ORAL ARGUMENT NOT YET SCHEDULED

No. 20-1145

Consolidated with Nos. 20-1167, 20-1168, 20-1169, 20-1173, 20-1174, 20-1176, 20-1177, and 20-1230

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

COMPETITIVE ENTERPRISE INSTITUTE, et al.,
Petitioners,

v.

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION, et al.,
Respondents.

PROOF BRIEF OF STATE AND LOCAL GOVERNMENT PETITIONERS

XAVIER BECERRA
Attorney General of California
ROBERT W. BYRNE
EDWARD H. OCHOA
Senior Assistant Attorneys General
GARY E. TAVETIAN
DAVID A. ZONANA
Supervising Deputy Attorneys General

JESSICA BARCLAY-STROBEL
JULIA K. FORGIE
MEREDITH HANKINS
MICAELA M. HARMS
JENNIFER KALNINS TEMPLE
CAROLYN NELSON ROWAN
ROBERT D. SWANSON
JONATHAN A. WIENER
DAVID ZAFT
M. ELAINE MECKENSTOCK
Deputy Attorneys General
1515 Clay Street, 20th Floor
Oakland, CA 94612-0550
Telephone: (510) 879-0299
Elaine.Meckenstock@doj.ca.gov

Attorneys for Petitioner State of California, by and through its Governor Gavin Newsom, Attorney General Xavier Becerra, and the California Air Resources Board

Additional counsel listed in signature block

TABLE OF CONTENTS

Page

TABLE OF CONTENTS
(continued)

Page

TABLE OF CONTENTS
(continued)

Page

TABLE OF AUTHORITIES

Page

CASES

*Authorities on which Petitioners chiefly rely are marked with an asterisk.

TABLE OF AUTHORITIES
(continued)

Page

TABLE OF AUTHORITIES
(continued)

Page

TABLE OF AUTHORITIES
(continued)

Page

STATUTES

TABLE OF AUTHORITIES
(continued)

Page

REGULATIONS

FEDERAL REGISTER NOTICES

TABLE OF AUTHORITIES
(continued)

Page

GLOSSARY

Adv. Energy & Transp. Petitioners Br.	Brief of Advanced Energy and Transportation Petitioners in Case Nos. 20-1174, -1176, and -1177
Agencies	Environmental Protection Agency and National Highway Traffic Safety Administration
EPA	Environmental Protection Agency
EPCA	Energy Policy & Conservation Act of 1975
GHG	Greenhouse Gas
NHTSA	National Highway Traffic Safety Administration
Public Interest Petitioners Br.	Brief of Public Interest Organization Petitioners

INTRODUCTION

The Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) replaced achievable, cost-effective greenhouse gas (GHG) emission and fuel-economy standards with far weaker ones that will dramatically increase harmful air pollution—including adding almost one billion metric tons of GHG emissions to the atmosphere—and will drive the consumption of almost two billion additional barrels of fuel. EPA and NHTSA neither deny these consequences nor reconcile them with the core purposes of their respective statutes: the Clean Air Act and the Energy Policy Conservation Act of 1975 (EPCA). Instead, they point to other objectives—such as facilitating consumer preferences in the vehicle market—and claim those support rolling back the pre-existing standards. But those other objectives are not the ones Congress unambiguously identified, and the Agencies' interpretative contortions do not establish otherwise. At bottom, both of these Agencies unlawfully prioritized non-statutory objectives over Congress's express purposes and adopted standards inconsistent with their respective statutes.

EPA and NHTSA also flouted their obligations to make reasoned decisions based on the record before them. Despite unequivocal evidence of a

climate crisis that has only worsened since the adoption of the pre-existing standards in 2012, the Agencies remained steadfastly committed to rolling back those standards. They took multiple steps to do so, although none of the rationales advanced along the way was supported by evidence. Indeed, the path to finalizing these Rollbacks is littered with debunked justifications the Agencies advanced and then later abandoned—including claims that rolling back the standards would save auto industry jobs, would prevent thousands of crash fatalities by speeding up the turnover of older cars for newer, safer ones, and would generate more than a hundred billion dollars in net societal benefits.

The rationales on which the Agencies finally relied fare no better because they rest on an analysis that is riddled with consequential errors, including unsupported assumptions, unjustified departures from prior agency findings, unexplained inconsistencies, and simple, baffling mistakes. The fundamental and numerous flaws in the underlying analysis render both Rollbacks arbitrary and capricious; and the EPA Administrator's uncritical adoption of that analysis—which was prepared by NHTSA and roundly criticized by EPA's expert staff—provides an additional, separate basis for vacating EPA's Rollback.

Ultimately, the Agencies fail to identify a supportable reason for replacing effective, feasible standards with weaker ones that directly undermine Congress's objectives, cost consumers money, reduce auto industry employment, and impose significant net costs on society. These actions should be vacated.

JURISDICTIONAL STATEMENT

Petitioners seek review of three agency actions: EPA's 2018 Revised Determination, published at 83 Fed. Reg. 16,077 (Apr. 13, 2018) and EPA and NHTSA's respective 2020 Rollbacks of GHG emission and fuel-economy standards for light-duty vehicles, published at 85 Fed. Reg. 24,174 (April 30, 2020). This Court has jurisdiction to review EPA's actions under 42 U.S.C. § 7607(b)(1) and to review NHTSA's Rollback under 49 U.S.C. § 32909(a)(1).

ISSUES PRESENTED

1. Whether EPA's Revised Determination violated the plain terms of the agency's Mid-Term Evaluation regulation and unlawfully disregarded substantial evidence, including the agency's own prior factual findings.

2. Whether, in rolling back EPA's standards, its Administrator unlawfully disregarded pollution impacts (including by failing to conduct the required conformity analysis), misinterpreted and misapplied Section 202(a)(2)'s lead-

time requirements, and prioritized other, non-statutory objectives over Congress's goal of reducing air pollution.

3. Whether EPA's Administrator's decision to bypass EPA's experts and rely on an analysis prepared by NHTSA in EPA's name, while turning a blind eye to identified errors in that analysis, was an unlawful failure to exercise independent judgment.

4. Whether NHTSA's error-filled analysis fails to support EPA's rationales for its Rollback, rendering it arbitrary and capricious.

5. Whether NHTSA's Rollback contravenes Congress's mandate to set "maximum feasible" fuel-economy standards under EPCA because, among other things, NHTSA replaced technologically and economically feasible standards with ones that will *increase* energy consumption.

6. Whether NHTSA's Rollback is arbitrary and capricious because, like EPA's Rollback, it rests on an error-filled analysis that does not support the agency's rationales.

7. Whether NHTSA violated the Clean Air Act's conformity requirements, as well as the requirements of the National Environmental Policy Act, and whether NHTSA and EPA violated the Endangered Species Act.

STATUTES AND REGULATIONS

Pertinent statutes and regulations are reproduced in a separately bound addendum to this brief.

STATEMENT OF THE CASE

I. STATUTORY BACKGROUND

The Nation's motor vehicles are a substantial source of harmful air pollution, and Congress has directed EPA to reduce their emissions. *See* Pub. L. 89-272 § 201, 79 Stat. 992, 992-93 (1965). Under Section 202(a) of the Clean Air Act, EPA must promulgate "standards applicable to the emission of any air pollutant from" new motor vehicles that "cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." 42 U.S.C. § 7521(a)(1).

States are generally preempted from establishing their own new motor vehicle emission standards. *Id.* § 7543(a). But, recognizing that California's pioneering work in this field would continue to promote national progress, Congress directed EPA to waive preemption for California's standards unless one of three limited bases for denial were satisfied. *Id.* § 7543(b)(1). Congress also authorized other States to adopt and enforce California's standards under certain conditions. *Id.* § 7507.

In 1975, in the face of an energy crisis, Congress required NHTSA to set fuel-economy standards for automobiles as part of a suite of measures to reduce energy consumption. Pub. L. No. 94-163 § 2(5), 89 Stat. 871, 874, 902 (1975).[1] Congress strengthened and expanded this energy conservation program in the Energy Independence and Security Act of 2007. *See* Pub. L. No. 110-140, 121 Stat. 1492, 1498-1501 (2007). The statute requires NHTSA to prescribe "average fuel economy standards" that reflect "the maximum feasible" level "manufacturers can achieve" in a given model year. 49 U.S.C. § 32902(a), (b)(2)(B). In setting these "maximum feasible" standards, NHTSA "shall consider technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy." *Id.* § 32902(f).

Pursuant to these statutory frameworks, EPA and California have set vehicular emission standards, and NHTSA has set fuel-economy standards, for decades. JA___-___[EPA-HQ-OAR-2018-0283-5054_30-56].

[1] The statute assigns this task to the Secretary of Transportation, who has delegated it to NHTSA. 49 CFR § 1.94(c).

II. REGULATORY BACKGROUND

A. The Origins of Vehicular GHG Emission Standards

In 2007, the Supreme Court invalidated EPA's denial of a petition asking the agency to regulate vehicular GHGs because those emissions "may reasonably be anticipated to endanger public health or welfare," *Massachusetts v. EPA*, 549 U.S. 497, 511 (2007), holding that "[t]he Clean Air Act's sweeping definition of 'air pollutant'" encompassed GHGs, *id.* at 528.

California had already adopted GHG standards applicable to light-duty vehicles (i.e., passenger cars and light trucks) beginning with model year 2009. Cal. Code Regs. tit. 13, § 1961.1. After an initial denial, and after *Massachusetts* was decided, EPA granted the State a preemption waiver for those standards. 74 Fed. Reg. 32,744 (July 8, 2009).

In 2009, EPA finalized its "endangerment finding," concluding "that greenhouse gases in the atmosphere may reasonably be anticipated both to endanger public health and to endanger public welfare." 74 Fed. Reg. 66,496, 66,497 (Dec. 15, 2009). EPA recognized public health risks, including changes in air quality, more frequent heat waves and other extreme weather events, and increases in food- and water-borne pathogens, *id.*, as well as harms to public welfare, including threats to water supplies and water quality, *id.* at 66,498. EPA

found that "new motor vehicles and new motor vehicle engines … contribute to the greenhouse gas air pollution" that gives rise to these threats. *Id.* at 66,496. This endangerment finding—which EPA has reaffirmed several times since 2009—requires EPA to regulate GHGs from new motor vehicles and engines. *See Coal. for Responsible Regulation, Inc. v. EPA*, 684 F.3d 102, 126-27 (D.C. Cir. 2012).

B. The National Program

In 2010, the federal government brokered an agreement with California and major automakers that resulted in a "National Program" of harmonized standards for vehicular GHG emissions and fuel economy. *Chamber of Commerce v. EPA*, 642 F.3d 192, 198 (D.C. Cir. 2011). Under this agreement, EPA and NHTSA conducted a joint rulemaking in which EPA promulgated the first federal GHG standards for new motor vehicles and NHTSA promulgated fuel-economy standards. 75 Fed. Reg. 25,324 (May 7, 2010). The standards covered model years 2012 through 2016. *Id.* at 25,324. California and EPA also aligned their respective GHG standards, and California agreed to allow automakers to comply with its state standards by complying with EPA's. *Id.* at 25,328.

Automakers supported the National Program because it reduced administrative and other burdens. *Id.* at 25,328-29. Other stakeholders—

including California—supported the National Program because national standards could more forcefully address urgent public health and environmental threats, especially climate change. *Id.* at 25,326. Mobile sources, and particularly light-duty vehicles, were significant contributors to—indeed, "the fastest growing source of"—the Nation's GHG emissions. *Id.* EPA's standards would secure "substantial reductions" of these emissions—approximately 960 million metric tons. *Id.* at 25,326, 25,328. For its part, NHTSA recognized that light-duty vehicles "account for about 40 percent of all U.S. oil consumption" and affirmed the continuing need to improve their fuel economy. *Id.* at 25,326-27.

The Agencies found that a wide range of technologies already existed to meet their standards and that broader deployment of these technologies would be highly cost-effective. *Id.* at 25,328. Indeed, they found consumers would more than recoup the modest additional costs for new vehicles through reduced fuel expenditures. *Id.* at 25,328-29. And, for consumers who financed their new vehicle purchases, the savings would be immediate, exceeding "the increase in loan payments by $130–$180 per year." *Id.* at 25,329.

EPA's and NHTSA's standards shared a general design framework. Both sets of standards were fleetwide averages based on the "footprints" of the

vehicles an automaker actually sells in a given model year. *Id.* at 25,333. (Footprint refers to the area enclosed by the four points where the tires meet the ground. *Id.*) "Every vehicle model has a performance target, … the level of which depends on the vehicle's … footprint" and on whether the vehicle is classified as a car or truck. *Id.* The standards for a particular automaker and model year are "production-weighted average[s]" of those targets for the fleet of vehicles that automaker produced in that model year. *Id.* A manufacturer that sells both cars and trucks will have two of these production-weighted average standards—one each "for cars and for trucks." *Id.*

Under these footprint-based standards, larger vehicles are generally subject to less stringent standards than smaller vehicles. *Id.* "All vehicles, whether smaller or larger" must make improvements; but, under the footprint-based standards, the Agencies anticipated "no significant effect on the relative distribution of different vehicle sizes in the fleet," meaning "consumers will still be able to purchase the size of vehicle that meets their needs." *Id.* at 25,338.

