were "a part of the contemporary legal context in which Congress legislated." *Merrill Lynch, Pierce, Fenner & Smith, Inc. v. Curran*, 456 U.S. 353, 381 (1982). Congress chose not to disturb that context, enacting a savings clause in EISA that expressly preserved existing state authority to regulate GHG emissions. 42 U.S.C. § 7545(o)(12). NHTSA's interpretation of EPCA's preemption clause as preventing the very standards Congress instructed EPA to consider is without merit.

In sum, NHTSA's reading of EPCA as preempting California from exercising its historic police power to set standards for motor vehicle emissions, as codified by Section 209(b) of the Clean Air Act, is clearly contrary to statutory text, congressional intent, case law, and the legislative context. Accordingly, NHTSA should withdraw its proposed analysis and regulatory text.

b. NHTSA's Reading of EPCA's Preemption Provision is Overbroad for Other Reasons

Even if it the preemption analysis could proceed past the steps discussed above, the history of congressional action in this area would still be relevant. Congressional intent is especially important in interpreting preemption provisions like EPCA's, which use "related to" or similar phrasing. In analyzing preemption provisions using "relate to" language, courts "simply must go beyond the unhelpful text and the frustrating difficulty of defining its key term, and look instead to the objectives of the [] statute as a guide to the scope of the state law that Congress understood would survive." *N.Y. State Conference of Blue Cross & Blue Shield Plans v. Travelers Ins. Co.*, 514 U.S. 645, 656 (1995) ("*Travelers*"). For example, the Supreme Court has refused to read ERISA's "relate to" preemption provision as preempting state action that Congress subsequently sought to encourage, *id*., or "previously sought to foster," *Cal. Div. of Labor Standards Enf't v. Dillingham Constr., N.A., Inc.*, 519 U.S. 316, 332 n.7 (1997) ("*Dillingham*"). As recounted above, both are true in this case: Congress has consistently protected California's ability to regulate motor vehicle emissions, even leveraging its GHG emissions standards to tighten federal fleet acquisition rules. Accordingly, Congress should not be understood as having preempted that ability through the use of the vague phrase "related to fuel economy standards."

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obtain a waiver for GHG emissions standards provided the statutory criteria of Section 209(b) were satisfied.

NHTSA's claim that EPCA's preemption provision has an "unambiguous plain meaning" that preempts California's tailpipe GHG and ZEV standards is simply wrong. *See* 83 Fed. Reg. at 43,234. Courts have interpreted EPCA's preemption to cover "only those state regulations that are explicitly aimed at the establishment of fuel economy standards, or that are the de facto equivalent of mileage regulation." *Central Valley*, 529 F. Supp. 2d at 1175. Alternatively, "relate to" preemption provisions can be read as merely codifying normal principles of implied preemption. *Cal. DLSE v. Dillingham*, 519 U.S. at 336 (Scalia, J., concurring) ("I think it accurately describes our current ERISA jurisprudence to say that we apply ordinary field pre-emption, and, of course, ordinary conflict pre-emption."); *see also Egelhoff v. Egelhoff ex rel. Breiner*, 532 U.S. 141, 153 (2001) (Scalia, J., concurring).

While NHTSA repeatedly says EPCA's preemption provision is "broad," the agency does not say what it thinks the provision's plain meaning is. Nor does the agency take a clear and consistent position on why the provision preempts California's tailpipe GHG and ZEV standards, making it impossible to fully comment on the proposed interpretation NHTSA is considering. For example, NHTSA is unclear as to what makes an impact on fuel economy "merely incidental," 83 Fed. Reg. at 43,235, or whether that is different from having the purpose of affecting fuel economy. *See* 83 Fed. Reg. at 43,238. NHTSA also never even attempts to explain why standards it says are "related to fuel economy" are necessarily "related to fuel economy *standards*," as is required for EPCA preemption. Nor can it. For example, even if California's ZEV mandate could be said to affect average fuel economy, it could not affect fuel economy standards in the same way, because NHTSA is prohibited from considering the availability of ZEVs when setting CAFE standards, as discussed below. Accordingly, NHTSA has not provided notice of, or a fair opportunity to comment on, its interpretation of EPCA's preemption provision. To the extent NHTSA (or EPA) believes the agency's preemption analysis has any legal effect, NHTSA cannot issue a final rule purporting to interpret the preemption provision without first remedying this notice-and-comment flaw.

Moreover, the justifications NHTSA does appear to give for saying California's standards are preempted contravene congressional intent and are unreasonable and arbitrary. To begin with, NHTSA's proposed justifications for preemption of tailpipe GHG standards are overbroad and lack any sort of limiting principle. For example, everything from speed limits to safety laws—not to mention other California waiver standards—are "mathematically linked to fuel economy." 83 Fed. Reg. at 43,234. *See*, *e.g.*, 40 Fed. Reg. at 23105 (citing manufacturers' predictions that California's standards for model year 1977 would reduce fuel economy by up to 24 percent).

In addition, NHTSA is incorrect that foreseeable future technologies for reducing GHG emissions consist solely of technologies to improve fuel economy. To take just one example, adoption of electric and fuel cell vehicles continues to increase, especially in California, and those vehicles are becoming and will continue to become more and more integral to reducing GHG (and other) emissions from motor vehicles in the future. In any case, NHTSA should not interpret EPCA's preemption provision, let alone codify that interpretation, based on current technology or adoption rates.

NHTSA is similarly incorrect when it states, without support, that "the purpose of the ZEV program is to affect fuel economy." 83 Fed. Reg. at 43,238.[344] As NHTSA acknowledges, California adopted the ZEV mandate in 1990 to encourage innovation in ZEV technology and infrastructure to support deployment of ZEVs. As described in CARB's Comments, CARB continues to rely on the ZEV program to pursue those goals, which are necessary to achieve needed long-term reductions in both GHG and criteria pollutant emissions.[345] The purpose of the ZEV mandate was, and continues to be, to lay a foundation for a future with truly low emissions of both criteria pollutants and GHGs.

Moreover, the concept of fuel economy, as defined in EPCA, does not even apply to ZEVs. 49 U.S.C. §§ 32901(10 & 11) (defining "fuel" as gasoline, diesel or other "liquid or gaseous fuel" that needs conserving and defining "fuel economy" as miles per gallon of gasoline or its equivalent); see also 83 Fed. Reg. at 42,999 ("Improving fuel economy means getting the vehicle to go farther on a gallon of gas."). Because ZEVs do not run on gas, NHTSA cannot even consider their availability when it sets CAFE standards. 42 U.S.C. § 32902(h); see also 83 Fed. Reg. at 43,212 ("NHTSA also cannot consider the use of alternative fuels by dual-fueled vehicles nor the availability of dedicated alternative fuel vehicles in any model year."). Accordingly, ZEV mandates cannot be "related to fuel economy standards." And GHG-emissions standards, for which ZEVs are increasingly used for compliance, can likewise not be "related to fuel economy standards."

3. California's Advanced Clean Car Program Does Not Conflict with EPCA

For many of the same reasons described above, California's tailpipe GHG and ZEV standards are not conflict-preempted. As noted above, conflict preemption is a fact-specific inquiry that NHTSA has not bothered to conduct. And, even if it were appropriate for an agency to conduct such an inquiry *sua sponte* (a proposition for which NHTSA provides no support), it would not be appropriate to conduct such an inquiry at this point, given the uncertainty of potential changes to the federal program as well as technological and economic considerations underlying NHTSA's assertion of a conflict.

Moreover, as an initial matter, conflict preemption does not apply, because Congress has decided to tolerate any tension that exists between federal regulation of fuel economy and joint federal-state regulation of motor vehicle emissions, including emissions of GHGs. *See Silkwood v. Kerr-McGee Corp.*, 464 U.S. 238, 256 (1984) ("Congress intended to stand by both concepts and to tolerate whatever tension there was between them. We can do no less."). While fuel economy regulation and vehicle emissions regulation "may overlap," "there is no reason to think" they cannot coexist. *Mass. v. EPA*, 549 U.S. at 532.

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[344] NHTSA does not appear to make this same claim about tailpipe GHG standards.

[345] In light of this purpose and effect of the ZEV mandate, EPA has approved the program's adoption as part of CARB's State Implementation Plan ("SIP) to attain National Ambient Air Quality Standards for criteria air pollution. "Approval and Promulgation of Implementation Plans; California; California Mobile Source Regulations," 81 Fed. Reg. 39,424 (June 16, 2016).