The Agencies also built similar "compliance flexibilities" into their respective programs, including allowing automakers to earn credits for overshooting the applicable fleetwide-average standards. *Id.* at 25,338-39. Those credits could then be traded to another automaker; used across the

automakers' car and truck fleets in a given model year (e.g., if its truck fleet overcomplied but its car fleet fell short); or applied to compliance deficits in other model years. *Id.* at 25,339. Generally, automakers may use credits to address fleet compliance deficits for the previous three model years or may bank the credits for use in the next five model years. *Id.*

C. Extension of the National Program

EPA, NHTSA, California, and major automakers later agreed to extend the National Program. In a 2012 joint rulemaking with NHTSA, EPA promulgated GHG standards for model years 2017-2025. 77 Fed. Reg. 62,624 (Oct. 15, 2012). Because EPCA limits NHTSA to promulgating five years of fuel economy standards at a time, 49 U.S.C. § 32902(b)(3)(B), NHTSA promulgated fuel-economy standards only for model years 2017-2021, 77 Fed. Reg. at 62,627. However, it announced "augural" standards—harmonized with EPA's—for model years 2022-2025, finding they reflected "NHTSA's current best estimate … of what levels of stringency might be maximum feasible in those model years." *Id.*[2]

[2] In 2013, EPA granted a Clean Air Act preemption waiver for California's Advanced Clean Cars program, which included, among other things, GHG standards for model years 2017-2025 that were similar to EPA's. 78 Fed. Reg. 2,112 (Jan. 9, 2013). EPA withdrew portions of that waiver in

The Agencies explained they were responding "to the country's critical need to address global climate change and to reduce oil consumption," *id.* at 62,626-27, estimating the standards would prevent "approximately 2 billion metric tons" of GHG emissions and would also "save approximately 4 billion barrels of oil." *Id.* at 62,627. The Agencies found that "a wide range of technologies" was already available for compliance, with further advancements and deployments anticipated. *Id.* at 62,631. Although the standards might add, on average, $1,800 to the cost of a new light-duty vehicle, that cost would be dwarfed by fuel savings of $5,700 to $7,400 "for a net [vehicle] lifetime savings of $3,400 to $5,000." *Id.* at 62,627. The Agencies projected "net benefits to society … in the range of $326 billion to $451 billion." *Id.*

The Agencies retained the fleetwide-average and footprint-based approaches of the prior standards, noting, again, that "[m]anufacturers are not compelled to build vehicles of any particular size or type (nor do the rules create an incentive to do so)." *Id.* at 62,627-28. In other words, the Agencies affirmed that these standards "preserve consumer choice – that is, the standards should not affect consumers' opportunity to purchase the size of

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2019. 84 Fed. Reg. 51,310 (September 27, 2019). Challenges to that withdrawal are pending before this Court. *See* Case No. 19-1230 (lead).

vehicle with the performance, utility and safety features that meets their needs." *Id.* at 62,631.

D. The Mid-Term Evaluation

Automakers generally supported the standards but requested a mid-program review of the standards EPA set for model years 2022-2025. 77 Fed. Reg. at 62,636. EPA agreed, committing to conduct a "Mid-Term Evaluation," by April 2018, of the appropriateness of those later-year standards. *Id.* at 62,652. That evaluation would be "a collaborative, robust and transparent process, including public notice and comment" and would begin with, and be based on, a rigorous Technical Assessment Report to be prepared jointly by EPA, NHTSA, and the California Air Resources Board. *Id.* at 62,784. EPA codified these commitments in its Mid-Term Evaluation regulation, identifying eight specific factors it would assess before determining whether the standards remained appropriate. 40 C.F.R. § 86.1818–12(h).

In July 2016, EPA, NHTSA, and the California Air Resources Board published their 1,217-page Technical Assessment Report. 81 Fed. Reg. 49,217 (July 27, 2016). The Report found that a "wider range of [compliance] technologies" had become available at costs "similar or lower, than those projected" when the standards were promulgated in 2012. *California v. EPA*,

940 F.3d 1342, 1347 (D.C. Cir. 2019) (cleaned up). Based in large part on that Report and extensive public comments, EPA issued a 268-page Proposed Determination. *Id.* That Proposed Determination assessed the eight regulatory factors and concluded that the standards for model years 2022-2025 remained appropriate. 81 Fed. Reg. 87,927 (Dec. 6, 2016). EPA finalized that determination in January 2017. JA__[EPA-HQ-OAR-2015-0827-6270_1]; *see also California*, 940 F.3d at 1347.

III. THE CHALLENGED ACTIONS

A. EPA's Revised Determination

"Following the transition in presidential administrations, EPA changed lanes." *California*, 940 F.3d at 1348. On March 15, 2017, President Trump announced his intention to "cancel" the determination issued two months earlier, ostensibly over concerns about possible job losses in the auto industry. *See* 83 Fed. Reg. at 16,078. One week later, EPA announced that it would reconsider the determination for a different reason: to accommodate "additional consultation and coordination with NHTSA." 82 Fed. Reg. 14,671, 14,672 (March 22, 2017).

In April 2018, EPA published an eleven-page Revised Determination concluding that the standards set in 2012 were no longer appropriate and

asserting still different rationales. 83 Fed. Reg. at 16,079. The Administrator claimed there was suddenly "uncertainty" about the availability of compliance technologies, *id.* at 16,082, and asserted brand new concerns about consumer costs, *id.* at 16,084. The Revised Determination contained only fleeting references to the Technical Assessment Report and provided no detailed assessments of the eight regulatory factors. *E.g.*, *id.* at 16,081-82, 16,085.

A coalition of States, nongovernmental organizations, and industry representatives challenged the Revised Determination. *California*, 940 F.3d at 1345. This Court held that the decision was not "final action," 42 U.S.C. § 7607(b)(1), and dismissed the petitions, *California*, 940 F.3d at 1353. Recognizing that EPA might revise its standards, and, in fact, had proposed to do so during the litigation, this Court and EPA's counsel confirmed that EPA's withdrawal of its 2017 Determination did not "eliminate any part of the existing administrative record"—including the Technical Assessment Report. *California*, 940 F.3d. at 1351. It also did not "affect the standard for judicial review of any future final action" on the standards. *Id.* Thus, to be lawful, any changes to the standards would require "a reasoned explanation for" disregarding the factual findings and analysis that underlay both the 2012

rulemaking and "the original mid-term evaluation process." *Id.* at 1351 (cleaned up).

B. The Agencies' Proposed Rollbacks

In 2018, EPA and NHTSA proposed to freeze their respective standards at model year 2020 levels for six years, meaning *no* increase in stringency would be required in model years 2021-2026 (although model year 2021 was not part of the Mid-Term Evaluation). 83 Fed. Reg. 42,986 (Aug. 24, 2018). The standards would still be based on vehicle footprints and automakers' fleetwide averages, with separate standards for car and light-truck fleets. *Id.* at 43,015.

EPA estimated its Proposed Rollback would increase GHG emissions by 872 million metric tons, *id.* at 43,230, eliminating almost half the GHG benefits of the standards adopted in 2012, *see supra* at 12. Freezing the standards would also cause "U.S. fuel consumption to increase by about half a million barrels per day." 83 Fed. Reg. at 42,986. Shifting rationales again, the Agencies claimed the Proposed Rollbacks would avoid thousands of highway crash fatalities and produce approximately $200 billion in net societal benefits. *Id.* at 43,152, 43,157, 43,367-68; *see also id.* at 42,986.

Multiple expert commenters—including the California Air Resources Board, which had collaborated with EPA and NHTSA on the Technical

Assessment Report and past rulemakings—identified numerous, fundamental flaws in the analysis underlying these claims. Indeed, a group of academics whose work had been relied on by the Agencies wrote in *Science* magazine that the Proposal was "misleading," filled with "fundamental flaws and inconsistencies," and "at odds with basic economic theory and empirical studies." JA___[NHTSA-2018-0067-12326_1119].

Among the most consequential errors was the Agencies' inexplicable projection that the pre-existing standards would somehow cause Americans to own tens of millions more vehicles and, as a result, drive about a *trillion* more miles, resulting in more crashes, more fatalities, and more costs to society. 83 Fed. Reg. at 43,098-99, 43,152, 43,257. These unexplained dramatic expansions in fleet size and miles driven were soundly debunked. JA___, ___[EPA-HQ-OAR-2018-0283-5054_228,234]; ___-___[EPA-HQ-2018-0283-2650]; ___-___[EPA-HQ-OAR-2018-0283-5842_Gillingham_Scrappage]. Without them, however, the Proposed Rollbacks did not appear to prevent crash fatalities in a statistically significant way and the alleged societal benefits were seriously diminished. *See* 83 Fed. Reg. at 43,353, 43,368 (Table VII-98) (showing more than $100 *billion* difference in net benefits between "Reference Case" and "Scrappage and Fleet Share Disabled" scenarios).

These enormous errors in the projection of fleet size and miles driven were produced by new models NHTSA developed to estimate the standards' effects on fleet turnover (the replacement of older vehicles with newer ones). JA___-___[EPA-HQ-OAR-2018-0283-5054_188-250]. The models had not been peer-reviewed before the Agencies relied on them. JA___-___[EPA-HQ-OAR-2018-0283-5054_92-93n.135]. However, EPA's experts reviewing NHTSA's analysis had identified the problem (and others). They noted that NHTSA's models produced "vastly unrealistic growth in the overall fleet size, which in turn causes an unrealistic over-inflation of the fatalities estimated." JA___[EPA-HQ-OAR-2018-0283-5666_Attch5-CharmleyEmail_pdf10].

Commenters pointed out many other flaws in the analysis, including numerous departures from factual findings in the joint Technical Assessment Report and in EPA's 2017 Determination. For example, the Agencies chose to constrain which technologies could be applied to which vehicles in ways directly contrary to their previous analyses. JA___-___[EPA-HQ-OAR-2018-0283-5054_93-122]. These assumptions, and myriad other errors, inflated the compliance costs of the pre-existing standards and, thus, the cost savings attributed to the Proposed Rollbacks. *Id.*

C. The Agencies' Final Rollbacks

On April 30, 2020, EPA and NHTSA published their Final Rollbacks. Changing course slightly from the Proposal's preferred alternative of freezing the standards, the Agencies finalized standards that would increase in stringency by approximately 1.5% each year, 85 Fed. Reg. at 24,174, a rate still far lower than the annual increase (approximately 5%) required by the pre-existing standards. *Id.* at 25,106. The vast majority of the work on the Final Rollbacks was done by NHTSA. *E.g.,* JA___-___[ECFNo1858308_ExF_1-2]. EPA's experts were given only two, extraordinarily limited opportunities to review the purportedly joint analysis that NHTSA had prepared. *Id.* In fact, one of those review windows was only about 36 hours long. *Id.* Even so, EPA's experts once again identified numerous errors—many of which were not corrected. Those experts were given the extraordinary instruction to provide their comments only to NHTSA and only in hard copy, which would avoid the public disclosure practices at the Office of Management and Budget. JA___[ECFNo_1858308_ExhG_pdf4]; *see also* E.O. 12,866, § 6(b)(4)(D), 58 Fed. Reg. 51,735 51,743 (Sept. 30, 1993).

The analysis NHTSA prepared—and EPA's Administrator adopted—projected that the Rollbacks would increase GHG emissions by up to 923

million metric tons and "result in 1.9 to 2.0 additional billion barrels of fuel consumed." 85 Fed. Reg. at 24,176. It also estimated that increases in criteria-pollutant emissions from EPA's Rollback would lead to up to 1,000 premature deaths and numerous other adverse health impacts.[3] *Id.* at 25,119. The Agencies acknowledged that the Rollbacks would cost consumers money overall, because increases in fuel expenditures would exceed estimated decreases in vehicle prices. *Id.* at 24,180-81. The Agencies likewise reaffirmed that the "majority" of technologies needed to comply with the pre-existing standards "have already been developed, have been commercialized, and are in-use on vehicles today." *Id.* at 25,107. Indeed, NHTSA predicted automakers would improve fuel economy more than required by its Rollback if it held the standards constant at model year 2020 levels. JA___-___[NHTSA-2018-0067-12636_17-18].

The analysis for the Final Rollbacks no longer projected a massive, unexplained increase in vehicles owned and miles driven under the pre-existing standards. *See* 85 Fed. Reg. at 25,117. That change eliminated the basis for most of the Proposal's purported safety benefits, *id.* at 24,176, along with the hundreds of billions of dollars in purported net benefits that had been its other

[3] Criteria pollutants are those for which EPA has established National Ambient Air Quality Standards. *See* 42 U.S.C. § 7408(a).

primary justification. In fact, the Agencies estimated that the net benefits of the Final Rollback "straddle[d] zero." *Id.*

The Agencies nonetheless maintained that the Rollbacks' safety benefits supported weakening the standards, but they had to try to find another way to bolster the rationale. Thus, the Agencies claimed the Rollbacks would avoid crash fatalities associated with additional driving consumers might do under the pre-existing standards because more stringent standards improve fuel efficiency and reduce the cost of driving. *Id.* at 24,825-26. In the Proposal, the Agencies had recognized that this additional driving is "freely chosen" and that the benefits of this additional driving fully offset its costs (including those from additional crashes). *Id.* at 24,826. For the Final Rollbacks, however, the Agencies decided to attribute these estimated additional crash fatalities to their standards, rather than to consumers' independent choices, and also decided to offset only 90% of the associated costs. *Id.* This new category of purportedly avoided crash fatalities made up approximately 80% of the claimed safety benefits of the Final Rollbacks. *Id.* at 25,119.

The Agencies also claimed the Rollbacks were supported by feasibility concerns about the pre-existing standards (including an assertion that consumer preferences for certain vehicles make automaker compliance

challenging) and by a theory that consumers value the dollars they save "upfront," when they purchase a vehicle, more than the dollars they save at the pump. *Id.* at 25,120.

STANDARD OF REVIEW

This Court holds unlawful agency actions that are "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 42 U.S.C. § 7607(d)(9)(A); *accord* 5 U.S.C. § 706(2)(A), (C). When "Congress has directly spoken to the precise question at issue, … the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress." *Chevron v. NRDC*, 467 U.S. 837, 842-43 (1984). But "if the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute." *Id.* at 843. An agency is not entitled to deference for interpretations of statutes it does not administer or for interpretations not clearly articulated or reasonably explained. *See Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2125, 2126 (2016).

"[T]he same standard of review for arbitrary-and-capricious challenges" applies to EPA's actions under the Clean Air Act as to NHTSA's actions reviewable under the Administrative Procedure Act. *See NRDC v. EPA*, 777

F.3d 456, 463 (D.C. Cir. 2014). An action "is arbitrary and capricious when, *inter alia*, the agency has entirely failed to consider an important aspect of the problem," "offered an explanation for its decision that runs counter to the evidence before the agency," "ignore[d] evidence that cuts against [the agency's] judgment," or "failed to articulate a rational explanation for its actions." *Genuine Parts Co. v. EPA*, 890 F.3d 304, 346 (D.C. Cir. 2018) (cleaned up). Agency fact-finding is arbitrary and capricious unless it is supported by substantial evidence in the record as a whole. *Id.* Moreover, when an agency changes course, it must "display awareness that it is changing position" and provide "a reasoned explanation … for disregarding facts and circumstances that underlay" its prior position. *Encino Motorcars*, 136 S. Ct. at 2126.

SUMMARY OF THE ARGUMENT

The EPA Administrator's effort to roll back the agency's vehicular greenhouse gas standards was unlawful from beginning to end.

1. The Administrator began by arbitrarily rescinding EPA's 2017 Final Determination, which was based upon a robust technical analysis and detailed agency findings. His Revised Determination contravened EPA's Mid-Term Evaluation regulation and departed, without adequate justification, from EPA's own prior findings affirming the appropriateness of the pre-existing standards.