In addition, NHTSA does not and cannot articulate any conflict between California's standards and the objectives of EPCA. *See Green Mountain*, 508 F.Supp.2d at 392 (rejecting claims of conflict preemption); *Cent. Valley*, 529 F.Supp.2d at 1179 (same). NHTSA nowhere even suggests that California's tailpipe GHG and ZEV standards conflict with "the overarching purpose of EPCA" to promote "energy conservation." 83 Fed. Reg. at 43,237. Rather, NHTSA alleges interference with its own ability "to balance and achieve Congress' competing goals." *Id.* at 43,238. But the federal government already tried a virtually identical argument in *Mass. v. EPA*, arguing that EPA should not set GHG standards because doing so would conflict with NHTSA's role under EPCA.[346] The Supreme Court rejected this argument, noting that federal vehicle emissions standards are "wholly independent" of, and do not pose an obstacle to, NHTSA's statutory obligations under EPCA. 549 U.S. at 532. State vehicle emission standards are similarly "independent" and affect far less of the fleet than do federal standards.

As for ZEV mandates, NHTSA claims they are conflict-preempted because "manufacturers are likely to spread the costs of the ZEV mandate to non-ZEV vehicles." 83 Fed. Reg. at 42,239. But cost-sharing alone cannot be the basis for preemption under EPCA. If it could, EPCA could preempt any state law that results in increased production costs for some vehicles being spread among others. Preemption does not turn on whether or not manufacturers decide to spread costs. Moreover, NHTSA's analysis is purely speculative; the agency does not—and cannot, at this preliminary stage—attempt even to estimate the costs that are "likely" to be spread to non-ZEV vehicles or explain why some amount of cost sharing would, in fact, create a conflict. In any event, one of EPCA's purposes is and has long been to encourage the adoption of ZEVs. *See* 83 Fed. Reg. at 43,212. ("EPCA encourages the production of alternative fuel vehicles."); *see also* 49 U.S.C. § 32904(a)(2).

Finally, NHTSA points to Section 177 States' authority to adopt California's waiver standards as evidence that tailpipe GHG standards conflict with the purposes of EPCA. 83 Fed. Reg. at 43,237-38. In doing so, NHTSA turns Section 177 on its head, using it to diminish—rather than reinforce—state regulation of motor vehicle emissions. In addition, NHTSA fails to address the fact that EPA, in the very same rulemaking, interprets the authority of Section 177 States as being limited to adopting standards for criteria pollutants. *See* 83 Fed. Reg at 43,253. While neither EPA nor NHTSA have any authority to determine the scope of Section 177, it is telling that NHTSA interprets Section 177 as encompassing GHG standards in order to justify declaring California's standards preempted by EPCA, while EPA uses its opposite interpretation to justify declaring California's standards preempted by the Clean Air Act. This 'heads-I-win, tails-you-lose' approach to statutory interpretation is the antithesis of reasoned decision-making, and must be abandoned. *See Epic Sys. Corp. v. Lewis*, 138 S. Ct. 1612, 1630 (2018) ("And whatever argument might be mustered for deferring to the Executive on grounds of political accountability, surely it becomes a garble when the Executive speaks from both sides of its mouth, articulating no single position on which it might be held accountable.").

For all of these reasons, NHTSA should not finalize its proposed regulatory text or its position on EPCA preemption.

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[346] Brief for the Federal Respondents at 24-25, *Mass. v. EPA*, 549 U.S. 497 (2007) (No. 05-1120).

B. EPA's Proposed Revocation of California's Waiver for its GHG and ZEV Standards is Unlawful

As explained in more detail in CARB's Comments, EPA's proposal to revoke California's waiver for its GHG and ZEV standards for model years 2021-2025 is unlawful and should be withdrawn.

Our States are intimately familiar with the cooperative federalism structure Congress enacted with the Clean Air Act. The importance of our roles in that structure should not be underestimated or disregarded. *See, e.g.*, 42 U.S.C. § 7401(a)(3). Congress' structure reflects recognition of, and respect for, the States' roles in protecting their residents and resources from harmful air pollution—roles that are part of "the most traditional concept of what is compendiously known as the police power." *Huron Portland Cement Co. v. City of Detroit, Mich.*, 362 U.S. 440, 442 (1960).

This traditional role is the very one Congress unambiguously preserved for California with respect to vehicle emissions. Specifically, in Section 209(b), Congress intended California to be able "to continue and expand its pioneering efforts at adopting and enforcing motor vehicle emission standards different from and in large measure more advanced than the corresponding federal program; in short, to act as a kind of laboratory for innovation." *MEMA I*, 627 F.2d at 1110–11. Accordingly, Congress established a presumption that California's waiver requests would be granted, sharply limited the criteria upon which EPA could deny such a request, and placed the burden of proof on waiver opponents, not on California. *Id.* at 1121.

Ten years after it first created the waiver process for California, Congress enacted Section 177 of the Clean Air Act to allow certain other States (including many of our States) to adopt and enforce California's waiver standards if those States determine doing so would be beneficial. This reflected Congress' concern that the blanket preemption in Section 209(a) "interfere[d] with legitimate police powers of States, prevent[ing] effective protection of public health." H.R. Rep. No. 95-294, 309 (1977). Notably, in the same year (1977), Congress also "ratif[ied] and strengthen[ed]" the waiver provision to "afford California the broadest possible discretion" to design and implement its own standards. *Id.* at 301–02. These two actions reinforce that Congress intended to preserve substantial state police power authority to regulate vehicle emissions and, thereby, reinforce the strong roles States retain in this sphere within the cooperative federalism structure Congress designed.

EPA's proposal to revoke portions of California's Advanced Clean Cars ("ACC") waiver—years after it was granted, and years after many of our States adopted California's standards—directly contravenes the cooperative federalism structure Congress established. In fact, EPA's proposal unlawfully grants primacy to the policy views of the *federal* government, in a sphere where Congress expressly intended "to provide *California* with the broadest possible discretion in setting regulations *it* finds protective of the public health and welfare" (*MEMA I*, 627 F.2d at 1122 (emphasis added)) and, likewise, intended to provide the Section 177 States with the discretion to choose between the California and federal standards, based on each State's assessment of those standards and the best interests of the State and its residents.

1. EPA Lacks Authority to Revoke a Waiver

EPA's proposal to revoke parts of California's ACC waiver is unprecedented in the multi-decade history of waiver requests. While (implicitly) acknowledging it has never, in more than forty years, exercised the revocation authority it now claims to have, EPA nonetheless claims it has had broad revocation authority all along—since 1967 when the waiver provision was adopted. EPA relies on two thin reeds for this claim: 1) a single, isolated statement from the voluminous legislative history from 1967; and 2) a conclusory statement that agencies always have inherent or implied authority to reconsider. Neither of these reeds can support the weight of EPA's theory.

First, the legislative history actually supports the opposite conclusion from the one EPA proposes to reach. For one thing, the snippet EPA relies on speaks to whether California is complying with "conditions of the waiver," and EPA is not proposing to revoke based on some purportedly non-compliant action on California's part. *See* 83 Fed. Reg. at 43,242. For another, the 1967 legislative history also contains a statement clearly indicating that at least one member of the House was uncertain as to whether the waiver provision included revocation authority. 113 Cong. Rec. 19181–83 at 30951 (Cong. Herlong) (daily ed. Nov. 2, 1967), (asking "[W]ould the Secretary be able to withdraw the exemption once it has been granted? In short, once the exemption has been granted, does it exist in perpetuity or until the statute is changed by the Congress?"). The 1967 legislative history does not, therefore, support the sweeping revocation authority EPA asserts here, if it supports revocation authority at all.

More significantly, Congress amended the Clean Air Act in significant and relevant ways in 1977—expanding California's discretion to design its own vehicle emissions program, ratifying EPA's deferential approach to waiver requests, and granting other States the ability to adopt California's waiver standards (under specified conditions). These amendments are entirely inconsistent with the notion that EPA could revoke an already granted waiver—could yank the rug out from California and the Section 177 States, after the fact. And, indeed, there is, tellingly, *no* reference to such authority in the (also voluminous) legislative history for these amendments. Notably, EPA's argument for implicit authority does not even mention these changes, let alone explain how its revocation authority theory could be reconciled with the 1977 amendments (which persist to this day). EPA's reference to a single, isolated statement in legislative history *from 1967* cannot support its claim to implicit revocation authority in a structure Congress changed significantly ten years later, without reference to any such authority (or need for it).