2. EPA's Rollback also suffers from numerous defects that each warrant vacatur.

a. The Administrator unlawfully elevated non-statutory objectives over those specified by Congress. He disregarded the emission increases the Rollback will cause and failed to consider the impacts of those additional emissions on state plans to comply with federal air quality standards. Then, while recognizing that the technologies necessary for compliance with the pre-existing standards already exist, the Administrator extended automakers' lead time on grounds untethered from the statutory text (e.g., consumer preferences). Those improper lead-time findings, which were entirely absent from the Proposal, cannot convert non-statutory objectives into statutory ones or authorize the Administrator to prioritize the former over the latter.

b. The Administrator unlawfully abdicated his responsibility to exercise independent judgment when he uncritically accepted analysis prepared by NHTSA in EPA's name, bypassing EPA experts and ignoring errors they identified in NHTSA's work.

c. EPA's Rollback is arbitrary and capricious because the underlying analysis is riddled with errors that undermine each of the rationales the Administrator advanced. Moreover, because none of these rationales is

independently sufficient to support EPA's Rollback, the failure of any one of them warrants vacatur.

i. *Safety*. The Rollbacks will not improve vehicle safety, as evident from the Administrator's struggle to identify a basis for his contrary claim. He relied on two theories in the Proposal, but one—based on turnover in the Nation's vehicle fleet—provided the vast majority of the alleged safety benefits. That central theory was soundly debunked, and, by the Final Rollback, neither of the two original theories produced fatality figures the Administrator could claim were statistically different from zero. He then turned to a third theory to bolster the safety numbers: attributing to the pre-existing standards the additional driving consumers *choose* to do when vehicles are more efficient and less expensive to operate. But, as the Administrator recognized, this additional driving is a consequence of consumers' independent choices, not government standards, and consumers undertake this additional driving because its benefits match or exceed its costs, including those from car crashes. None of the three theories supports a safety rationale for the Rollback.

ii. *Feasibility*. The Administrator admitted the technologies needed to meet the pre-existing standards are already in use in vehicles on the market today but nonetheless claimed feasibility concerns justify the Rollback.

These concerns rest on multiple unfounded assertions. First, his claim that reductions in compliance costs support the Rollback are undercut by the numerous manipulations and errors in the modeling that substantially inflated those alleged savings. Second, the Administrator's assertion that automakers' use of credits earned through over-compliance in earlier years is a sign of feasibility challenges ignores that this rational exercise of an expressly authorized, cost-effective compliance option indicates only that the program is working as designed. Third, the Administrator's claims that consumers' vehicle preferences present feasibility challenges also fall flat because, as both EPA and NHTSA previously asserted, the standards are expressly designed to permit automakers to accommodate consumer preferences (including those for larger vehicles). Finally, the Administrator's purported concerns that the pre-existing standards would require too many hybrid and electric vehicles to be sold are baseless. The estimates of those sales are inflated because they derive, at least in part, from the inflation of compliance costs for conventional vehicles. And, in any event, the record—and the agency's own prior findings—indicate that these sales levels are readily achievable.

iii. *Consumer Costs.* The Administrator admitted that the Rollback will cost consumers money because the additional fuel costs exceed

even the inflated savings in new vehicle prices. The Administrator's claim that the Rollback nonetheless benefits consumers economically is based on illogical and inconsistent theories that are wholly unsupported by evidence.

iv. *Cost-Benefit Analysis*. The Administrator asserted that the costs and benefits of the Rollback are a wash, but he did not explain how that would support rolling back feasible, cost-effective standards that substantially advance the Clean Air Act's emission-reduction objective. Further, the cost-benefit analysis on which the Administrator relied is riddled with errors—some intentional, some inadvertent—that dramatically skew it in favor of the Rollback. Thus, far from being cost-neutral, the Rollback will actually impose significant costs on society.

NHTSA's Rollback is also unlawful, for many of the same reasons.

1. a. Like EPA, NHTSA misinterprets and misapplies its statute and improperly substitutes non-statutory policy objectives—e.g., facilitating consumer preferences—for Congress's core objective of conserving energy.

b. And, because NHTSA actually prepared the underlying analysis for both Rollbacks, its standards fail due to the same fundamental flaws that infect EPA's: the record does not support NHTSA's claims concerning the bases for its actions.

c. Finally, in addition to undermining EPCA's primary purpose, NHTSA contravened multiple other statutes. It failed to consider the impact of its Rollback on state efforts to attain or maintain federal air quality standards, as required by the Clean Air Act; it failed to consider a reasonable set of alternatives and cumulative impacts, as required by the National Environmental Policy Act; and it failed to consult with the designated experts on threats to protected species, as required by the Endangered Species Act.

STANDING

The Agencies' actions to weaken their standards injure Petitioners in multiple ways. EPA's Revised Determination injured Petitioners' (and especially California's) interests in the robust and transparent process to which EPA committed. It also led to these Rollbacks, which the Agencies estimate will increase GHG emissions by approximately 900 million metric tons. 85 Fed. Reg. at 24,180-81. These actions will exacerbate the climate harms that Petitioners are already experiencing, including loss of sovereign territory; threats to water supplies and other natural resources; damage to state-owned parks and infrastructure; lost tax revenue resulting from harm to major industries; and increased government expenditures required to protect public health, safety, and infrastructure. ADD B-004-B-008, B-018-B-023, B-037-B-

042, B-044-B-047, B-049, B-053-B-058, B-068-B-076, B-082-B-090, B-105-B-114, B-121-B-127, B-132-B-133, B-139-B-140, B-170-B-178;[4] *see Massachusetts*, 549 U.S. at 521-26. The Rollbacks will also hamper Petitioners' achievement of federal and state air quality goals by increasing criteria-pollutant emissions, 85 Fed. Reg. at 25,119, and by exacerbating climate change, ADD B-031-B-032, B-150-B-151. Petitioners will experience additional regulatory burdens and costs as a result. ADD B-028-B-034, B-143-B-151, B-154-B-162.

ARGUMENT

I. EPA'S ROLLBACK BEGAN WITH AN UNLAWFUL REVISED DETERMINATION AND ENDED WITH AN UNLAWFUL RULE

Over the course of efforts to roll back EPA's standards, the Administrator advanced a dizzying series of shifting justifications, asserting new ones as old ones were proven false. He alleged concerns about job losses, asserted a need for more coordination with NHTSA, claimed faster turnover of older vehicles for newer ones would reduce crash fatalities, and asserted hundreds of billions of dollars in societal costs savings, among other claims. As this labored struggle to manufacture a justification for rolling back EPA's pre-existing standards indicates, this was no reasoned decision-making process.

[4] Standing declarations are reproduced in a separately bound addendum.

Indeed, at every step, the Administrator flouted legal requirements; reversed the agency's prior, rigorous factual findings without justification; and disregarded robust evidence that undercut the desired outcome. The end results are 1) a Revised Determination that contravenes both the agency's regulations and the record and 2) a Rollback that disregards Congress's directive to protect public health and welfare and relies on an error-ridden analysis, panned by EPA's own experts, that does not support the action. Both actions should be vacated.

A. EPA's 2018 Revised Determination Contravened Its Regulation and Was Arbitrary and Capricious

The Administrator began the process of rolling back EPA's standards with a gross failure of reasoned decision-making. His April 2018 Revised Determination 1) ignored the extensive technical findings supporting EPA's 2017 Determination that the pre-existing standards remained appropriate, including findings contained in the mandatory Technical Assessment Report; and 2) flouted an explicit requirement that the Administrator complete, and set forth in detail, assessments of eight enumerated factors.[5]

[5] Now that EPA has completed the rulemaking for which the Revised Determination "evinced EPA's intention to begin," *California*, 940 F.3d. at 1351, review of this "preliminary, procedural, or intermediate agency action" is

1. EPA's regulation required the Determination to be "based upon a record that includes … a draft Technical Assessment Report" ("Report"). 40 C.F.R. § 86.1818-12(h)(2). That 1,217-page Report—produced jointly by EPA, NHTSA, and the California Air Resources Board in 2016—found that more compliance technologies existed, at "similar or lower" costs, than the Agencies had projected in 2012. JA___[EPA-HQ-OAR-2015-0827-0926_ES-2]. The Report also concluded that "the [model year] 2022-2025 standards can be achieved largely through the use of advanced gasoline vehicle technologies with modest [to]… low penetrations" of electrification, such as hybrid and electric vehicles. JA___[EPA-HQ-OAR-2015-0827-0926_ES-7]. Based on this detailed technical review, EPA found in the 2017 Determination that its existing standards remained appropriate because they were, *inter alia*, "feasible at reasonable cost" and achievable "through a number of different technology pathways reflecting predominantly the application of technologies already in commercial production." JA___-___[EPA-HQ-OAR-2015-0827-6270_3-4].

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appropriate, 5 U.S.C. § 704. *See also Yaman v. U.S. Dept. of State*, 634 F.3d 610, 613 (D.C. Cir. 2011) (when review of agency's earlier decision is consolidated with review of its final decision, "the matter of finality" of the earlier decision "will be moot").

By contrast, the Revised Determination referenced the substance of the Report only once, superficially,[6] and otherwise acted as though the Report did not exist. For example, the Administrator asserted that there had not been "appropriate consideration to the effect on low-income consumers," 83 Fed. Reg. at 16,084, entirely disregarding the Report's robust discussion of this factor. *See* JA___-___[EPA-HQ-OAR-2015-0827-0926_6-16_to_6_23]; see also JA___-___[EPA-HQ-OAR-2015-5941_4-38_to_4-56]; JA___-___[EPA-HQ-OAR-2015-0827-5942_A-66_to_A-79].[7]

Thus, the Revised Determination was not "based upon" the Report that EPA's own regulation established as a critical component of the record. 40 C.F.R. § 86.1818-12(h)(2); *see also Saudi Arabia v. Nelson*, 507 U.S. 349, 357 (1993) ("based upon" means that the object forms the "basis" or "foundation" for the act in question). Moreover, given EPA's prior technical findings

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[6] Specifically, while discussing energy security, the Administrator asserted that "the situation of the United States is … significantly different from its situation in 2016 when the [Report] was developed." 83 Fed. Reg. at 16,085. He did not explain *how* the situation was different.

[7] The Administrator likewise failed to consider the prior findings as to feasibility and economic practicability, among other factors, and provided no reasoned explanation for his changed positions. Instead, the Administrator gestured vaguely at a "significant record" that EPA had newly obtained and that purportedly created "uncertainty." 83 Fed. Reg. at 16,078-79. But the Administrator never made that record available for public comment or specifically identified its contents.

exhaustively addressing the issues bearing on appropriateness, the 2018 Determination starkly violated EPA's obligation to provide "a reasoned explanation … for disregarding [the] facts and circumstances that underlay" its prior action, *Encino Motorcars*, 136 S. Ct. at 2126 (cleaned up); *see also Am. Wild Horse Pres. Campaign v. Perdue*, 873 F.3d 914, 927 (D.C. Cir. 2017) (agency may not "whistle past [the] factual graveyard" and disregard previous policy and underlying record).

2. EPA's regulation also required the Administrator to "set forth in detail the bases for its determination," including his "assessment" of eight specific factors. *See* 40 C.F.R. § 86.1818-12(h)(4). The 2017 Determination exhaustively addressed each of these issues. In the Revised Determination, however, the Administrator failed to assess these factors at all; instead he made unsupported assertions of "uncertainty" and repeatedly said he would defer the assessments. *See* 83 Fed. Reg. at 16,081-82 (claims of "uncertainty" regarding technological development); *id.* at 16,083 n.21 (noting "numerous peer-reviewed studies" but deferring assessment of them); *id.* at 16,085 (deferring assessment of standards' impact on energy conservation); *id.* at 16,086 (deferring assessment of safety factor). Put simply, although the Administrator purported to determine EPA's standards were no longer appropriate, he did so

without making the assessments required to reach that determination. *See Bus. Roundtable v. SEC*, 647 F.3d 1144, 1150 (D.C. Cir. 2011) (agency "neglected its statutory obligations to assess" where it failed to even "hazard a guess" on the issue) (cleaned up).

The Administrator's violations of the regulatory requirements and his failure to consider, let alone address, EPA's prior findings render the Revised Determination unlawful.

B. EPA's Rollback Is Inconsistent with the Clean Air Act

The Administrator's disregard for legal obligations and record evidence continued with the Rollback of EPA's standards. As shown in the following sections, vacatur is warranted because the Administrator abdicated his responsibility to exercise independent judgment, *see infra* Section I.C., and approved the Rollback based on an error-ridden analysis that fails to support the stated rationales, *see infra* Section I.D.

Vacatur is also warranted because the Administrator failed to "link the policies served by this rule to the objectives set out" in Sections 202(a) and 176 of the Clean Air Act, relying instead "on other policies" to justify the Rollback. *See Indep. U.S. Tanker Owners Comm. v. Dole*, 809 F.2d 847, 853-54 (D.C. Cir. 1987). Under Section 202(a)(1), EPA "shall" set standards to curb vehicular

emissions after it has determined that a pollutant "endanger[s] public health and welfare." 42 U.S.C. § 7521(a)(1). Those standards "shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period." *Id.* at § 7521(a)(2). The goals of these provisions are clear: 1) to protect public health and welfare from harmful air pollution; and 2) to provide sufficient lead time for the development of emission-reducing technologies while avoiding "undue economic disruption" in the auto industry, e.g., the "doubling or tripling the cost of motor vehicles." *Motor & Equip. Mfrs. Ass'n, Inc. v. EPA* (*MEMA I*), 627 F.2d 1095, 1118 (D.C. Cir. 1979). The goal of Section 176 is equally clear: to prevent federal agencies from undermining EPA-approved State Implementation Plans to achieve federal air quality standards. 42 U.S.C. § 7506(c)(1).

Yet the Administrator gave these statutory objectives little to no weight here. He virtually disregarded increases in harmful emissions and conceded that the Rollback is not necessary to provide time for technological development. Instead, the Administrator unlawfully relied on "non-statutory criteria" for "key point[s] in [his] justifications for adopting this rule," "substitut[ing] new goals in place of the statutory objectives." *See Indep. U.S. Tanker Owners*, 809 F.2d at

854; *see also Gresham v. Azar*, 950 F.3d 93, 104 (D.C. Cir. 2020), *cert. granted* 2020 WL 7086047 (Dec. 4, 2020).