Second, EPA is simply wrong when it argues that agencies always have inherent authority to reconsider decisions. None of the cases on which EPA relies for this argument could support the *retrospective* application of an agency's new statutory interpretation to a five-year-old decision that the agency itself described as adjudicatory. *See* 83 Fed. Reg. at 43,242 (citing two prospective rulemaking cases—*Chevron USA, Inc. v. NRDC, Inc.*, 467 U.S. 837, 863 (1984) and *National Cable & Telecommunications Ass'n v. Brand X Internet Services*, 545 U.S. 967, 981 (2005)—and a case involving application of a previously announced change in interpretation to facts arising after that announcement—*Fox Television*, 556 U.S. at 515. Further, "[a]s a creature of statute[,] [EPA] has only those powers conferred upon it by Congress." *HTH Corp. v. N.L.R.B.*, 823 F.3d 668, 679 (D.C. Cir. 2016). Thus, EPA may only take its proposed action "if some provision or provisions of the Act explicitly or implicitly grant it power to do so." *Id.*

EPA's reliance on one isolated statement from the 1967 legislative history does not support EPA's claim here, as discussed above. And EPA identifies nothing in the statutory text or structure that could plausibly be read as granting implied revocation authority.

In fact, the statutory text and structure establish the absence of any implied or implicit authority to revoke a waiver. Section 209(b) has long been understood as establishing a narrow, limited review by EPA coupled with a strong presumption that California's requests will be granted. *MEMA I*, 627 F.2d at 1121. This understanding is entirely consistent with the text, which *requires* EPA to grant the waiver request *unless* it makes one of the three, specified findings. This understanding is also entirely consistent with congressional intent to grant California the broadest discretion to craft a vehicle emissions program to meet the State's needs and congressional recognition of the value California's program could bring to the rest of the Nation—both for the Section 177 States who chose to adopt California's standards and for the Nation as a whole, which benefits from the innovations in pollution control produced by California's program. *See* S. Rep. No. 90-403 at 33 (1967). EPA's notion of implicit authority to yank an already granted waiver is inconsistent with that intent and recognition because it would put California and Section 177 States at the mercy of changing policy views by the federal government (as demonstrated here), because it infringes on the policy discretion and reliance interests of California and the Section 177 States, and because it would undermine the very regulatory certainty upon which technology-driving policies rest.

Sections 209(b) and 177 reflect the balance Congress expressly struck between state and federal powers—a balance that recognizes that California's and other States' strong, historic, and substantial interests in protecting their citizens from harmful air pollution are presumed to outweigh any national interests in one set of national standards for vehicle emissions. By design, "the statute does not provide for any probing substantive review of the California standards by federal officials." *Ford Motor Co. v. EPA*, 606 F.2d 1293, 1301 (D.C. Cir. 1979). It plainly, then, does not provide for ongoing supervision and continuous review of California's standards—of the kind that would support the inherent or implied authority to revoke that EPA now claims it has. Any such ongoing supervision would permit "far greater interference" with California's and the Section 177 States' exercise of their police powers than Congress intended, "producing a serious intrusion into state sovereignty, while simultaneously wiping out" the innovation-driving and pollution-reducing benefits Congress intended Sections 209(b) and 177 to generate. *See Medtronic, Inc. v. Lohr*, 518 U.S. 470, 488–89 (1996); *see also MEMA I*, 627 F.2d at 1119 ("The EPA Administrator does not have authority to regulate … the State of California under a broad charter to advance the public interest."); *Murphy v. Nat'l Collegiate Athletic Ass'n*, 138 S. Ct. 1461, 1477 (2018) ("[A] healthy balance of power between the States and the Federal Government [reduces] the risk of tyranny and abuse from either front." (internal quotation omitted)).

Sections 209(b) and 177 establish a cooperative federalism structure that expressly anticipates that California and Section 177 States will rely on California's waiver standards to protect their residents and resources. And States have done so with regard to the standards at

issue here.[347] "It would be arbitrary or capricious to ignore" *private parties'* reliance interests when changing an agency interpretation *prospectively*. *Fox Television*, 556 U.S. at 515. But EPA's proposal to read implicit revocation authority into Section 209(b) ignores the *States'* reliance interests in California standards for which a waiver has already been granted and would allow EPA to *retrospectively* apply new policies to that previously-decided waiver request. Indeed, to interpret the waiver provision as EPA does here flies in the face of basic tenets of administrative law that govern adjudicatory decisions, as EPA has always maintained its waiver decisions are. *See, e.g.*, *Nat'l Ass'n of Trailer Owners, Inc. v. Day*, 299 F.2d 137, 139 (D.C. Cir. 1962) (any power to reconsider adjudicatory decisions must not subject parties to "any undue or unnecessary hardships"). Statutes should not be read as granting administrative agencies authority to disregard the reliance interests of sovereign States or to allow retrospective application of changing policies to previously-decided adjudications.

Congress expressly permitted California continued broad discretion to design its own vehicle emissions control program and permitted multiple other States to rely on California's waiver standards to protect their own residents and resources. In this context, EPA's notion of implied or inherent authority begs credulity because it requires one to assume that Congress preserved this substantial state authority with one hand while simultaneously handing a federal administrative agency the power to retroactively undermine the exercise of that authority and the reliance interests that attach to it. EPA's assertion of revocation authority is unmoored from the text, structure, or congressional intent. EPA lacks authority to revoke an already granted waiver; and the proposed revocation should be withdrawn because it is unlawful.

2. If EPA Has Any Implicit Authority to Revoke Waivers, That Authority Is Very Limited, and the Conditions for It Do Not Exist Here

Even assuming EPA had some implied or inherent authority to revoke an already granted waiver, that authority would be highly constrained and unavailable here. Indeed, all the factors discussed above—the presumption in favor of granting waivers, the expressly limited scope of EPA's waiver review, congressional intent, and the States' reliance interests—all counsel in favor of strictly limited authority to revoke, just as they counsel in favor of no such authority at all. EPA's proposal to revoke California's waiver for its GHG and ZEV standards is unlawful because the basis for that revocation falls far outside the bounds of any conceivable authority EPA could have to revoke an already granted waiver.

Notably, the fundamental bases for EPA's proposed revocation are new administrative interpretations of the law—EPA's new interpretations of Sections 209(b)(1)(B) and (C), NHTSA's new interpretation of EPCA, and EPA's reinterpretation of Section 209(b) as

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[347] *See, e.g.*, States' Appx. C-177,Wash. Rev. Code § 70.120A.010 and related legislative findings available at http://apps.leg.wa.gov/RCW/default.aspx?cite=70.120A.010, last visited October 22, 2018; *see also* States' Appx. C-176, Decl of Christine Kirby at ¶ 23 ("Massachusetts relies on the current LEV regulations as a key component of its strategy to satisfy GWSA [Global Warming Solutions Act of 2008] mandates.").

permitting EPA's consideration of NHTSA's interpretation.[348] But any conceivable revocation authority could not extend to permit EPA to apply new federal policy—including new agency interpretations of statutes—*retroactively* to change a decision the agency itself described as adjudicatory. While agencies may, sometimes, "correct judgments which contain clerical errors of judgments which have issued due to inadvertence or mistake," agencies may not reopen already-decided adjudications simply "because the wisdom of those decisions appears doubtful in the light of changing policies." *See Am. Trucking Ass'ns v. Frisco Transp. Co.*, 385 U.S. 133, 145-46 (1958); *see also Consol. Rail Corp. v. Surface Transp. Bd.*, 93 F.3d 793, 801 (D.C. Cir. 1996); *Coteau Properties Co. v. Dep't of Interior*, 53 F.3d 1466, 1479 (8th Cir. 1995); *Upjohn Co. v. Pennsylvania R. Co.*, 381 F.2d 4, 5 (6th Cir. 1967). Nor may agencies reopen adjudications years after deciding them. *See Am. Methyl Corp.*, 749 F.2d at 835 ("We have held that agencies have an inherent power to correct their mistakes by reconsidering their decisions within the period available for taking an appeal."); *see also Hirschey v. FERC*, 701 F.2d 215, 218 (D.C. Cir. 1983). These well-established prohibitions against revisiting past adjudications due to changes in policy or legal interpretation and against reopening adjudications after the passage of time both bar EPA's proposed revocation, particularly since EPA itself has never characterized its waiver decisions as anything other than adjudications.

EPA's proposed revocation is also barred by the general prohibition against giving new statutory interpretations "retroactive effect unless [the statutory] language requires this result." *See Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204, 208 (1988). There can be no question that EPA's proposal would be retroactive, if finalized, because it would "take[] away or impair[] vested rights acquired under existing law" including the rights acquired by California and the Section 177 States. *See Ass'n of Accredited Cosmetology Sch. v. Alexander*, 979 F.2d 859, 864 (D.C. Cir. 1992) (internal quotation omitted); *see also* 74 Fed. Reg. at 32,781 (characterizing waiver grants as "directly determin[ing]" the "legal rights . . . of the State of California to adopt and enforce its state regulations").

In addition, permitting EPA to revoke an already granted waiver based on the policy shifts of a new administration would directly contravene congressional intent and the text and structure of the waiver provision. As discussed above, Congress intentionally and expressly preserved California's police power and its discretion to design the vehicle emissions control program most appropriate for the State. Congress in no sense intended California's police power or its discretion to be subject to the whims of changing policies resulting from turnovers in the White House. In fact, "[t]he Administrator . . . is not to overturn California's judgment lightly," when it considers a waiver request from California in the first instance (H.R. Rep. No. 95-294 at 301), and the reliance interests of sovereign States would only amplify the need for such caution where the agency is considering revoking an already granted waiver. Congress intended changes in *federal* policy to be largely irrelevant to California's waiver requests, since, by design, Congress left policy judgments for California's standards *to California*. *Ford Motor Co.*, 606 F.2d at 1297 ("Congress consciously chose to permit California to blaze its own trail with a minimum of federal oversight.); *MEMA I*, 627 F.2d at 1108 n.22. ("[T]here are overwhelming indications in the legislative history that Congress intended California to enjoy the broadest

[348] As explained in CARB's Comments, the purported factual bases for the proposed revocation are not actually identified, let alone supported, and, in any event, would be improper bases for the proposed revocation.

possible discretion in selecting a complete program of emissions control."). This is underscored by the nature of the waiver criteria Congress established—criteria that raise primarily *factual* questions about protectiveness, conditions in California, and technological feasibility. *See also MEMA I*, 627 F.2d at 1121 (noting that the Administrator "'is required to waive application unless he finds' one of the *factual* circumstances set out in section 209(b)(1)(A)-(C)") (emphasis added, quoting S. Rep. No. 403, 90th Cong., 1st Sess. 33 (1967)). The nature of these primarily factual inquiries that Congress expressly established in the text underscores that an already granted waiver should not be revoked based on changes in federal *policy*.

If EPA has any authority at all to revoke an already granted waiver, it may not do so on the grounds it proposes here—changes in federal policy and agency legal interpretations. The proposal revocation is unlawful and should be withdrawn.

3. EPA Has No Lawful Basis on Which to Finalize Its Proposed Waiver Revocation, Even Assuming Some Revocation Authority Exists

EPA proposes to revoke California's waiver for its GHG and ZEV standard for model years 2021-2025 on three bases: 1) NHTSA's proposed conclusion that these standards are preempted by EPCA; 2) EPA's proposed conclusion that California does not need these standards to meet extraordinary and compelling conditions under EPA's reinterpretation of Section 209(b)(1)(B); and 3) EPA's conclusion that these standards are no longer consistent with Section 202(a) under EPA's reinterpretation of Section 209(b)(1)(C). None of these bases provides lawful grounds for EPA's proposed revocation.

As discussed above, EPA may not revoke an already granted waiver based on an agency's change in policy or reinterpretation of the law. This, alone, bars EPA from finalizing the proposed revocation based on NHTSA's change in policy and interpretation of EPCA. In addition, NHTSA's proposed conclusion concerning EPCA preemption is itself unlawful for numerous reasons (*see* Section IV.A), and EPA has identified no authority that permits it to rely on NHTSA's proposed conclusion.

EPA's other bases—its proposed findings under Sections 209(b)(1)(B) and (C)—likewise provide no support for EPA's proposed revocation, as discussed below.

a. EPA's Proposed Finding under Section 209(b)(1)(B) Is Unlawful.

EPA proposes to revoke parts of California's ACC waiver on the grounds that EPA now proposes to read Section 209(b)(1)(B) differently than it did five years ago, when it granted that waiver.[349] As discussed above, this is not a lawful grounds for waiver revocation. In addition, EPA's proposed reinterpretation is unambiguously foreclosed and unreasonable, as explained below.

[349] EPA has not proposed to find that the waiver should be revoked based on the agency's historical interpretation of Section 209(b)(1)(B)—the one EPA applied in 2013 when it granted the ACC waiver—and, therefore, may not make such a finding in its final action.

(1) EPA's Reinterpretation of "Such State Standards" in Section 209(b)(1)(B) is Impermissible and Unreasonable.

EPA's reinterpretations of Section 209(b)(1)(B) begin with a new reading of the phrase "such State standards" that is impermissible and unreasonable for numerous reasons.

First, EPA's new interpretation of "such State standards" in Section 209(b)(1)(B) is an unjustified departure from the agency's traditional reading of that phrase. EPA has long read this phrase as referring to California's entire vehicle emissions program—all of California's vehicle emissions standards. *E.g.*, 78 Fed. Reg. at 2131, 2215; 49 Fed. Reg. at 18,887.[350] EPA now proposes to read this phrase in accord with this traditional interpretation only when considering California standards that control pollutants which, in EPA's view, are "local" or "regional." EPA proposes to read the phrase "such State standards" entirely differently—as referring to an individual standard—where the standard controls pollutants that, in EPA's view, are "global." While EPA acknowledges that its new interpretation is a departure from its traditional "whole program" interpretation (83 Fed. Reg. at 43,241), it fails to justify this departure. EPA also fails to acknowledge that the requisite justification must be "more detailed than what would suffice for a new policy created on a blank slate" because EPA's "prior policy has engendered serious reliance [at least by California and the Section 177 States] that must be taken into account." *Fox Television*, 556 U.S. at 515.

Rather than justifying its departure from its traditional interpretation, EPA argues, in this very proposal, that its traditional interpretation is reasonable. 83 Fed. Reg. at 43,246 (listing traditional whole program interpretation as one of three reasonable interpretations). That is not a justification for rejecting a long-standing interpretation, let alone one on which sovereign States have relied. EPA's primary other attempt at justification is the bald contention that "an agency must consider the wisdom of its policy on a continuing basis," particularly "in response to . . . a change in administration." 83 Fed. Reg. at 43,248 (internal quotations omitted). This is no justification for applying that change in policy *retroactively* to upend a five-year-old decision to which substantial reliance interests have attached. EPA's proposed departure from its long-standing interpretation is unjustified and therefore arbitrary and capricious and otherwise unlawful. As discussed below, EPA's new interpretation is also unambiguously foreclosed and unreasonable.

Second, as noted above, EPA's proposed reinterpretation reads the same phrase ("such State standards") in the same statutory provision (Section 209(b)(1)(B)) differently depending on whether the pollutant at issue is, in EPA's view, "local" or "global." Yet, as EPA correctly stated in the past, and restates here, it would be "inconsistent" with congressional intent and the text of Section 209(b) for "EPA to look at each air pollutant separately for purposes of determining compelling and extraordinary conditions." 83 Fed. Reg. at 43,247. This pollutant-specific interpretation is internally inconsistent; incoherent; inexplicably contrary to the agency's

[350] EPA has departed from this traditional interpretation only once, and only briefly, in the decades since the waiver provision was enacted. When EPA reverted to its traditional interpretation, it did so after expressly finding that the traditional interpretation "is the most straightforward reading of the text and legislative history of section 209(b)." 74 Fed. Reg. at 32,761.

prior, long-standing interpretation; and directly contrary to the statutory language and congressional intent.

EPA's prior position—that it must read this single provision of the statute the same way for all pollutants—was, and is, correct. Congress intended to "confer[] broad discretion on the State of California to weigh the degree of health hazards from *various pollutants* and the degree of emission reduction achievable for *various pollutants* with various emission control technologies and standards." H.R. Rep. No. 95-294 at 23 (emphasis added). Neither this nor the text itself suggests any authority for EPA to review California's standards differently, based on the pollutant at issue.

EPA's prior position is also consistent with canons of statutory construction, whereas EPA's pollutant-switching interpretation is not. *See United States v. Santos*, 553 U.S. 507, 522–23 (2008) (plurality) (superseded by statute on other grounds) (rejecting interpreting "proceeds" to mean "profits" for some predicate crimes and "receipts" for others, and noting that "giving the same word, *in the same statutory provision*, different meanings *in different factual contexts*" would "'render every statute a chameleon'" (quoting *Clark v. Martinez*, 543 U.S. 371 (2005))). And, of course, Congress knows how to expressly indicate that certain pollutants should be treated differently than others, and has done so in other parts of the Clean Air Act. *See, e.g.*, 42 U.S.C. §§ 7408, 7410, 7411, 7412. The absence of any such indication here defeats EPA's proposed interpretation.