1. The Administrator Disregarded the Massive Increase in GHG Emissions the Rollback Will Cause

EPA has repeatedly found that GHG emissions endanger public health and welfare by contributing, for example, to more frequent and intense extreme weather events, reduced water supplies, and rising sea levels that threaten coastal communities and infrastructure. 74 Fed Reg. 66,496, 66,497-98 (Dec. 15, 2009); 80 Fed. Reg. 64,510, 64,517-20 (Oct. 23, 2015). The record here underscores the agency's prior findings and demonstrates that the climate crisis is only growing more dire. Indeed, a recent government report—to which EPA itself contributed—concluded that without significant reductions in GHG emissions, climate-change impacts "are expected to increasingly disrupt and damage critical infrastructure and property, labor productivity, and the vitality of our communities." JA___[EPA-HQ-OAR-0283-7438_NCA4-II_25]; *see also* JA___-____[EPA-HQ-OAR-0283-5481_15-27]; ___-___[EPA-HQ-OAR-0283-5054_303-308]; ___-___[EPA-HQ-OAR-0283-5070_AppxA_3-4].

Nonetheless, the Administrator adopted standards he estimates will *increase* GHG emissions by approximately 900 million metric tons. 85 Fed. Reg. at 25,055. His consideration of these emission increases was "cursory at best"

and did not begin to "square[]" the Rollback "with the Act." *See Indep. U.S. Tanker Owners*, 809 F.2d at 852, 854. The Administrator even went so far as to lump the "degree of reduction of both GHG and non-GHG pollutants" in with other *non-statutory* factors EPA "*may*" consider. 85 Fed. Reg. at 25,106 (emphasis added).

In fact, the Administrator's discussion of climate change consisted largely of adopting *NHTSA*'s environmental analysis, *see id.* at 25,053, which claimed that the Rollback's climate impacts would be "extremely small" because of "the global and multi-sectoral nature of climate change," *id.* at 25,163; *see also* JA___[EPA-HQ-OAR-2018-0283-0664_S-38]; 85 Fed. Reg. at 24,176 (claiming "minimal" impacts). EPA previously concluded the opposite: that reducing vehicular GHG emissions by almost the same amount—960 million metric tons—"would result in meaningful mitigation." *See Coal. for Responsible Regulation, Inc. v. EPA*, 684 F.3d at 128 (citing 75 Fed. Reg. at 25,488-90). EPA also previously concluded that all emitters "must do their part even if their contributions" are small relative to total global emissions, 74 Fed. Reg. at 66,543, and recognized "the urgency of reducing emissions now," 80 Fed. Reg. 64,510, 64,520 (Oct. 23, 2015). The Administrator neither acknowledged these

prior determinations nor explained his contrary conclusions here. *See also* Public Interest Petitioners' Br. at 8-12.

Section 202(a) prohibits the Administrator's fatalistic approach to the climate crisis. EPA "shall" control vehicular emissions that "cause, *or contribute to*" harmful air pollution. 42 U.S.C. § 7521(a)(1) (emphasis added). The fact that the pre-existing standards would not, by themselves, solve the climate crisis does not support the Administrator's decision to do even less. *See Massachusetts*, 549 U.S. at 526. "[T]he U.S. transportation sector emits an enormous quantity of" GHGs, and reductions from that sector "would slow the pace of global emissions increases." *Id.* at 499. By contrast, under the Administrator's approach "it is unlikely that the … cumulative effect of emissions … can effectively be controlled." *See Bluewater Network v. EPA*, 370 F.3d 1, 14 (D.C. Cir. 2004).

2. The Administrator Likewise Disregarded Increases in Harmful Criteria Pollution and Failed to Perform the Required Conformity Analysis

The Administrator also acknowledged that EPA's Rollback will increase criteria pollution, 85 Fed. Reg. at 25,059-60, and projected those increases will lead to premature deaths, exacerbated asthma, and other adverse health

impacts, *id.* at 25,112-13; *see also id.* at 25,083 (Table VII-142).[8] Again, the Administrator failed to square his action with the objectives of Section 202(a).

The Administrator's actions also violated Section 176, which required him to analyze whether the Rollback "conform[s]" to EPA-approved State Implementation Plans demonstrating how States will reduce (or maintain) criteria-pollutant levels. 42 U.S.C. § 7506(c)(1); *see also* 40 C.F.R. § 93.150(a). This requirement—and the threat of substantial sanctions for state planning failures (42 U.S.C. §§ 7407(a), 7410(m), 7509)—underscore the foundational objective of the Clean Air Act: reducing harmful air pollution. The Administrator acted with complete disregard for that goal.

His unsupported assertion that a conformity determination was not required because the Rollback "results in neither direct nor indirect emissions," 85 Fed. Reg. at 25,250, is simply wrong. Indirect emissions are those: "(1) That are caused or initiated by the Federal action and originate in the same nonattainment or maintenance area but occur at a different time or place as the action; (2) That are reasonably foreseeable; (3) That the agency can practically control; and (4) For which the agency has continuing program responsibility."

[8] These estimates of increased pollution and adverse public health consequences are severely underestimated. *See infra* Section I.D.4.a; Public Interest Petitioners Br. at 12-18.

40 C.F.R. § 93.152. The Administrator's admission that the Rollback will cause increased criteria-pollutant emissions satisfies the first, second, and third elements. As to the fourth, EPA clearly has continuing responsibility over mobile source emissions under Section 202.

The Administrator's expectation "that states will evaluate" the consequences of the Rollback "in the context of state implementation plan development," 85 Fed. Reg. at 24,858, is no excuse. The Act requires *federal agencies* to evaluate the impacts of their own actions, and the Administrator's attempt to pass that responsibility to the States is unlawful and only underscores his indifference to Congressional intent.

3. Section 202(a)(2)'s Lead-Time Requirement Does Not Support EPA's Rollback

The Administrator's conclusion that more lead time is warranted does not establish the requisite "link" to Congress's objectives, *Indep. U.S. Tanker Owners*, 809 F.2d at 854, because lead time is the period "necessary to permit the development and application of the requisite technology," 42 U.S.C. § 7521(a)(2). The Administrator himself explained that no such period is needed here because the technologies required to comply with the pre-existing standards "are currently available and in production." 85 Fed. Reg. at 25,108. He likewise conceded that "manufacturers *today* are capable of building vehicles

that can meet" those more stringent standards. *Id.* (emphasis added); *see also id.* at 25,107, 25,131. Congress's lead-time considerations thus provide no basis for the Rollback.

In fact, the Proposal contained no proposed lead-time findings. 83 Fed. Reg. at 43,229. In the Final Rollback, the Administrator purported to make such findings, but none of those findings are connected to the statutory text. Indeed, he interpreted Section 202(a)(2) as concerning only technological development and automaker compliance costs, 85 Fed. Reg. at 25,106, but then proceeded to claim that more lead-time was justified based on entirely unrelated factors: (1) "greater uncertainty about consumer acceptance" of technologies, *id.* at 25,108; (2) "low fuel prices" for consumers and a purportedly "pronounced market shift" to certain vehicles, *id.* at 25,116; or (3) automakers' use of over-compliance credits, *id.* at 25,103. Far from tethering his analysis to the text, the Administrator never even reconciled the interpretation he applied with the interpretation he articulated.

This Court has previously rejected similar atextual readings of Section 202(a)(2) and should do so again here. This section concerns only the "requisite lead time to allow technological developments" and "the timing of a particular emission control regulation," not "its social implications." *MEMA I*, 627 F.2d

at 1118. And Congress's reference to "compliance costs" implicates "only the cost to the motor-vehicle industry to come into compliance." *Coal. for Responsible Regulation*, 684 F.3d at 128. Fuel prices, consumer preferences for (or acceptance of) certain vehicles, and automakers use of credits (that exist solely because automakers previously *overcomplied* with the standards) are not within the *statutory* criteria.[9] *See also Int'l Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 640 (D.C. Cir. 1973) (consumer "driving preferences of hot rodders are not to outweigh the goal of a clean environment"). In fact, claiming that more lead-time is necessary to accommodate consumer preferences contravenes Section 202(a)'s primary purpose: to *change* the market to ensure that more lower-emitting vehicles are sold. *See Advocate Health Care Network v. Stapleton*, 137 S. Ct. 1652, 1662 (2017) (rejecting "goal-defying … statutory construction"). The Administrator's unreasonable application of Section 202(a)(2) cannot support a lawful lead-time finding or transform non-statutory criteria into statutory ones.

[9] The Administrator admits that EPA's program allows over-compliance credits to be banked and traded in order to provide "manufacturers greater flexibility and lead time to address technical feasibility and cost," 85 Fed. Reg. at 25,103-04, but never explains why the use of these credits suggests that even more flexibility or lead-time is necessary. *See also infra* at 80.

4. The Administrator Unlawfully Prioritized Non-Statutory Objectives over Those of Congress

In the end, the Administrator expressly and unlawfully "prioritize[d] non-statutory objectives to the exclusion of the statutory purpose," *Gresham*, 950 F.3d at 104—the protection of public health and welfare through the reduction of harmful air pollution. In fact, he acknowledged that increased emissions weighed "in favor of increased stringency options"—i.e., leaving the pre-existing standards in place—and projected that the "the revised final standards will have a negative impact on air quality health outcomes." 85 Fed. Reg. at 25,119. He nonetheless rolled back the more protective standards, pointing to an array of factors that supposedly favored weaker standards:

1) consumers' ability "to purchase a new vehicle of their choice," *id.*;

2) "the policy goal" of coordinating with NHTSA, *id.* at 25,120;

3) allegedly avoiding crash fatalities primarily based on consumers driving fewer miles when vehicles are less efficient, *id.* at 25,119;[10]

[10] The Administrator also projected some (about 20%) of the Rollback's purportedly avoided crash fatalities would result from (1) faster turnover of older vehicles for newer ones and (2) limiting reductions to vehicle mass. 85 Fed. Reg. at 25,119. The Administrator did not establish that his projections under these theories are statistically significant. *See infra* Section I.D.1. In any event, the 685 avoided fatalities he derives from these theories are similar to or lower than the Rollback's (under)estimated premature mortalities (444 to 1,000)

4) avoiding a need for "significant changes in product lines for any manufacturer," *id.*; and

5) "manufacturer compliance costs, and the related per-vehicle cost savings," *id.*

Even if the Administrator's findings concerning these factors were supported by the record, *but see infra* Section I.D., none of "these non-statutory criteria" link "with Congress' stated objectives in the Act." *Indep. U.S. Tanker Owners*, 809 F.2d at 854. Indeed, with the exception of his failed attempt to shoehorn consumer preferences into Section 202(a)(2)'s lead-time requirement, the Administrator does not even attempt to argue otherwise regarding the first four of these factors.

As to the final factor—automaker compliance costs—that is a statutory criterion when connected to required lead-time. 42 U.S.C. § 7521(a)(2). However, as shown above, the Administrator did not make a lead-time finding on this ground. Nor does the record support one. *See supra* at 40. Congress understood that "press[ing] for the development and application of improved technology," *NRDC v. EPA*, 655 F.2d 318, 328 (D.C. Cir. 1981) (cleaned up),

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from increased pollution, which *is* a statutory factor. 85 Fed. Reg. at 25,119. And the Administrator did not assert that any of his "safety" theories constituted statutory criteria.

would come with costs. Avoiding those costs for no other reason than mere avoidance is, thus, not a statutory objective. And, whatever discretion the Administrator may have to consider compliance costs outside of lead-time requirements, he "is not free to substitute new goals in place of the statutory objectives." *Indep. U.S. Tanker Owners*, 809 F.2d at 854; *see also Oceana, Inc. v. Locke*, 670 F.3d 1238, 1242 (D.C. Cir. 2011) (rejecting interpretation that "would allow the agency to reserve to itself effectively complete discretion").

C. EPA's Administrator Abdicated the Obligation to Exercise Independent Judgment

The Administrator further flouted legal requirements by failing to exercise independent judgment. While he acknowledged this legal obligation and claimed to have fulfilled it, 85 Fed. Reg. at 25118-19, in reality, the Administrator "blindly adopt[ed] the conclusions" of NHTSA, *see City of Tacoma, Washington v. FERC*, 460 F.3d 53, 76 (D.C. Cir. 2006). The Administrator ignored numerous, fundamental flaws in NHTSA's analysis identified by his own agency's experts and, indeed, took extraordinary steps to curtail and conceal EPA staff reviews. The Administrator's unquestioning adoption of another agency's "clearly flawed" analysis warrants vacatur. *See Ergon-W. Virginia, Inc. v. EPA*, 896 F.3d 600, 611 (4th Cir. 2018); *see also U.S.*

Telecom Ass'n v. FCC, 359 F.3d 554, 565-66 (D.C. Cir. 2004) (recognizing risks in agency "delegation to outside entities").

The Administrator's failure to conduct an independent analysis began with the Proposal. Although their review was constrained because NHTSA did not provide the code for its model, EPA's experts identified fundamental flaws with the model and the inputs NHTSA used to estimate compliance costs, including "errors and anomalies" regarding the efficacy of compliance technologies, inflated costs for certain technologies, and "dated" assumptions. JA___[EPA-HQ-OAR-2018-0283-5666_Attch5-CharmleyEmail_pdf56]; *see also NRDC v. EPA*, 954 F.3d 150, 154 n.2 (2d Cir. 2020) (noting that EPA staff "express[ed] serious concerns" about this very modeling). EPA's experts could not "conclude that the current NHTSA analysis reflects the conclusions of the research performed by EPA over the last five years." JA___[EPA-HQ-OAR-2018-0283-5666_Attch5-CharmleyEmail_pdf56]. EPA staff also noted that *the Department of Transportation* had drafted the portions of the preamble purporting to present "the *EPA Administrator's* views on the appropriate level of the EPA standard, EPA's interpretation of the Clean Air Act, EPA's views on what factors are relevant in determining EPA's program design and the EPA

standards." JA___[EPA-HQ-OAR-2018-0283-5666_Attch5-CharmleyEmail_pdf93] (emphasis added).