Third, EPA's proposed reinterpretation also directly contravenes the text itself. "Such State standards" in Section 209(b)(1)(B) unambiguously refers to California's motor vehicle program *as a whole*. Notably, Congress' use of the plural "standards" and the word "such" as a qualifier bely EPA's individual standard approach. *See* 42 U.S.C. § 7543(b)(1)(B); *see also* 49 Fed. Reg. at 18,890 ("The use of the plural . . . confirms that Congress did not intend EPA to review the need for each individual standard in isolation."). The 1977 amendments that authorized consideration of California's "standards . . . as a package," with express reference to the protectiveness determination being based on standards "in the aggregate," underscore the point. EPA does not even attempt to reconcile Congress' embrace of this "package" approach with regard to protectiveness with EPA's standard-by-standard approach to California's "need" for the standards.

Fourth, congressional intent also undermines EPA's proposed reinterpretation. Congress intended "to afford California the broadest possible discretion in selecting the best means to protect the health of its citizens and the public welfare." *See* H.R. Rep. No. 95-294, at 301. Congress did not place EPA in the micro-managing role it attempts to adopt for itself here, as discussed in more detail in CARB's Comments.

And, finally, if all of that were not enough to establish that Section 209(b)(1)(B)'s inquiry is focused on California's program as whole, Congress ratified this interpretation in 1990. That was when Congress adopted nearly identical language in Section 209(e)(2), and that was years after EPA had expressly articulated its traditional "whole program" reading. *See Merrill Lynch, Pierce, Fenner & Smith, Inc. v. Curran*, 456 U.S. 353, 381–82 & n.66 (1982) ("re-enact[ing] a statute without change" or "incorporating sections of a prior law" demonstrate congressional intent to "le[ave] intact" contemporary interpretations).

EPA's proposed interpretation is impermissible and unreasonable.[351]

(2) EPA's Proposed Interpretation of "Compelling and Extraordinary Conditions" To Exclude GHGs and Climate Change Is Also Impermissible and Unreasonable

EPA also proposes an unlawful interpretation of the phrase "compelling and extraordinary conditions" under which California must show conditions "unique" to that State in order to obtain a waiver. EPA contends this interpretation reflects an absence of congressional intent to permit California to obtain a waiver for "global" pollutants. As with any newly proposed statutory interpretation, this is not a lawful ground for waiver revocation, if there are any such grounds. Further, this interpretation should be irrelevant because under the proper interpretation of "such State standards," EPA should consider whether California continues to need its own vehicle emissions program, as a whole, and EPA does not question that need in this proposal. In addition, EPA's reinterpretation of "compelling and extraordinary conditions" is unambiguously foreclosed and unreasonable for several reasons.

First, EPA's reinterpretation is unsupported by the plain text which contains no qualifier such as "local" or "regional." Of course, Congress knows how to limit Clean Air Act provisions to certain pollutants, or types of pollutants, when it chooses. *See, e.g.*, 42 U.S.C. §§ 7408, 7410, 7411, 7412. Where Congress did not choose to do so, these words should not be read into the text. *See Bates v. United States*, 522 U.S. 23, 29–30 (1997) ("Where Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion." (internal quotation omitted)).

Second, EPA's proposed reinterpretation of "compelling and extraordinary conditions" is far too narrow. In general, Congress intended the Clean Air Act to comprehensively cover harmful air pollution. And there is nothing in the capacious phrase "compelling and extraordinary conditions" to support the idea that Congress had a more limited intent in Section 209(b)(1)(B). Indeed, the absence of limiting terms in this provision, combined with the legislative history, indicates exactly the opposite. *E.g.*, H.R. Rep. No. 95-294 at 301–02 (noting intent to "afford California *the broadest possible discretion*") (emphasis added).

Third, EPA's proposed reinterpretation is inconsistent with the statutory structure. Section 209(b) is co-extensive with Section 209(a). *See* 42 U.S.C. § 7543(a), (b); *see also MEMA I*, 627 F.2d at 1108 ("The legislative history of section 209 supports the Administrator's interpretation that the waiver provision is coextensive with the preemption provision . . . ."). EPA does not propose to read Section 209(a) as limited to "local" or "regional" pollution—a reading which would allow *all* States, including California, to regulate "global" pollutants from new motor vehicles. EPA cannot, therefore, read this limitation into Section 209(b). EPA also offers no basis for reading Section 209(b) as more limited in scope than Section 202(a), though it is proposing precisely that reading by asserting its own authority to regulate GHG emissions from new motor vehicles while denying California that same authority. There plainly can be no basis for this reading, given that Congress expressly authorized California to continue its

[351] EPA's attempt to establish ambiguity fails as explained in CARB's Comments.

tradition of regulating pollutants *before* the federal government did so. *See* H.R. Rep. No. 95-294 at 301 (1977) ("California was afforded special status due to that State's pioneering role in regulating automobile-related emissions, which pre-dated the Federal effort.").

Fourth, EPA's proposed reinterpretation is entirely inconsistent with EPA's prior practice of approving waivers for "conditions" that are not unique to California and with Congress' express recognition, in Section 177, that other States might decide to adopt California's more stringent standards. Indeed, Section 177 exists solely to allow States other than California to adopt California standards in order to address conditions in those other States. There is no way to reconcile this provision with EPA's proposed reinterpretation that California must show "unique" conditions to receive a waiver.

EPA's proposed reinterpretation of "compelling and extraordinary conditions" is unlawful and cannot support the proposed revocation.

(3) EPA's Proposed Interpretation of the Word "Need" in Section 209(b)(1)(B) Is Also Unambiguously Foreclosed and Unreasonable

EPA continues its proposal of unlawful reinterpretations of Section 209(b)(1)(B) by proposing to read this provision as requiring California to show that its standards will "meaningfully address" and/or "materially affect" GHG concentrations or the impacts of climate change in California. 83 Fed. Reg. at 43,248. This is yet another unjustified departure from long-standing agency interpretations, and, as a change in policy, cannot support revocation of a waiver.

EPA's proposed reinterpretation is also impermissible. As the text, structure, and legislative history establish, Congress intended California to have substantial discretion "to weigh the degree of health hazards from various pollutants and the degree of emission reduction achievable for various pollutants." H.R. Rep. 95-294 at 23. Congress also intended the Section 177 States likewise to have the choice to employ California's standards where the State determined, for itself, that those standards were desirable. EPA's proposed reinterpretation impermissibly constrains California and the Section 177 States, imposing requirements Congress neither expressed nor intended. It improperly positions EPA to second-guess California's policy judgment as to whether the State needs the standards it designed and to preclude California from adopting standards that other States might also choose to adopt.[352] EPA's interpretation also conflicts with the long-standing and accepted principle that governments must sometimes progress in increments, particularly where problems are as large and complex as climate change. *See Mass. v. EPA*, 549 U.S. at 524.

[352] As discussed in CARB's Comments (Section G.3), the existence of the "travel provision" in the ACC program does not undermine the needs of California, or any of the Section 177 States, with regard to the ZEV standard.

For these reasons, and the additional reasons discussed in CARB's Comments, EPA's proposed reinterpretation of "need" in Section 209(b)(1)(B) is impermissible and unreasonable and cannot support the proposed revocation.

(4) California Is Entitled to Keep Its GHG and ZEV Standards Waiver

As noted above, EPA does not propose to revoke under its traditional "whole program" approach to Section 209(b)(1)(B), acknowledging that California continues to have "compelling and extraordinary conditions" for which it needs a separate vehicle emissions control program. 83 Fed. Reg. 43,241 n.555. Because that interpretation is the only permissible one, and because EPA may not apply any new interpretation to its five-year-old decision, EPA cannot lawfully finalize its proposed revocation.

Further, even under an interpretation of Section 209(b)(1)(B) that would permit EPA to consider California's GHG and ZEV standards separately from the rest of California's program, there would still be no lawful basis for revocation. As discussed above, there is no permissible reading of "compelling and extraordinary conditions" that excludes GHGs and climate change impacts. And, as documented in CARB's Comments and its attachments, California's need to address those emissions and those impacts is beyond dispute. In fact, all our States are facing "compelling and extraordinary conditions" related to GHGs and climate impacts, as described above in Section II.B and in the attached Appendix A.

EPA proposes to take the untenable position that the Clean Air Act prevents California, and therefore the Section 177 States, from taking aggressive action against an existential air pollution threat to which new motor vehicles substantially contribute. This position is impermissible and unreasonable. It is, in fact, absurd.

In addition, as explained in more detail in CARB's comment letter, GHG-reducing standards, such as California's GHG and ZEV standards, are also needed to address ozone-formation—the very kind of "local" or "regional" problem EPA asserts California may address. The connection between rising temperatures and exacerbation of ozone concentration levels is well-documented and underscores the illusory nature of EPA's proposed distinction between "local" and "global" pollutants. It also underscores that California and Section 177 States "need" GHG-reducing standards to address "local" or "regional" issues.

All of EPA's proposed reinterpretations of, and proposed findings under, Section 209(b)(1)(B) are unlawful, and the proposed revocation should be withdrawn.

b. EPA's Proposed Findings that California's GHG and ZEV Standards Are Inconsistent with Section 202(a) Are Unlawful

EPA also proposes to revoke parts of California's ACC waiver based on a proposed finding, under Section 209(b)(1)(C), that California's GHG and ZEV standards for model years 2021-2025 are now somehow inconsistent with Section 202(a). Again, these proposed findings are predicated on proposed reinterpretations of the law, which cannot lawfully be the basis for revoking this five-year-old decision. In addition, EPA's proposed reinterpretation is

unambiguously foreclosed and unreasonable, and its proposed findings unlawful, as explained below.

(1) EPA's Proposed Reinterpretation of Section 209(b)(1)(C) Is Impermissible and Unreasonable

Section 209(b)(1)(C) permits EPA to deny a waiver request if it finds that California's standards "are not consistent with [Section 202(a)]." "In the waiver context, section 202(a) 'relates in relevant part to technological feasibility.'" *MEMA v. Nichols*, 142 F.3d 449, 463 (D.C. Cir. 1998) (quoting *Ford Motor Co.*, 606 F.2d at 1296 n.17). Accordingly, "EPA has traditionally examined whether the necessary technology exists today, *and if not,* what is the cost of developing and implementing such technology." 78 Fed. Reg. at 2,142 (emphasis added). And "[n]either the court nor the agency has ever interpreted" Section 209(b)(1)(C) as requiring more than "allow[ing] sufficient lead time to permit manufacturers to develop and apply the necessary technology." *Nichols*, 142 F.3d at 463. EPA now proposes to contravene this precedent and depart from the agency's traditional interpretations of Section 209(b)(1)(C), without either acknowledging or justifying those departures.

First, EPA proposes to find that California's GHG and ZEV standards for model years 2021 through 2025 are now projected to be too costly and therefore inconsistent with Section 202(a). 83 Fed. Reg. at 43,252. But EPA acknowledges that much, if not all, of the technologies necessary to meet those standards "have already been developed, have been commercialized, and are in-use on vehicles today." 83 Fed. Reg. at 43,229. Proceeding to consider costs for these technologies, especially without identifying which technologies, if any, do not yet exist, contravenes EPA's traditional interpretation and approach under Section 209(b)(1)(C). Yet, this is exactly what EPA does, all without acknowledging, let alone justifying, this departure from agency practice and precedent.

Second, EPA proposes to reinterpret the meaning of Section 209(b)(1)(C) as to when costs would be considered excessive and therefore "inconsistent" with Section 202(a). Previously, both EPA and the courts have recognized that costs would have to "reach a very high level" (74 Fed. Reg. at 32,774) and, in fact, might need to double or triple the cost of motor vehicles (*MEMA I*, 627 F.2d at 1118) before they could be deemed excessive. This traditional understanding is entirely consistent with congressional intent that, through the waiver provision, California would continue to drive technological innovation. Congress understood that such technological innovation is not cost-free. Here, EPA proposes to rely on its (fundamentally flawed) analysis of the costs of the federal standards to find that California's GHG and ZEV standards will be too costly. That analysis projects a cost estimate of $2,260 per vehicle by model year 2025. 83 Fed. Reg. at 43,229. EPA provides no justification for considering this "a very high level," and it clearly would not double or triple the cost of motor vehicles. EPA's proposal to find these costs inconsistent with Section 202(a) is unjustified and unlawful.

Third, EPA proposes to interpret Section 209(b)(1)(C) as authorizing it to substitute its judgment for that of California and the Section 177 States. In other words, EPA proposes to decide, *for California and the Section 177 States*, that modest cost increases are "excessive," when California and at least some of the Section 177 States have plainly decided otherwise. This directly contravenes the cooperative federalism structure Congress put in place with the Clean

Air Act and, particularly, the waiver provision and Section 177. It ignores the States' discretion regarding policy choices and unlawfully intrudes on the authority Congress preserved for the States. *See* 78 Fed. Reg. at 2,134; 74 Fed. Reg. at 32,744, 32,775 ("Cost-effectiveness is a policy decision of California that is considered and made when California adopts the regulations, and EPA, historically has deferred to these policy decisions.").

(2) EPA's Proposed Finding under Section 209(b)(1)(C) Lacks Proper Factual Support and Is, Therefore, Arbitrary and Capricious

As discussed above, EPA's proposed reinterpretation of Section 209(b)(1)(C) is unlawful and, in any event, cannot provide support for a retroactive revocation of the kind proposed here. EPA's proposed finding concerning inconsistency with Section 202(a) also lacks any evidentiary support and is arbitrary and capricious.

EPA points to the analysis" of the federal GHG and fuel economy standards as its primary attempt at a factual basis for its proposal to revoke under Section 209(b)(1)(C)'s consistency requirement. 83 Fed. Reg. at 43,252. As discussed in CARB's Comments, EPA may not rely on an analysis of costs for the federal standards when it is considering a waiver for *California* standards. Further, the analysis of the federal standards is so fundamentally flawed that it cannot support the proposed action on the federal standards, let alone revocation of California's waiver. *See* Section III.E; *see also* CARB's Comments and attachments. And, as discussed above, the analysis of the federal standards' costs does not support the conclusion EPA proposes to reach here because the cost increases are modest and do not even remotely approach the proper legal threshold for excessive costs.

But the flaws in EPA's proposal under Section 209(b)(1)(C) do not end there. The proposal is full of inconsistent and conclusory, unsupported statements that render review and comment difficult, if not impossible, since it is sometimes entirely unclear what the agency is proposing to find or what basis, if any, the agency has for that proposed finding. For example, EPA says it proposes to find that there is inadequate lead time for model years 2021 through 2025 of California's GHG and ZEV standards but never identifies, let alone discusses, any basis for that proposed finding, any amount of lead time that might be adequate, or really anything about lead time at all. *See* 83 Fed. Reg. at 43,250. Indeed, as noted above, EPA concedes that the technology is mostly (or completely) available, while simultaneously proposing to find lead time inadequate. These inconsistencies are never explained, even though lead time is a central concept under Section 209(b)(1)(C). *See, e.g.*, 36 Fed. Reg. 17,458, 17,458 (Aug. 31, 1971) ("[T]he statute does not permit [the Administrator] to take into account the extent of the burden placed on residents of California or on regulated interests, *unless* the California requirement fails to provide an adequate period of time for compliance.").

Further illustrating the point, EPA expresses concern about purported "challenges for the adoption of all ZEV technologies such as lack of required infrastructure and a lower level of consumer demand for [fuel cell vehicles] in both California and the 177 States." 83 Fed. Reg. at 43,250. EPA points to *no* support for this concern. In fact, the evidence demonstrates that ZEV infrastructure and sales in California are and will be more than adequate to meet the ZEV standards out to model year 2025. *See* CARB Comments, Section X.H.5. And, although it is not

relevant to the analysis of *California's* waiver, ZEV penetration nationwide and in our States is increasing, and programs and policies are in place to ensure continued growth. *See* Appendix B on ZEV Penetration and Infrastructure Beyond California.

There is no cognizable evidence to support EPA's proposed finding under Section 209(b)(1)(C), and, in fact, any decision to revoke would be *contrary to* the evidence. As discussed above, there is also no legal basis for that proposed finding.

EPA's proposed revocation of parts of California's ACC waiver is contrary to the statute, the evidence, congressional intent, and well-established legal principles. It should be withdrawn.

C. EPA Should Abandon Its Vague, Ill Conceived Proposed Determination Regarding Section 177 and California's GHG Standards

EPA states that it "proposes to determine" that Section 177 "does not apply to CARB's GHG standards." 83 Fed. Reg at 43253. Specifically, even in a scenario where California's light duty vehicle GHG emission standards remain in effect, EPA would still seek to block Section 177 States from continuing to implement and enforce such standards and/or from adopting such standards.[353] EPA does not identify any legal authority for its proposed determination nor does it provide proposed regulatory text or any indication as to the format in which the proposed new interpretation would be memorialized. EPA also fails to provide any information as to how the determination would or could be implemented. EPA explains only that, notwithstanding years of practice to the contrary, the "text, context and purpose" of Section 177 now "*suggest*" to EPA that it should create an extra-statutory role for itself under Section 177 in order to limit Section 177 States to adopting California standards "designed to control criteria pollutants to address NAAQS nonattainment." *Id.* (emphasis added). However, the text, context and purpose of Section 177 expressly do not include any pollutant-specific limitation, and Congress gave EPA no authority to interpret or implement the provision.