The Administrator's abdication of this legal obligation persisted with the Final Rollback, as shown by interagency-review materials that EPA improperly excluded from its certified record. These materials include initial and revised drafts of the regulatory preamble, comments EPA exchanged with NHTSA on those drafts, and two EPA documents obtained and released by the Ranking Member of the Senate Committee on Environment and Public Works. *See* ECF No. 1858308, at 6-8 (Aug. 25, 2020) (further describing the materials).[11] These materials are properly the subject of judicial review, notwithstanding the usual rule excluding interagency-review materials from EPA's rulemaking record. *See* 42 U.S.C. § 7607(d)(4)(B)(ii). Insofar as petitioners "challenge … the integrity of the rulemaking process," *Sierra Club v. Costle*, 657 F.2d 298, 389 n.450 (D.C. Cir. 1981), the Court must review materials contradicting EPA's representation that it acted independently and applied its own technical expertise, *e.g.*, 85 Fed Reg. at 24,227. *See also Dep't of Commerce v. New York*, 139 S. Ct. 2551, 2575 (2019) (vacating decision where "the evidence," including extra-record material,

[11] This Court referred to the merits panel a motion by several petitioners to add these materials to the record. ECF No. 1867064.

"tells a story that does not match the explanation" given for the decision); *Oceana, Inc. v. Ross*, 920 F.3d 855, 865 (D.C. Cir. 2019) ("showing of bad faith or improper behavior" warrants record supplementation).

These materials reveal that EPA experts did not see most of NHTSA's drafts of the "joint" final rulemaking documents until they went to the Office of Management and Budget in January 2020—more than a year after the close of the public comment period. JA___[ECFNo_1858308_ExhE_page4of15] (asserting no previous "opportunity to review"), ___[ECFNo_1858308_ExhE_page9of15] (noting approximately "650 pages of text" "not previously seen"). Instead, *NHTSA* had written portions of the draft in *EPA's* "voice," including on issues uniquely within EPA's technical expertise. JA___[ECFNo_1858308_ExhE_page9of15]. In the limited window provided for them to review voluminous and highly technical material, EPA staff identified several "[f]actually incorrect statements & errors." JA___[ECFNo_1858308_ExhE_page10of15]. EPA staff received an "unprecedented" instruction to send their interagency comments only to NHTSA and only in hard copy—rather than to share them with the Office of Management and Budget as they normally would. JA___[ECFNo_1858308_ExhG_page4of6]. This appeared to be an effort "to

conceal EPA comments … critical of [NHTSA's] draft." JA___[ECFNo_1858308_ExhG_page2of6]; *see also* E.O. 12,866, § 6(b)(4)(D), 58 Fed. Reg. at 51,743.[12]

The remarkable exclusion of EPA staff from this "joint" rulemaking continued with NHTSA's final draft. EPA staff had less than 48 hours to review that document. JA___[ECFNo_1858308_ExhF_page2of4]; *see also* JA___[ECFNo_1858308_ExhB_page2of1793]. In the course of this highly abbreviated and rushed review, EPA learned that "the vast majority of EPA's comments"—"more than 250"—had not been addressed. JA___[ECFNo_1858308_ExhF_page3of4].

The numerous fundamental errors in NHTSA's analysis render the Rollbacks arbitrary and capricious. *See infra* Sections I.D., II.B. The EPA Administrator's adoption of that error-filled analysis—without adequate, independent review and over the objections of EPA's experts—exacerbated the legal errors and is an independent basis for vacatur. *City of Tacoma*, 460 F.3d at 75. Finally, the highly irregular bypassing of EPA's technical staff also means that the deference normally due to "EPA's evaluation of scientific data within

[12] This led to an inquiry by EPA's Inspector General that is ongoing at the time of this briefing. *See* JA___-____[ECFNo_1858308_ExhJ].

its technical expertise," *Miss. Comm'n on Envtl. Quality v. EPA*, 790 F.3d 138, 150 (D.C. Cir. 2015) (cleaned up), should not apply because EPA's technical expertise was not utilized.

D. EPA's Rollback Is Also Arbitrary and Capricious Because the Error-Ridden Analysis Fails to Support the Action

The EPA Administrator's reliance on NHTSA's analysis also warrants vacatur for additional, independent reasons: the analysis does not support any of the Administrator's scattershot attempts to justify contravening the Clean Air Act's directives. The attempts to invent a justification began with assertions about possible job losses under the pre-existing standards, 83 Fed. Reg. at 42,987, but NHTSA's analysis found that the Rollbacks would *reduce* auto industry employment, *id.* at 43,436; 85 Fed. Reg. at 25,178. The Administrator then asserted a series of other rationales, including unfounded theories about reduced highway fatalities under weaker standards; vague and unsupported claims of automaker burdens and feasibility concerns under the pre-existing standards; baffling assertions of consumer benefits; and erroneous claims of societal benefits. In the end, although NHTSA put its thumb on the scale in favor of the Rollbacks at every turn, none of these justifications is supported by the analysis NHTSA prepared and the EPA Administrator adopted. EPA's Rollback is a house of cards balanced precariously on "multiple rationales," and

the failure of any one rationale warrants vacatur because there can be no certainty that the agency "would have adopted [the Rollback] absent even" one of its flawed bases.[13] *See Nat'l Fuel Gas Supply Corp. v. FERC*, 468 F.3d 831, 839 (D.C. Cir. 2006).

1. Safety Concerns Do Not Justify the Rollbacks

The policy objective—accelerating the turnover of older vehicles for newer, safer ones—that was the primary stated rationale for the Proposal (and gives these actions their name) does not justify the Rollbacks. In fact, diverse commenters debunked the Proposal's safety claims. JA___-___[EPA-HQ-OAR-2018-0283-5054_226-50], ___-___[NHTSA-2018-0067-12108_Attachment2_42-58], ___-___[NHTSA-2018-0067-11818_16-19]; *see also supra* at 17. And the Final Rollback reflected drastically different levels of purported safety benefits and relied almost entirely on a brand-new causation theory for its avoided fatality figures, as shown in this table:

[13] Although this section focuses on EPA's Rollback, NHTSA's Rollback suffers from these same flaws (except where noted herein) because both Agencies relied on the same purportedly joint analysis. *See infra* Section II.B. Accordingly, at times this brief will refer to the Agencies' actions collectively and to the underlying analysis as that of both Agencies although NHTSA prepared it, *see supra* Section I.C.

Avoided Crash Fatalities Attributed to EPA's Rollback by the Administrator[14]

Cause of Claimed Reductions in Crashes:	Proposal	Final
Faster Fleet Turnover	7,880	447
Less Reduction to Vehicle Mass	468	238
Less "Rebound" Driving	0	2,584

These radical shifts, on their own, suggest what reviewing the safety analyses reveals: the Administrator's claimed safety benefits lack record support. In fact, in the Final Rollback, the first two theories produce fatality figures that even the Administrator does not claim are statistically significant.[15] And the third safety theory requires an analytical step the Agencies have never before taken—attributing the consequences of consumers' independent driving

[14] The Agencies quantified the consequences of EPA's and NHTSA's Rollbacks separately due, *inter alia*, to differences in the programs. Unless otherwise specified, this section uses figures applicable to EPA's Rollback. The data in this table comes from 83 Fed. Reg. at 43,157 (Table II-77) (Proposal); 85 Fed. Reg. at 24,842 (Table VI-273) (Final). The table also reflects the Agencies' statement that, for the Proposal, they "measured" rebound fatalities but did not "directly attribute[]" them to the standards. 83 Fed. Reg. at 43,107.

[15] These figures are also more than offset by the (artificially low) adverse health impacts projected from increased pollution due to EPA's Rollback (which include up to 1,000 premature deaths).

decisions to the Rollbacks. None of the three theories on which the Administrator relied supports a safety rationale for EPA's Rollback.

First, the Administrator relied on a "fleet turnover" theory—that EPA's Rollback would reduce new vehicle prices, causing consumers to exchange older vehicles for newer, safer ones.[16] 83 Fed. Reg. at 42,995; 85 Fed. Reg. at 24,187. As explained *supra* at 17, the thousands of avoided fleet-turnover fatalities claimed in the Proposal were illusory, and, despite attempts to inflate them, the Final Rollback's estimates are approximately 95% lower. The Administrator cannot even show that these new, final figures are statistically different from zero.

In fact, the effect of the Agencies' Rollbacks on new vehicle sales—the backbone of the fleet-turnover theory—is extraordinarily small. NHTSA's sales model, which the EPA Administrator adopted, projected that EPA's Rollback would increase new vehicle sales by only "about one percent of total sales between 2017 and 2050." 85 Fed. Reg. at 24,617. These projected impacts are minuscule in a market where annual sales normally fluctuate by several percentage points in a stable economy, and up to 10-20% in more volatile

[16] The Agencies frequently refer to fleet turnover as "sales" of new vehicles and "scrappage" of older vehicles. *E.g.*, 85 Fed. Reg. at 24,217. This brief uses the simpler term "fleet turnover."

times. JA___[EPA-HQ-OAR-2018-0283-5054_198] (Fig. VI-4). The Administrator made no effort to demonstrate that this projected 1% change is statistically significant and, in fact, argued elsewhere that far greater uncertainty (and variability) in vehicle sales forecasts is inevitable given the innate uncertainty in such predictions. 85 Fed. Reg. at 24,615.

The Administrator nonetheless relied on this projected 1% increase in sales of new vehicles to claim the Rollback will avoid 447 crash fatalities over the trillions of miles driven by the hundreds of millions of model year 1977-2029 light-duty vehicles during the decades that those vehicles are on the roads. 85 Fed. Reg. at 24,842 (Table VI-273). This figure is dwarfed by the 36,560 total crash fatalities projected to occur in 2018 alone.[17] Moreover, as with the sales projections that are the crux of this theory, the analysis adopted by the Administrator did not even attempt to show that the estimate of 447 avoided crash fatalities over a much longer period is statistically significant.

Further, the Administrator must explain how the data supports the fleet-turnover theory, especially because EPA previously conceded that it is "difficult, if not impossible, to disentangle the effects of the standards on

[17] JA___[https://www-fars.nhtsa.dot.gov/Main/index.aspx[cited_at_85_Fed_Reg_at_24,823]].

vehicle sales from the effects of macroeconomic or other conditions on sales." JA___[EPA-HQ-OAR-2015-0827-0926_6-1], ___[EPA-HQ-OAR-2015-0827-0926_6-5] (finding estimates of these effects too uncertain to use). The Administrator cannot do so, however, because the modeling produced unexplained, inconsistent results that render the estimates as unreliable as EPA previously concluded they would be. For example, although the fleet-turnover theory, if true, should show reduced fatalities in every year of the analysis (because the Rollbacks purportedly result in lower new vehicle prices every year), the actual modeling of this effect projected that the Rollbacks will *increase* average fatalities over at least nine calendar years. 85 Fed. Reg. at 24,840 (Table VI-271).

Moreover, the Administrator's fleet turnover fatality estimates are exaggerated because they rely on sales projections that are themselves exaggerated. As shown below, the compliance costs of (and thus the vehicle price increases from) more stringent standards were substantially inflated, *see infra* at 62, leading to substantially inflated projections of increased vehicle sales under weaker standards. In addition, the sales analysis relied on an erroneous assumption that consumers are much more responsive to new-vehicle price decreases than they actually are. 85 Fed. Reg. at 24,617 nn.1,641-42. NHTSA

and the EPA Administrator assumed a price elasticity of -1, meaning that for every 1% increase in new vehicle prices, new vehicles sales would decline by 1%. Yet EPA had previously criticized this very assumption because it is "old" and is a "short run" estimate inappropriate for standards with long-term effects. JA___[EPA-HQ-OAR-2015-0827-5942_A-40]. Indeed, the elasticity assumption rested on three studies that are decades-old (and were based on even older data), JA___[Kleit], ___[Bordley], ___[McCarthy[All_cited_at_24,617n1641]], and a fourth study that undermines the Agencies' assumption because it calculated a long-range price elasticity of -0.61—39% lower than the Administrator's assumption. JA___[McAlinden2016_1[cited_at_24,617n1642]. Both EPA's Science Advisory Board and the only peer reviewer to address this issue panned the -1 price-elasticity assumption, with the peer reviewer stating that it lacks "solid grounding in economic evidence" and that elasticity should be "well below" -1. JA___[EPA-HQ-OAR-2018-0283-7659_23], ___[EPA-HQ-OAR-2018-0283-0653_B-33], ___[EPA-HQ-OAR-2018-0283-0653_B-35]. Had the analysis used an appropriate, lower price elasticity—such as the -0.2 to -0.3 figure calculated for the Proposal, 83 Fed. Reg. at 43,075—the effect of the Rollbacks on new vehicle sales, and thus on fleet-turnover fatality estimates, would have

been even smaller and even more insufficient to sustain a safety rationale for these standards.

Second, in both the Proposal and the Final Rollbacks, NHTSA and the EPA Administrator hypothesized that more stringent standards would cause automakers to produce lighter vehicles and that lighter vehicles are less safe. But the Administrator admitted that the 238 fatalities purportedly avoided by EPA's Rollback (which are spread over the decades-long lives of model year 1977-2029 vehicles) are statistically indistinguishable from zero. 85 Fed. Reg. at 24,750, 24,842; JA___-___[EPA-HQ-OAR-2018-0283-5054_266-70]; ___[NHTSA-2018-0067-11881_45].[18] In other words, the record does not show that the Rollbacks will prevent *any* fatalities under this theory.

Further, the evidence demonstrates that reducing vehicle mass may actually *reduce* fatalities. In asserting otherwise, NHTSA and the EPA Administrator relied on old data—from model years 2004-2011—that reflects

[18] Even the 238 figure is overstated. For one of five categories of vehicles (lighter trucks), NHTSA transposed numbers in one factor in the equation, using 0.31 where the methodology and inputs indicate the value should be 0.13. *See* 85 Fed. Reg. at 24,748. Applying the correct value reduces the difference in mass-reduction fatalities by 62 for just lighter trucks. There may be similar errors for three other vehicle categories as well, but because the Agencies did not disclose the data underlying those calculations, it is impossible to know.

outdated ways of reducing vehicle mass. Today, automakers reduce vehicle weight by, for example, replacing steel with new materials that are stronger and lighter, as both experts and industry informed the Agencies. JA___-___[NHTSA-2018-0067-5781_2-8]; ___-___[NHTSA-2018-0067-11973_1-13]; ___-___[NHTSA-2018-0067-11952_6-13]; ___-___[EPA-HQ-OAR-2018-0283-5054_270-76]. Moreover, these footprint-based standards, which vary with vehicle size, *see supra* at 10, were designed by EPA to avoid perverse incentives to make small vehicles even smaller (and thus more dangerous in collisions with large vehicles). 85 Fed. Reg. at 24,752. Instead, automakers can sensibly lighten larger vehicles, improving safety. JA___-___[NHTSA-2018-0067-5781_2-8]; ___-___[NHTSA-2018-0067-11952_9-13].