It is bad enough that EPA seeks to shirk its own duty by rolling back federal GHG standards, and we urge the Agency to rethink that proposal. But it is an egregious overreach, and flies in the face of the core principle of cooperative federalism that gave rise to Sections 209 and 177, for EPA to actively seek to block States from doing all they can to protect the health and safety of their own residents. To date, twelve States have adopted California's Advanced Clean Car standards, including California's GHG emission standards, and others are considering adoption. Collectively, these States represent over a third of the nation's new car sales and have a population of more than 113 million.[354] In the face of insufficient federal action, many States have adopted their own GHG reduction targets, such as New York's plan to reduce statewide

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[353] The proposed determination's explicit limitation to GHG standards precludes EPA from seeking to extend any final determination to Section 177 States' ZEV standards. Nor should EPA entertain proposing a similar determination as to States' ZEV standards since any such determination would suffer from the same infirmities as this proposed determination and would be equally invalid.

[354] States' Appx. C-120, "CARB Finds Vehicle Standards Are Achievable and Cost-Effective (Mar. 24, 2017), available at: https://ww2.arb.ca.gov/news/carb-finds-vehicle-standards-are-achievable-and-cost-effective.

GHG emissions to 40% below 1990 levels by 2030 or Massachusetts' mandate to reduce statewide GHG emissions at least 80% below 1990 levels by 2050. Because the transportation sector is the largest single contributor to GHG emissions in many states, the ability of States to address vehicle emissions, and to choose between the federal standards and California's standards is a vitally important tool.

As set forth in more detail below, the proposed determination defies both the law and common sense. The plain language of Section 177 refutes EPA's proposed interpretation, and the context further undercuts EPA's proposed reading. EPA's past practice, unaddressed in the proposal, is also completely contrary. And even assuming, for the sake of argument, that Section 177 requires that California standards adopted by Section 177 States have a connection to criteria pollution—which it plainly does not—the GHG standards do in fact help States address criteria pollution under NAAQS nonattainment and maintenance plans adopted pursuant to Part D. Indeed, EPA has approved adoption of the vehicle GHG standards into several States' SIPs and there is no question that GHG emissions contribute to increased heat waves, which intensify concentrations of ground level ozone. The proposal also lacks sufficient detail to meet EPA's obligations under the APA, including any explanation as to how it would be implemented and/or any analysis of the environmental impacts, costs and/or asserted benefits of implementation. Nor did EPA consult with any states on this preemption proposal in contravention of the agency's obligation to do so under Executive Order 13132. We urge EPA to discard this deeply flawed, destructive proposal.

1. EPA's Proposed Determination Is Contrary to Law

a. EPA Lacks Authority to Adopt or Implement the Proposed Determination

EPA fails to identify any legal provision that would authorize it to adopt or implement the proposed determination, nor could it. Congress gave EPA no role in implementation of Section 177 and no authority to make any type of determination regarding the scope of California standards states may choose to adopt.[355] The statute's plain language confers exclusively upon those States with SIP provisions approved under Part D of Subchapter I of the Act the discretionary authority to adopt whatever vehicle emission standards California has adopted, subject only to the requirements of identicality and lead time. Any EPA attempt to interfere with this direct grant of exclusive, discretionary authority would be ultra vires.

EPA seeks comment on "how and when this new interpretation should be adopted and implemented" (83 Fed. Reg. 43,253) but fails to provide any draft regulatory text or to offer any implementation proposals for stakeholders to consider. It is EPA's job to provide this information to commenters, not vice versa. Regardless, as noted above, the statute forecloses any EPA interference with Section 177 States' decision making about what California standards to adopt. Thus, even assuming EPA were to publish a statement offering its interpretation of

[355] EPA's "single, narrow responsibility" related to Section 177 is to issue regulations to define the commencement of the model year for use in measuring lead time. *Motor Vehicle Mfrs. Ass'n v. NYSDEC*, 17 F.3d 521, 535 (2d Cir. 1994).

Section 177, there is no legal avenue for such interpretation to be implemented or to otherwise have any force or effect.

The closest EPA comes to providing any clue about implementation is in its question as to timing for adoption of the proposed determination, which EPA explains it is considering "in order to allow additional time for planning and transition." 83 Fed. Reg. 43,253. Insofar as this is meant to imply that EPA is considering attempting to force removal of the GHG standards from States' SIPs despite EPA's prior approval, there is no legal basis for such action. And even if there were some issue as to inclusion of the GHG standards in SIPs, States could continue to adopt and implement California vehicle standards outside the SIP process with no interference by EPA.

b. The Unambiguous Language of Section 177 Negates EPA's Position and Eliminates Any Room for Interpretation

EPA's assertion that the text and context of Section 177 "suggest" some limitation on the types of California standards that Section 177 States may adopt is belied by the plain language. Tellingly, EPA fails to identify any specific text in support of its contention or to offer any explanation of its purported textual analysis. The statute provides that "any State which has plan provisions approved under [Part D of Subchapter I of the Act] may adopt and enforce for any model year standards relating to the control of emissions from new motor vehicles . . ." 42 U.S.C. § 7507. There is no modifier for the word "standards" and no other textual basis to impose a limitation based on the type of air pollutant covered by a California standard. Indeed, the words "air pollutant" are conspicuously absent from the text of Section 177.

The threshold requirement of Section 177 is that a State "has plan provisions approved under this part [D]." Such approved plan provisions are expressly not limited to States with nonattainment plans (Section 172). Rather, they include, for example, States that have achieved attainment but have approved maintenance plans (Section 175A) or have other approved plan provisions related to their being within the Ozone Transport Region (Section 184), in addition to states with approved nonattainment plans. But once past that threshold, the plain text unambiguously vests States with discretionary authority to determine what California "standards relating to the control of emissions from new motor vehicles" to adopt, subject only to the identicality and lead time requirements. This authority is granted directly and exclusively to states, with no intermediary role for EPA. In short, while Congress may have constrained which States can make use of Section 177, the unambiguous plain text places no restriction on which California standards Section 177 States can choose to adopt nor does it carve out any space for EPA insert itself into the process.

Unable to identify any statutory text to support the proposal, EPA instead relies on its erroneous reading of the context, citing to Section 177's title ("New motor vehicle emission standards in nonattainment areas") and its placement in the Clean Air Act in Part D - Plan Requirements for Nonattainment Areas. However, EPA cannot rely on the title or placement of Section 177 to attempt to create ambiguity. As the Supreme Court has made clear, "[i]f the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress." *Chevron*, 467 U.S. at 842–43; see also, *Util. Air Regulatory Grp. v. EPA ("UARG")*, 134 S. Ct. 2427, 2446, (2014) ("[A]n

agency may not rewrite clear statutory terms to suit its own sense of how [a] statute should operate.") This canon of statutory interpretation—that the inquiry begins and ends with the statutory text where, as here, the text is unambiguous—is equally applicable to any EPA argument based on either title or placement. *See, e.g.*, *Whitman v. American Trucking Associations*, 531 U.S. 457, 482 (2001) (where statutory text is clear, "[t]his eliminates the interpretive role of the title, which may only shed light on some ambiguous word or phrase in the statute itself."); *Nat'l Ctr. For Mfg. Sci. v. Dept. of Def.*, 199 F.3d 507, 511 (D.C. Cir. 2000) ("[t]here is no reason to cloud the plain meaning of subsection (d) because of its placement in section 1006.")

c. The Structure and Purpose of Section 177 Confirm There Is No Room for Interpretation

EPA focuses on the title and placement of Section 177 but fails to acknowledge that the Clean Air Act authorizes regulation of GHGs from vehicles (by both EPA and California) and authorizes States to adopt California standards. Thus, the broader context supports a reading of Section 177 that allows States to adopt and enforce California GHG emission standards. Moreover, EPA's reading would not result in there being no vehicle GHG emission standards applicable in Section 177 States; instead the standards in those States would drop down to EPA's weaker federal standards. So, what EPA is really targeting is not the regulation of vehicle GHG emissions in Section 177 States but the stringency of the emission standards. Yet, just as EPA offers no text or context to support a limitation based on the pollutant being controlled, EPA also fails to identify any textual or contextual support related to stringency.