Third, with the basis for the Proposal's purported safety benefits—purportedly avoided fleet-turnover fatalities—in tatters, NHTSA and the EPA Administrator attempted to bolster the avoided fatality numbers and rescue their safety rationale in the Final Rollbacks by attributing fatalities from "rebound" driving to their standards for the very first time. Rebound driving is the additional driving consumers choose to do when improved fuel-economy reduces the cost of driving. As the preamble acknowledged, in previous rulemakings (and in the Proposal), the Agencies had "factored" rebound

driving "into cost-benefit analyses," 85 Fed. Reg. at 25,152, but had not attributed related fatalities to their standards. They had previously recognized that rebound driving is not "imposed on consumers by [the] standards" but, rather, results from independent consumer decisions that "the utility of more driving exceeds the marginal operating costs as well as the added crash risk it entails." 83 Fed. Reg. at 43,107. Accordingly, in the Proposal, the Agencies "completely offset[]" rebound driving's costs (including those from crash fatalities) with equal benefits. *Id.* Further, because rebound driving "is a consumer choice," the Agencies attributed "[o]nly those safety impacts associated with mass reduction and those resulting from" fleet turnover—and not rebound-related safety impacts—to their standards. *Id.*

In the Final Rollback, the EPA Administrator reaffirmed that "rebound miles are not imposed on consumers by regulation" and are a "freely chosen activity resulting from reduced vehicle operational costs," 85 Fed. Reg. at 24,825, but he nonetheless arbitrarily attributed the avoided fatalities associated with those anticipated consumer choices to EPA's Rollback, *id.* at 25,119. The Administrator also decided to offset only 90% of rebound-driving costs, *id.* at 24,826, while inexplicably reasserting a finding that supports the previous 100% offset—namely, that "the mobility benefits [rebound driving] provides

necessarily exceed the additional operating costs and increased exposure to safety risks it entails." *Id.* at 24,798.

Thus, the number of purportedly avoided rebound fatalities attributed to the Rollback rose from 0 to 2,584, comprising over 79% of the 3,266 lives the Administrator claimed will be saved by EPA's Rollback, with no claim that the other 21% are statistically significant. *Id.* at 24,842 (Table VI-123).[19] Notably, the Administrator did not explain why it was appropriate to attribute 100% of the purportedly avoided rebound fatalities, but only 10% of the associated benefits, to the Rollback.

Moreover, these rebound-related fatalities bear no relation to vehicle safety. Instead, the Administrator's position here boils down to the contention that the government should *impede* mobility by making driving more expensive because less driving means fewer accidents and fatalities. He attempted to disavow this view, claiming no "intention … to restrict mobility or to discourage driving, based on the level of the standards," *id.* at 25,119, presumably because the government has not promoted this policy view in other decisions, such as infrastructure investments. But the Administrator's stated

[19] This estimate of avoided rebound fatalities is significantly exaggerated by the inflated estimate of the rebound effect. *See infra* at 91.

intention is belied by his decision that it was "appropriate to consider" rebound-related fatalities as a "factor weighing toward reduced stringency" for EPA's standards. *Id.* And without those purportedly avoided fatalities, the safety rationale for the Rollback would be based entirely on numbers the Administrator cannot show are statistically different from zero.

As shown above, the Administrator never reconciled his "safety" concerns (which are mostly about additional driving Americans might choose to do) with his complete disregard for the public health impacts of the Rollback. *See supra* Section I.B. Moreover, the Administrator's attempts to manufacture a safety rationale for the "SAFE" rule bear numerous hallmarks of arbitrary and capricious decision-making: they are inconsistent (both between proposal and final action and within the Final Rollback itself); they depart, without adequate explanation, from prior findings and approaches; and they are unsupported by either evidence or logic.

2. The Pre-Existing Standards Remain Readily Feasible

The Administrator also purported to justify EPA's Rollback based on costs to industry and alleged feasibility concerns with the pre-existing standards. But these rationales are just as unfounded as the purported safety benefits.

a. The Analysis Drastically Inflated the Compliance Costs of More Stringent Standards

The Administrator claimed that compliance costs to industry "would have been too high under the standards set forth in 2012," 85 Fed. Reg. at 24,176, and that EPA's Rollback will save automakers an average of $977 per vehicle, *id.* at 24,181 (Table I-6). But the Administrator assumed automakers would not bear these modest compliance costs, and would instead pass them all on to consumers (*id.* at 24,596, 24,617), who would still save an average of $678 over the lifetimes of their new vehicles, *id.* at 24,181 (Table I-6). Further, as detailed below, the estimates of compliance costs are substantially inflated.

NHTSA grossly manipulated its "Volpe Model," which is supposed to simulate the most cost-effective technology path by which an automaker will comply with a given standard. At a high level, for each automaker and each model year, the Volpe Model surveys a menu of technologies deemed available for vehicles scheduled to be redesigned or refreshed that year and adds the technologies deemed most cost-effective until the automaker's fleet complies with the standard being modeled. *Id.* at 24,276. Total compliance costs for each vehicle are equal to the sum of the costs of all technologies selected. For example, if the model adds two technologies to Ford's F-150 truck to ensure compliance with a chosen standard, the compliance cost for each Ford F-150 in

that model year will be the sum of the costs of those two technologies. As expert engineers at the California Air Resources Board, EPA, and other organizations found, the iteration of the Volpe Model employed for these Rollbacks does not accurately reflect reality.

These inflated compliance costs for the pre-existing standards undermine a central claim that the Rollback was warranted and, thus, render the action arbitrary and capricious.

(1) The Modeling of the Use of High-Compression-Ratio Engine Technologies Was Wrong

In three separate ways, NHTSA prevented the Volpe Model from applying key high-compression-ratio technologies to certain types of vehicles that already have those technologies in the real world.[20] In part because these technologies are so cost-effective, *each* of these flaws inflated the purported cost of meeting the pre-existing standards by *billions* of dollars.[21] Because those

[20] High-compression-ratio technologies (sometimes called "Atkinson" technologies) improve fuel efficiency and reduce GHG emissions by making an engine's compression stroke (which "compresses" the gasoline and air in the engine before it is ignited) shorter than its expansion stroke (which captures the energy from igniting the gasoline and delivers it to the vehicle's wheels).

[21] The Agencies measured the Rollbacks' costs and benefits using two alternative rates (3% and 7%) to discount costs and benefits realized in the future. Unless otherwise specified, this brief uses figures applying a 3%

compliance costs are inputs into the Agencies' analyses of vehicle sales, purportedly avoided crash fatalities, and other factors, correcting these enormous compliance cost errors also reduces the claimed societal benefits of the Rollbacks by billions of dollars. That is particularly noteworthy, given the Agencies' own estimates that "societal net benefits" "straddle zero." 85 Fed. Reg. at 24,176. In fact, correcting one of these errors (the third discussed below) would, by itself, render the Rollbacks net costly to society even under a 7% discount rate (which is the only discount rate for which the Agencies claimed net benefits). JA___-___[NHTSA-2018-0067-12636_1805-06], ___-___[NHTSA-2018-0067-12636_1809-10] (compare "Reference Case" and "HCR2 Available" lines).

1. NHTSA committed a coding error that caused the Volpe Model to operate differently than claimed. Specifically, the Rollbacks' preamble stated that the Volpe Model allowed the application of high-compression-ratio technologies to *all* four-cylinder engines in small and mid-size vehicles, with three exceptions (pickups, vehicles that share a base engine with a pickup, and

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discount rate. Additionally, this brief quantifies errors where possible, but it cannot do so for flaws where, *inter alia*, the Agencies did not run a scenario with the flaw corrected or provide enough record information to permit Petitioners' experts to quantify the impact.

vehicles already on another purportedly incompatible advanced engine path). 85 Fed. Reg. at 24,174, 24,427. However, the Volpe Model's code *prevented* it from applying high-compression-ratio technologies on 25 four-cylinder engines not covered by those exceptions.[22]

This is a sizable error because these 25 engines are used on 2,580,898 vehicles in the modeled fleet, or almost 40% of vehicles that the Agencies themselves stated should be allowed to employ high-compression-ratio technologies.[23] This coding mistake exaggerated the additional compliance costs of retaining EPA's pre-existing standards by about $5 billion.[24]

2. The Volpe Model also arbitrarily limited application of high-compression-ratio technologies to other engines and vehicles, specifically six- and eight-cylinder engines *and* all pickups. 85 Fed. Reg. at 24,427. These

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[22] JA___[Model_Files] (Central Analysis/input/market_ref.xlsx, Engines tab, Columns AE-AF). The four-cylinder basic engines improperly blocked from adopting high-compression-ratio technologies are engines 111400, 111800, 111801, 112400, 112501, 211500, 211800, 212001, 212400, 212401, 221601, 221801, 222001, 222002, 222501, 222502, 241501, 252001, 252401, 252402, 253001, 1316001, 1320001, 1325001, and 1325002.

[23] *See* JA___[Model_Files] (Central Analysis/input/market_ref.xlsx, cross-reference and aggregate Vehicles tab, Column Z, and Engines tab) (6,578,136 qualifying vehicles).

[24] To calculate this difference, Petitioners' experts removed the erroneous code for the engines listed in the previous footnote and re-ran the model.

restrictions—which neither NHTSA nor EPA had ever before found warranted[25]—prevented the Volpe Model from accurately reflecting the real world. There are abundant examples of pickups and other vehicles that use six- and eight-cylinder engines with high-compression-ratio technologies, such as the Toyota Tacoma, Dodge Ram, and various Lexus luxury sedans and SUVs. JA___[EPA-HQ-OAR-2018-0283-5456_Attachment_3_I-3] (listing examples and categories of vehicles), ___[EPA-HQ-OAR-2018-0283-5054_103], ___[EPA-HQ-OAR-2018-0283-5054_109]] (Pentastar engine, which is used on 2019 Dodge Ram). EPA staff identified these unjustified changes in modeling, calling them "not realistic" and "indefensible." JA___-___[EPA-HQ-OAR-2018-0283-5666_Attachment_12_pdf47-63], ___[EPA-HQ-OAR-2018-0283-5666_Attachment_12_pdf65].

NHTSA and the EPA Administrator asserted that high-compression-ratio technologies inhibit performance when vehicles need to carry heavy loads, such as when towing. But they admitted that automakers have overcome this problem by allowing engines to operate without high-compression-ratio technology in those situations. 85 Fed. Reg. at 24,408, 24,426. Their suggestion

[25] *See* JA___[EPA-HQ-OAR-2015-0827-5941_2-309] (no such restrictions in mid-term evaluation), ___-___[EPA-HQ-OAR-2015-0827-0926_5-31_to_5-32], ___[EPA-HQ-OAR-2015-0827-0926_5-289] (same).

that these are not true high-compression-ratio engines because they do not operate at maximum efficiency at all times is nonsensical. *See id.* at 24,407-08. As the preamble acknowledged, these engines have improved efficiency, and, at worst, these efficiency gains are slightly smaller than in other engines. *Id.* at 24,407 (acknowledging that "the difference in vehicle application (high performance versus standard performance vehicles, towing requirements, trucks) leads to different effectiveness levels"), 24,408 (admitting that high load demands only "limit the amount of Atkinson operation"). The Volpe Model could have assigned high-compression-ratio technologies lower effectiveness in engines that sometimes need to carry large loads. Instead, it was programmed to assume counterfactually that these technologies could never be used in those engines.

This modeling "bears no rational relationship to the reality it purports to represent," *Columbia Falls Aluminum v. EPA*, 139 F.3d 914, 923 (D.C. Cir. 1998), and the resulting analysis is contrary to the evidence, *USWAG v. EPA*, 901 F. 3d 414, 432 (D.C. Cir. 2018). The erroneous restriction on six- and eight-cylinder cars increased the alleged compliance cost savings under EPA's Rollback by about $5 billion. JA___-___[NHTSA-2018-0067-12636_1807-08] (compare "HCR0 and HCR1 Available Except in Pickups" to "Reference

Case"). Although the analysis did not estimate the impact of the improper restriction on pickups, that error inflated the alleged cost savings even more.

3. NHTSA and the EPA Administrator also erred in assuming that high-compression-ratio technologies could not improve beyond 2014 levels. 85 Fed. Reg. at 24,409. This is yet another inadequately justified departure from earlier technical findings, which correctly anticipated continued efficiency improvements. JA___-___[EPA-HQ-OAR-2015-0827-5941_2-34_to_2-35], ___-___[EPA-HQ-OAR-2015-0827-5941_2-308_to_2-311]. Significant advancements on 2014 high-compression-ratio technology have now made it to market. *See* 85 Fed. Reg. at 24,410 (acknowledging that 2018 Toyota Camry and Corolla have high-compression-ratio engines with efficiency-enhancing cooled exhaust gas recirculation); JA___-___[NHTSA-2018-0067-12636_470-71] (observing that the 2019 Mazda CX5 and Mazda 6 have high-compression-ratio engines with efficiency-enhancing cylinder deactivation), ___-___[EPA-HQ-OAR-2018-0283-5054_101-02], ___[NHTSA-2018-0067-12389_1], ___[NHTSA-2018-0067-12431_1] (Toyota citing the 2018 Camry). EPA staff also identified this flaw. JA___[EPA-HQ-OAR-2018-0283-5666 _Attachment_12_pdf66]. It was not corrected, and, consequently, the model does not reflect reality.

There were several readily available ways to fix this flaw. The Volpe Model contained an existing "package" of technologies designed to capture these next-generation high-compression technologies,[26] and NHTSA and EPA had used that package in the 2016 modeling for the Mid-Term Evaluation process. JA___-___[EPA-HQ-OAR-2015-0827-5941_2-293_to_2-308] (calling it "ATK2"). NHTSA and the EPA Administrator declined to do so here, contending its use would be "speculative" because the *exact* combination of technologies in the package have not appeared together in a marketed vehicle. 85 Fed. Reg. at 24,383, 24,409, 24,411. However, EPA's own testing shows that high-compression-ratio engine improvements in marketed vehicles have already achieved effectiveness levels consistent with those predicted for the package. JA___[NHTSA-2018-0067-12389_2,], ___[NHTSA-2018-0067-12389_Article_Attachment_18]. Thus, the 2016 package could have been applied as a vetted projection of next-generation high-compression-ratio technologies. Alternatively, of course, NHTSA could have created—and the Administrator could have demanded—a new technology package or could have

[26] This package of technologies is referred to as "HCR2," which distinguishes it from packages of earlier high-compression-ratio technologies—"HCR0" and "HCR1"—that the Agencies did allow the model to apply, although not to the extent they should have, *see supra* at 64.

allowed the Volpe Model to apply the individual next-generation technologies already in the model. JA___[EPA-HQ-OAR-2018-0283-5054_102], ___[NHTSA-2018-0067-12389_1], ___[NHTSA-2018-0067-12636_490] (listing cooled exhaust gas recirculation and advanced cylinder deactivation as technologies in the model).

Any of these paths would have reflected where technology stands now and where it is headed. Instead, NHTSA and the EPA Administrator simply abdicated their responsibilities to recognize technological advances that have *already* occurred, *see Columbia Falls Aluminum*, 139 F.3d at 923, and to "look to the future" for further advancements, *NRDC*, 655 F.2d at 328. The result was a $18 billion inflation in compliance costs for the pre-existing standards and a $24 billion inflation in overall net benefits for the Rollback (at a 3% discount rate). JA___-___[NHTSA-2018-0067-12636_1807-08] (compare "HCR2 Available" and "Reference Case").

(2) The Analysis Contains Numerous Other Compliance Cost Errors

The high-compression-ratio engine flaws only scratch the surface. The California Air Resources Board and other experts identified countless other ways compliance costs of the pre-existing standards were arbitrarily inflated to make the Rollback appear more desirable. For example:

- In a departure from prior rulemakings, JA___-___[EPA-HQ-OAR-2015-0827-0926_5-15_to_5-16], NHTSA and the EPA Administrator inexplicably relied on engine efficiency data that was seven to ten years old, rather than the latest data produced by EPA's extensive "benchmarking" studies of engines in existing vehicles.[27] EPA staff called the data used for the Rollback "out of date." JA___[EPA-HQ-OAR-2018-0283-5666_Attachment_12_pdf57]; ___[ECFNo_1858308_ExhC_210]; *see also* JA___-___[EPA-HQ-OAR-2018-0283-5456_Attachment_3_I-44_to_I-50]. The use of old engine data caused the Volpe Model to systematically underestimate technologies' efficiency and, thus, apply more technologies than necessary, falsely increasing projected compliance costs.

[27] *See*, *e.g.*, 85 Fed. Reg. at 24,341; JA___[EPA-HQ-OAR-2018-0283-7673_ANL_Model_Documentation_159] (describing that the base engine is modeled off of a model year 2013 vehicle), ___-___[NHTSA-2018-0067-12636_425] (Table VI-41) (showing that most other engine technologies are modeled off of the base engine), ___[EPA-HQ-OAR-2018-0283-7673_ANL_Model_Documentation_173] (describing that another engine is modeled off of "2010 Toyota Prius . . . data"), ___-___[NHTSA-2018-0067-11984_Rogers_16-18] (noting EPA data showing the 2016 Honda Civic "almost 10% more efficient" than NHTSA's engine modeling predicted), ___-___[EPA-HQ-OAR-2018-0283-5836_Benchmarking_a_2016_Honda_Civic] (EPA Civic study).

- The Agencies' hybrid[28] powertrain data was extraordinarily outdated, such that the maximum hybrid efficiency assumed possible through 2029 falls short of real vehicles on the market today. For example, the Model coded the 2017 Toyota Camry LE Hybrid as having the most advanced hybrid powertrain possible,[29] but in reality, Toyota incorporated substantial powertrain improvements into the 2018 Camry LE Hybrid.[30] These, along with other technologies, improved the 2018 Camry LE Hybrid's fuel economy by 25% over its 2012 level, whereas the Model—which had no powertrain advances available—projects the 2029 Camry LE Hybrid will improve only 13% over the 2012 level.[31]

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[28] Hybrids are vehicles that use two or more power sources, such as gasoline and electricity.

[29] JA___[Model_Files] (Central Analysis/output/CAFE_ss_ref/reports-csv/vehicles_report.csv, cell CH2535, showing Camry LE Hybrid with "SHEVPS" powertrain); 85 Fed. Reg. at 24,471 (SHEVPS is most efficient hybrid powertrain).

[30] *See, e.g.*, Ready for Launch: The Countdown Begins for the Highly Anticipated All-New 2018 Toyota Camry, Toyota Newsroom (June 21, 2017), https://pressroom.toyota.com/all-new-2018-toyota-camry-launch (describing the "next-generation Toyota Hybrid System," including the Power Control Unit that plays a "key role" in improving the vehicle's operational efficiency).

[31] JA___[https://fueleconomy.gov/feg/download.shtml] (compare 2012 Datafile, cell O549, with 2018 Datafile, cell O1085); ___[Model_Files] (Central Analysis/output/CAFE_ss_ref/reports-csv/vehicles_report.csv, cell AH37887).

- NHTSA added a $300-per-vehicle technology called variable valve lift to all turbocharged engines (48% of the fleet), even though it provides minimal benefit to those engines and nearly all automakers use a less-expensive technology instead. JA___[NHTSA-2018-0067-11984_Rogers_12], ___[NHTSA-2018-0067-11984_Rogers_17]; see also JA___[NHTSA-2018-0067-12636_1441] ("Turbocharged Gasoline Engines" line). Neither NHTSA nor the EPA Administrator responded to comments identifying this unrealistic inflation in compliance costs. *See* 85 Fed. Reg. at 24,405.

- The Volpe Model assumed automakers would always adopt an average of $800 of off-cycle technologies (technologies that reduce fuel consumption and GHG emissions in ways not accounted for in compliance testing) per vehicle, even though these technologies are three times more expensive[32] than other available technologies. *Id.* at 24,579, 24,584 (10 g/mi

[32] For example, in Model Year 2026, off-cycle technologies are projected to cost $76 per g/mi, compared to approximately $24 per g/mi for test-cycle technologies. JA___[Model_Files] (compare Central Analysis/output/CO2_ref/reports-csv/compliance_report.csv, Cells AI812:896/P812:896 (off-cycle technologies cost), with Cell AJ901/(2017 tailpipe emissions – 2026 tailpipe emissions), where tailpipe emissions for each model year are derived by adding average air conditioning and off-cycle credits (derived from Columns N, O, and P) to the emissions rating (Column M) (approximate test-cycle technologies cost)).

of off-cycle credits multiplied by approximately $80 per g/mi equals approximately $800). Exacerbating the problem, the GHG or fuel savings benefits of these off-cycle technologies were then omitted from the cost-benefit analysis. JA___[Model_Files] (Model Documentation at 194).

- Between the Proposal and Final Rollbacks, NHTSA and the EPA Administrator inexplicably reduced their production volume assumption for electric-vehicle batteries from 100,000 to 25,000 per manufacturing plant—arbitrarily excluding Tesla data entirely and ignoring other real-world production data showing that six battery manufacturing companies already had annual production capacities over 100,000 in 2017. 85 Fed. Reg. at 24,500; JA___-___[EPA-HQ-OAR-2018-0283-5456_Attachment_11_5-6]; *see also* Adv. Energy & Transp. Petitioners Br. at 6-8. This inflated battery costs by 15%. 85 Fed. Reg. at 24,502.

- The analysis marked up battery costs twice—once in the battery costs model and a second time as part of the standard retail price markup applied to all technologies—even though those markups capture many of the same costs. JA__[BatPac_Model_Documentation_ANL/CSE-19/2_82]; 85 Fed. Reg. at 24,350. The Agencies do not acknowledge or explain this double-counting.

(3) The Analysis Erroneously Modeled the Use of EPA Over-Compliance Credits

The Administrator further overestimated the cost of complying with EPA's pre-existing standards because he relied on NHTSA's erroneous modeling of the use of over-compliance credits. As discussed above (*see supra* at 10), if an automaker's fleet exceeds a given year's standards, the automaker earns credits that can be applied to offset any past debits (from under-compliance) accrued within the prior three model years or any future debits in the subsequent five model years. 40 C.F.R. §§ 86.1865-12(k)(6), 86.1865-12(k)(7)(i). Automakers can also buy or sell credits. 40 C.F.R. § 86.1865-12(k)(7). NHTSA made seven errors when modeling the use of these credits—all of which the EPA Administrator adopted when he adopted this modeling as EPA's. All of these errors artificially drove up the compliance costs of more stringent standards by forcing the Volpe Model to apply more technologies than necessary.

- First, an apparent coding mistake caused the Volpe Model to omit 27% of automakers' existing credit banks. The compliance simulation begins with the 2017 model year, *see* 85 Fed. Reg. at 24,176, 24,308, but the Volpe Model did not permit the use of any credits earned in model year

2016.[33] Correcting this error dramatically expands compliance options for manufacturers, reducing compliance costs and the net benefits of EPA's Rollback by $7 billion.[34]

- Second, contrary to EPA's regulations and the Administrator's claims about the model, 85 Fed. Reg. at 24,305, the Volpe Model allowed automakers to use credits only in the year they expire.[35]

- Third, the Volpe Model pretended credit trading between automakers cannot or would not occur, even though EPA regulations allow it. JA___[EPA-HQ-OAR-2018-0283-5840_Technical_Appendix_41]. This unfounded assumption is especially egregious as applied to Tesla, which

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[33] JA___[Model_Files] (Model Source Code/Volpe.Cafe/IO/InputParsers/XIMarketDataParser.cs, lines 157-166, 288, and 302; *see also* JA___[Model_Files] (Central Analysis/output/CO2_ref/debug-logs/credit_trades_sn0.csv through /credit_trades_sn8.csv, showing modeled automakers utilizing over-compliance credits earned in model years 2011-2015 (in the "eYear" column) and earned in future modeled years (model years 2017 and beyond), but not credits earned in model year 2016).

[34] JA___[Model_Files] (Model Source Code/Volpe.Cafe/IO/InputParsers/XIMarketDataParser.cs lines 157-166, 288, and 302 were corrected to reflect a credit bank final year of 2016, rather than 2015 (e.g., md.BankedCO2CreditsMaxYear = 2016).

[35] JA___[Model_Files] (Central Analysis/output/CO2_ref/debug-logs/credit_trades_sn0.csv through /credit_trades_sn8.csv, showing modeled automakers utilizing credits either in the year generated [eYear = uYear] or in the year of expiration [eYear + 5 = uYear]).

generates and sells enormous quantities of credits that allow other manufacturers to reduce compliance costs. JA___[EPA-HQ-OAR-2018-0283-7670_114] (Table 5.11). The Administrator acknowledged that credit trading is an important component of automaker compliance strategies, yet adopted modeling reflecting a fictional universe where no trading exists. *See, e.g.*, 85 Fed. Reg. at 24,220 n.98, 24,307, 24,318, 25,116.

- Fourth, the analysis ignored the technical amendments EPA issued simultaneously with the Rollback that "correct[ed] an error to ensure that automakers receive the appropriate amount of credits for electric vehicles," thus "allow[ing] the program to be implemented as originally intended." 85 Fed. Reg. 22,609, 22609 (April 23, 2020). This oversight cut Tesla's estimated credits by half.

- Fifth, compounding the prior error, the Administrator inexplicably estimated that Tesla will sell only about 48,000 vehicles per year through 2029,[36] even though he elsewhere conceded that Tesla sold about four times that many vehicles in model years 2018 and 2019. 85 Fed. Reg. at

[36] JA___[Model_Files] (Central Analysis/output/CO2_ref/reports-csv/vehicles_report.csv, Column BO).

24,502. This error, together with the prior error, underestimated Tesla's available credit bank by a factor of seven.

- Sixth, the Volpe Model's algorithm did not efficiently use even the arbitrarily small bank of credits it made available to automakers. Rather, the Model projected that automakers would allow 43% of their credits, worth about $4-7 billion, to expire unused.[37] Assuming that automakers would behave so irrationally defies basic economic logic.

- Seventh, the Volpe Model's credit algorithm suffered from further flaws, as revealed by a modeling scenario that assumed automakers buy and sell credits with perfect efficiency. Perfect credit trading will necessarily decrease compliance costs because it optimizes credit usage where technological improvements would be more costly. However, perfect credit trading in the Volpe Model *increases* compliance costs. This result, which the preamble itself characterizes as "counterintuitive," shows that the Model itself is fundamentally flawed. JA___[NHTSA-2018-0067-12636_1855].

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[37] JA__[Model_Files](compare Central Analysis/input/market_ref.xlsx, showing 169,619,643 Mg of credits in bank (Cells BC3:BF19 + BJ3:BM19), and Central Analysis/output/CO2_ref/debug-logs/credit_trades_sn0.csv,showing 97,508,181 Mg of credits used (Rows > 2664, eYear = 2012-2015, uYear = 2017-2020, sum of OutRCredits) and 72,111,462 Mg unused); pricing from JA___[EPA-HQ-OAR-2015-0827-6209_Attachment_2_7], adjusted to 2018 dollars.

The Administrator neither fixed nor explained the modeling problems that led to this backwards result.

EPA acknowledges the centrality of credits to automakers' compliance strategies. 85 Fed. Reg. at 25,116. It is arbitrary for such important modeling to contain such blatant errors, including contradictions with EPA's regulations, real-world data, and simple economic logic. *See Owner-Operator Indep. Drivers Ass'n, Inc. v. Fed. Motor Carrier Safety Admin.*, 494 F.3d 188, 204 (D.C. Cir. 2007) ("[W]hen a model's methodology is challenged, the agency must provide a complete analytic defense[.]") (cleaned up).

b. The Remaining Claims of Feasibility Concerns Are Likewise Unsupported

Beyond the unfounded and inflated concerns about compliance costs, the Administrator also claimed that the pre-existing standards have become "infeasible" because manufacturers have used credits to comply with the standards in recent years, because consumer preferences for sport-utility and crossover vehicles make compliance with the pre-existing standards too difficult, and because the preexisting standards would require a level of electrification consumers will not accept. None of these three additional arguments is supported by the record, nor do they justify departure from the

feasibility conclusions reached by both Agencies in 2012 and confirmed in 2016 and 2017. 77 Fed. Reg. at 62,777; JA___[EPA_HQ_OAR_2018-0283-7639_1].

1. NHTSA and the EPA Administrator claimed (without support) that the stringency of emission standards was increasing faster than automakers could maintain. But automakers' performance demonstrates the opposite: that the pre-existing standards remain feasible. In the most recent years for which data is in the record, the rate of improvements *outpaced* the rate of standards' stringency increases. JA___[EPA-HQ-OAR-2018-0283-7670_123] (Fig. 5.17) (Model Years 2017 and 2018). And, across the duration of the standards, automakers have accumulated large banks of over-compliance credits. JA___[EPA-HQ-OAR-2018-0283-7670_119] (Table 5.17).