EPA's context argument is also flawed because its reading of the title of Section 177 conflates "nonattainment areas" with "nonattainment (i.e., criteria) pollutants." The title can only fairly be read to limit which States can avail themselves of Section 177, not to place any limit on the standards such States may opt to adopt. The title's abbreviated reference to "nonattainment areas" is a shorthand reference to States which have approved plan provisions under Part D. And this points up another problem with EPA's rationale: Congress did not limit States to adopting only those California standards that address the specific pollutant(s) for which such States have approved SIP provisions under Part D. Thus, for instance, a State with only ozone nonattainment areas can still adopt California standards that address other criteria pollutants. Section 177's purpose, as reflected in the text and legislative history, was to allow States flexibility to devise plans and choose measures to deal with their own unique and complex air pollution challenges.[356]

[356] As stated by Congressman Rogers of Florida during floor debate: "It is the feeling of the committee that if there are States, such as Colorado, which have a very heavy pollution problem, that might desire to adopt and enforce the California option for themselves they may do so. The gentleman has indicated that dire consequences may come about. But if they are all that dire, then I am sure the State would not make that judgment. No one will force the State to make a judgment. It is left up to the State. They can either do it or not do it. Notice is required so the process will be very orderly. If a State decides to make that change to clean up the air, clean up the automobile, it can adopt and enforce the California standards which are more strict than the

EPA also ignores the statutory construction maxim of *expressio unius est exclusio alterius*. *See, e.g.*, *Halverson v. Slater*, 129 F.3d 180, 185-86 (D.C. Cir. 1997) (statutory delegations to Coast Guard officials only excludes delegations to non-Coast Guard officials). Specifically, Congress did impose enumerated, explicit limitations on States' exercise of their authority under Section 177: States may only opt in to California's motor vehicle emission standards if the state standards are: (1) identical to California's; and (2) adopted with sufficient lead-time. 42 U.S.C. § 7507. But Congress but did not express any limitation as to the types of pollutants covered and/or types of California standards to which States may opt-in. The presence of two explicit limitations reflects an intent to exclude the additional limitation that EPA now seeks to read in to the statute. Congress also expressly limited the role to be played by EPA with respect to Section 177: adopting regulations to define commencement of the model year. This express grant of limited authority further refutes EPA's apparent belief that it can manufacture for itself an extra-statutory role to interfere with authority that Section 177 gives exclusively, and unambiguously, to States.

EPA's reading of the context also overlooks the rule of construction that identical words used in different parts of the same act are intended to have the same meaning. *See, e.g.*, *Nuclear Energy Institute v EPA*, 373 F.3d 1251, 1282-83 (D.C. Cir. 2004). While EPA incorrectly focuses on the placement of Section 177 among the Part D provisions, the agency ignores the fact that Section 177 uses language ("standards relating to the control of emissions") virtually identical to the language authorizing California to adopt standards in Section 209(b) ("standards (other than crankcase emission standards) for the control of emissions"). This parallel language is intended to have the same meaning in both places and further reflects the lack of any intent to circumscribe the type of California standard available for opt-in under 177.

Finally, EPA's proposed reading runs afoul of the canon of statutory construction that statutes must be read to avoid absurd or patently unreasonable results. A rule that prevents Section 177 States from adopting California's GHG standards but not any other California standards would result in creation of the "third vehicle" that Section 177 forbids. States would thus be required to either: 1) extract just the GHG portion of the Advanced Clean Cars rules from their programs, creating a hybrid that falls between the California programs and the weakened federal program; or 2) to avoid the third car problem States would also have to drop other non-GHG California standards to fall in-line with the weakened federal program, negating their discretionary authority, not disputed by EPA, to adopt California criteria pollutant standards. Either outcome would be absurd and clearly contrary to what Congress intended in creating Section 177.

d. EPA's Proposed Interpretation Would Get No Deference

Should EPA finalize this proposal, its interpretation would be entitled to no deference by a reviewing Court. The plain language of Section 177 gives EPA no authority to interpose any legally binding rules limiting the standards that states may elect to adopt. Accordingly, the

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Federal. A State can do that by giving 2 years notice to the automobile manufacturing companies. So there is no problem. It will work very smoothly. The States would have the right to adopt only the standards which are identical to the California standards." Legislative History of the Clean Air Act Amendments of 1977 P.L. 95-95 (1979).

Chevron doctrine does not apply. *U.S. v. Mead*, 533 U.S. 218, 231-32 (2001). Nor would any EPA final determination be entitled to a lower level of respect (e.g., *Skidmore* deference). Not only is the agency seeking to establish new requirements never previously identified, it is reversing a long history of past practice without explaining, or even acknowledging, the contradiction. For well over a decade, EPA has been aware of Section 177 States' adoption of California's GHG standards but has not raised this issue. On the contrary, EPA has approved the adoption of California's GHG standards into several states' SIPs.[357] Thus, States have substantial reliance interests in the policies EPA seeks to abandon, and EPA has not satisfied the heightened requirement for its course-change justification. *See Fox Television*, 556 U.S. at 515. This heightened requirement is only strengthened by the fact that EPA's new policy contradicts the factual findings that underlie its approval of California's GHG standards into SIPS. *See id.* EPA's scant, selective, self-serving analysis falls far short of fulfilling its obligation.

e. California's GHG Standards do Address Criteria Pollutants

Even if EPA were correct that Section 177 limits states to adopting California standards designed to control criteria pollutants, which we strongly dispute, the CARB GHG standards fit within that hypothetical limitation. First, CARB has made clear that among the objectives of the vehicle GHG standards is reduction of the number of days with extreme heat that leads to formation of dangerous levels of ozone pollution. 74 Fed. Reg. 32,744, 32,763 (July 8, 2009). And EPA has explicitly confirmed its agreement with California's view: "There is a logical link between the local air pollution problem of ozone and California's desire to reduce GHGs as one way to address the adverse impact that climate change may have on local ozone conditions . . . .it would be appropriate to consider [California's] GHG standards as designed in part to help address [that problem]." *Id.* Since that time, as noted above, EPA repeatedly reaffirmed the connection between GHG emissions and NAAQS nonattainment by approving the adoption of CARB's GHG standards into Section 177 States' SIPs. Yet again, EPA fails to explain its reversal or to even acknowledge that it is contradicting itself although any attempted explanation would lack credibility in light of the large body of science confirming the connection between climate change and ozone pollution.[358] Regardless, because the premise for EPA's proposal is mistaken, the agency should proceed no further.

f. The Proposal Is Too Vague and Conclusory to Allow for Meaningful Public Participation and Therefore Does Not Meet EPA's Obligations under the Administrative Procedure Act

EPA's proposal to "determine that [Section 177] does not apply to CARB's GHG standards" would violate the Administrative Procedure Act (APA), 5 U.S.C. § 501 *et seq.*, both because it is arbitrary and capricious, and because it fails to meet the fundamental legal

[357] EPA has approved California's GHG standards into the SIPs for Connecticut (80 Fed. Reg. 13768 (March 17, 2015)), Delaware (80 Fed. Reg. 61752 (October 14, 2105)), Maine (82 Fed. Reg. 42233 (September 7, 2017)), Maryland (80 Fed. Reg. 40917 (July 14, 2015)), Pennsylvania (77 Fed. Reg. 3386 (Jan 24, 2012)), and Rhode Island (80 Fed. Reg. 50203 (August 19, 2015).

[358] *See* States' Appx. C-118 at 64, 315-317, Nat'l Research Council of the Nat'l Acad. of Sciences, *Advancing the Science of Climate Change* at 64, 315–317 (2010).

requirements for a valid rulemaking proposal under the APA. The APA requires that "general notice of proposed rulemaking shall be published in the Federal Register," including the "terms or substance of the proposed rule." 5 U.S.C. § 553(b). The straightforward purpose of this requirement is to give the affected public an opportunity to provide meaningfully informed comment on an agency's proposal. *See Home Box Office, Inc. v. Fed. Commc'n Comm'n*, 567 F.2d 9, 35-36 (D.C. Cir. 1977). But here, EPA's notice is vague, failing to specify the parameters of any proposed action. It is also open-ended as to timing and method of implementation, and fails to provide key information such as projected costs. Courts will not hesitate to strike down final rules based on proposals so lacking in specificity. *See, e.g.*, *Horsehead Res. Dev. Co. v. Browner*, 16 F.3d 1246, 1268 (D.C. Cir. 1994) (noting that "general notice that a new standard will be adopted affords the parties scant opportunity for comment"). Far from meeting the requirement to "disclose in detail the thinking that has animated" a proposal," *Home Box Office,* 567 F.2d at 35–36, the proposal at issue here creates far more questions than it answers.

EPA should abandon its proposal to determine that Section 177 is limited in a way that excludes California's GHG standards.

CONCLUSION

For the reasons set forth herein, our States and Cities respectfully urge EPA and NHTSA to withdraw their unlawful Proposed Rollback, including their unlawful proposals to preempt state laws.

APPENDICES

Appendix A: Climate Change Impacts

Appendix B: Zero-Emission Vehicle Penetration and Infrastructure

Appendix C: Reference Materials