The Agencies cherry-picked outlier data from 2016 and 2017 to argue that credit use signals that the standards are infeasible. 85 Fed. Reg. at 25,184. But the credit provisions were designed specifically to enable automakers to cost-effectively smooth investments over time. That is exactly what automakers have done—overshooting the standards in some years and undershooting in others, using credits to cost-effectively average out the peaks and troughs. And because automakers earned a significant glut of credits that are slated to expire in 2021, JA___[EPA-HQ-OAR-2018-0283-7670_120], it would be irrational

for automakers *not* to use those credits now. 40 C.F.R. § 86.1865–12(k)(6)(ii); 77 Fed. Reg. at 62,788. Automakers' use of credits in particular years demonstrates only that credits supplied the least-costly pathways to achieve compliance at that specific point in time. *See* Adv. Energy & Transp. Petitioners Br. at 14. The claim that more credit usage necessarily means automakers will have difficulty meeting future years' standards contravenes basic "economic theory and logic." *Ameren Servs. Co. v. FERC*, 880 F.3d 571, 578 (D.C. Cir. 2018).

Even without considering their rational use of existing credits, automakers achieved a record fleetwide emission level of 253 grams/mile, which was only 0.3% shy of the standard in model year 2018, the most recent data in the record. JA___[EPA-HQ-OAR-2018-0283-7670_123] (Fig. 5.17). Industrywide, the fleet performance deficit in model year 2018 was equivalent to only 1.8% of banked credits entering model year 2019. JA___[EPA-HQ-OAR-2018-0283-7670_114] (Table 5.11), ___[EPA-HQ-OAR-2018-0283-7670_119] (Table 5.17) (252 teragrams of banked credits versus 4.4-teragram fleet deficit).[38] The

[38] While these figures relate to EPA's GHG program, similar facts—including credit banks that swamp minor levels of "underperformance"—are equally true of NHTSA's fuel-economy program. JA___[https://one.nhtsa.gov/cafe_pic/CAFE_PIC_home.htm[cited_at_24,615_n1638]] (credit status tab).

large credit banks demonstrate that automaker performance has *significantly exceeded* the standards established in 2012, and the Agencies have no credible argument for assuming those standards will suddenly become infeasible. JA___[EPA-HQ-OAR-2018-0283-7670_123] (Fig. 5.17) (showing substantial fleetwide emissions over-performance over the total length of the preexisting standards);

JA___[https://one.nhtsa.gov/cafe_pic/CAFE_PIC_home.htm[cited_at_24,615_n1638]] (showing fuel economy over-performance at fleet performance tab; select data for all model years, total fleet, performance and standards).

2. The Administrator also adopted NHTSA's contention that consumer preferences for sport-utility and crossover vehicles make the pre-existing standards too difficult and perhaps even infeasible. 85 Fed. Reg. at 25,120, 25,184. This is similarly specious. Although the Agencies asserted that the pre-existing standards do not account "for mass-intensive increases in vehicle ride height that crossover purchasers value, the additional frontal area and higher drag at highway speeds," *id.* at 25,184, they offered no evidence supporting this departure from their prior determinations that these footprint-based standards do not "affect consumers' opportunity to purchase the size of vehicle with the

performance, utility and safety features that meets their needs," 77 Fed. Reg. at 62,631; *see also supra* at 10, 12. In fact, the evidence showed the opposite.

First, the market shares of sport-utility and crossover vehicles subject to the car fleet standards ("car SUVs") have increased little since 2012. JA___ [EPA-HQ-OAR-2018-0283-7670_33] (from 9.4% to 11.3% in 2019).

Second, the increased sales of sport-utility and crossover vehicles subject to the less stringent light-truck fleet standards ("truck SUVs") have not hindered compliance with the pre-existing standards. Since 2012, automakers improved the fuel efficiency and emissions performance of car and truck SUVs at similar (or better) rates as other categories. JA__[EPA-HQ-OAR-2018-0282-7670_33] (Table 3.2). Indeed, in 2018 these categories saw the largest improvements of any category. JA___[EPA-HQ-OAR-2018-0282-7670_16]. The Agencies offer no reason why such improvements cannot continue.

Third, the cost-benefit analysis prepared by NHTSA and adopted by the EPA Administrator demonstrates that consumers would purchase *more* sport-utility and crossover vehicles under the pre-existing standards than under the Rollbacks.[39] This is because, according to the Agencies, "as fuel economy

[39] *See* JA__[Model_Files] (Central Analysis/output/CO2_ref/reports-csv/vehicles_report.csv (showing, when aggregated and sorted by vehicle class

increases in light truck models, which offer consumers other desirable attributes beyond fuel economy (ride height or interior volume, for example) their relative share increases." 85 Fed. Reg. at 24,622. Any claim that stricter standards impede demand for these vehicles therefore "runs counter to the evidence before the agency." *Genuine Parts*, 890 F.3d at 346 (cleaned up).

Finally, although the Agencies claim that automakers use of over-compliance credits indicates infeasibility, 85 Fed. Reg. at 25,116-17, no evidence supports either that proposition, *see supra* at 80, or the contention that credit use results from increased sales of sport-utility and crossover vehicles. Indeed, in 2017 and 2018, automakers substantially reduced their use of credits, even though the standards grew more stringent and the market share of these categories remained historically high. JA___[EPA_ HQ-OAR-2018-0282-7670_123].

3. Finally, NHTSA and the EPA Administrator claimed that the pre-existing standards will require greater levels of electrification than future consumer demand will accommodate. Specifically, the Administrator projected

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class (Columns AR and AS), sport-utility vehicles' market shares in 2029 of 34.8% (pre-existing standards) and 33.0% (Rollbacks), and crossovers with 14.4% and 13.8%, respectively).

that the pre-existing standards would require model year 2030 vehicles to include 7.1% mild hybrids, 9.0% strong hybrids, 0.4% plug-in hybrids, and 5.7% battery electric vehicles.[40] 85 Fed. Reg. at 24,976 (Table VII-69). These projections are unreliable because, as explained above, they are driven by modeling that arbitrarily inflated compliance costs for conventional vehicles. *See supra* at 62.

In any event, the Administrator described the new projections for model year 2030 as differing only "slightly" from EPA's 2017 figures, 85 Fed. Reg. at 25,107, which the agency characterized as "low levels" of electrification readily achievable by model year 2025, JA___, ___[EPA-HQ-OAR-2015-0827-6270_4,18]. Yet again, the Administrator failed to explain his new position—that roughly similar electrification levels are somehow infeasible—and identified no evidence supporting it.

Indeed, the Administrator did not explain why sales of plug-in hybrids and battery electric vehicles—which EPA projected would reach a combined market share of 3.3% in model year 2019, JA___[EPA_ HQ-OAR-2018-0282-

[40] Mild and strong (or full) hybrids have gasoline engines that are assisted by various electric technologies but do not recharge from external power sources. Plug-in hybrids can operate solely on their electric motors for limited ranges and can be recharged from external sources. Battery electric vehicles operate solely on electricity. *See* 85 Fed. Reg. at 24,469-24,472.

7670_54], and reach a "low," achievable level of 5% in model year 2025, JA___-___[EPA-HQ-OAR-2015-0827-6270_4-5]—will be unable to reach a combined share of 6.1% in model year 2030. Nor could the Administrator explain his position, particularly given that consumer demand for electric vehicles is expected to grow substantially. *See* Adv. Energy & Transp. Petitioners Br. at 8-13.

3. The Rollback *Increases* Consumer Costs

The Administrator also claimed that "[t]he costs to … automotive consumers would have been too high under the standards set forth in 2012." 85 Fed. Reg. at 24,176. But NHTSA's analysis (on which the Administrator relied) showed that EPA's Rollback will *increase* total costs to consumers by an average of $678 per vehicle. 85 Fed. Reg. at 24,181. And the real increase is certainly even greater because the analysis dramatically underestimated how much consumers will pay for fuel under the Rollbacks. Specifically, it erroneously ignored that increased fuel demand under relaxed standards (with less fuel-efficient vehicles) would drive up fuel prices. The magnitude of this error is enormous—approximately $50 billion in additional consumer fuel costs omitted. Public Interest Petitioners Br. 23.

Although the Administrator conceded that the Rollback will cost consumers money, he nonetheless tried to justify the Rollback as beneficial to consumers by claiming that consumers value "upfront" reductions in new vehicle costs more than long term fuel cost savings. *See, e.g.*, 85 Fed. Reg. at 25,111, 25,120, 25,171. But, as detailed in the Public Interest Petitioners' Brief at 20-22, this rationalization is arbitrary because the Administrator contradicts it elsewhere in the preamble, the analysis already applied a discount rate to future costs and benefits, and the 85% of consumers who finance their vehicles experience negligible upfront savings. The Rollback cannot be justified as a way to save consumers money because it would substantially increase consumers' net costs.

4. The Rollback's Costs Outweigh Its Benefits

As noted above, the Agencies originally claimed their proposed Rollbacks would have net benefits of over $200 billion and, in fact, offered this as one of two primary justifications for the Proposal. 83 Fed. Reg. at 42,998. By the Final Rollbacks, however, the Agencies had determined that the net societal benefits were "very small" and, indeed, *negative* under a 3% discount rate for future costs and benefits. 85 Fed. Reg. at 24,176-77. Remarkably, the Administrator proceeded anyway, finalizing a rule that increases air pollution while providing

no net benefits to society. In reality, even the "very small" net benefits claimed under a 7% discount rate simply do not exist because of inflated compliance costs, *see supra* at 62, and massive errors in the cost-benefit analysis. This is yet another reason for vacatur: the EPA Administrator did not apparently understand that the emissions-increasing Rollback he approved would impose substantial net costs on society.

a. The Rollback Will Harm the Environment and Public Health Far More than the Administrator Acknowledged

The Administrator acknowledged that weakening these emission standards will damage the environment and cause premature deaths. The analysis he adopted estimates EPA's Rollback will cause the release of 867 million metric tons of additional carbon dioxide, as well as additional emissions of other harmful pollutants, such as nitrogen oxides and particulate matter that will cause as many as 1,000 premature deaths. 85 Fed. Reg. at 25,055 (Table VII-118); 25,083 (Table VII-142). The Administrator's willing acceptance of these impacts is confounding enough. But these impacts are understated, and the errors in this part of the analysis—both intentional and careless—further demonstrate the unlawfulness of the Administrator's decision to weaken

entirely feasible and economically efficient standards that protect public health and welfare.

1. The analysis undervalued the economic impacts of increased GHG emissions by tens of billions of dollars by using an "interim" domestic, rather than the global, social cost of carbon. JA___[NHTSA-2018-0067-12636_at_1807]. This choice departed from prior agency practice without adequate justification. *See* 85 Fed. Reg. at 24,734; *see also* JA___-___[EPA-HQ-OAR-2018-0283-5481_104-105]. The Administrator failed to consider that climate impacts in other countries will cause damage to U.S. companies and citizens, given interrelated global economies, assets, and U.S. citizens and national security interests abroad. *See* JA___[EPA-HQ-OAR-2018-0283-5481_105]; *see also California v. Bernhardt*, 472 F. Supp. 3d 573, 613 (N.D. Cal. 2020) (holding agency reliance on interim domestic social cost of methane to be arbitrary and capricious, because the agencies ignored impacts on U.S. citizens living abroad, billions of dollars of physical assets located abroad, foreign trading partnerships and supply chains, and global migration and geopolitical security). Moreover, this "interim" estimate ignores the best available science by using a 3% discount rate, instead of a lower rate on which there is expert consensus, and omits important updates to the calculation, one

of which by itself doubles the social cost. *See* JA___[EPA-HQ-OAR-2018-0283-5481_106].

2. The Administrator also overestimated certain emissions benefits he claimed the Rollbacks will produce. As shown above, the underlying analysis overestimated both the decrease in vehicle prices, *supra* at 62, and the impact any such decrease would have on new vehicle sales, *supra* at 55. These exaggerated fleet turnover projections led to inflated claims of vehicular emission reductions from retiring older, less-efficient vehicles.[41]

3. The Administrator excluded significant amounts of upstream criteria pollution—equating to over a thousand more premature pollution-related fatalities and billions of dollars in health harms—by assuming, without record support, that half of the increased gasoline demand caused by the Rollback will not result in additional domestic refining. *See* Public Interest Petitioners' Br. at 13-15.

4. The Administrator undervalued the Rollback's pollution harms by billions of dollars and hundreds of premature deaths by conflating the harms of

[41] These vehicular emission reductions are more than offset by emissions increases from other sources, such as refineries, resulting in projections of adverse public health impacts. 85 Fed. Reg. at 25,055 (Table VII-118) (GHGs), 25,059 (criteria pollutants).

electricity generation with those of petroleum refining. *See* Public Interest Petitioners' Br. at 17.

5. The Administrator committed a multibillion-dollar error by calculating the Rollback's effect on electricity emissions based on average, rather than incremental, electricity generation. *See* Public Interest Petitioners' Br. at 16.

b. An Unjustified Assumption about Additional Driving Substantially Exaggerated the Costs of Stricter Standards and the Alleged Benefits of the Rollback

NHTSA and the EPA Administrator arbitrarily doubled their estimate of the "rebound effect," reversing prior findings without adequate justification and drastically inflating the Rollback's purported benefits by $25 billion. As discussed above, the rebound effect is the degree to which consumers drive more in response to the decreased cost of driving more fuel-efficient vehicles. 85 Fed. Reg. at 24,671. The size of this effect significantly affects multiple aspects of the Rollback analysis, including purported safety benefits (*see supra* at 58), emissions, road congestion, and noise. 85 Fed. Reg. at 24,671.

These two Agencies have previously estimated the rebound effect to be 10%, meaning that for every 1% decrease in the cost of driving, miles driven increase by 10% of that, i.e. by 0.1%. *See* 75 Fed. Reg. at 25,490; 77 Fed. Reg. at 62,716; JA___[EPA_HQ_OAR_2015-0827-0926_10-20]. Those estimates were

based on a robust review of the literature, with emphasis on the most relevant and reliable studies. Here, however, NHTSA and the EPA Administrator asserted a 20% rebound effect.

This new figure is based on a simple average of various studies, without considering those studies' unequal quality and relevance. *See* JA___-___[EPA-HQ_OAR-2018-0283-7659_26-27]. For instance, the Agencies ignored differences between studies of households in the United States and those in Europe, JA___[EPA-HQ-OAR-2018-0283-5842_Gillingham_Rebound_31], and differences between studies using high-quality multiple odometer measurements—widely considered one of the most rigorous types of data—and those relying on error-prone self-reported travel surveys, JA___, ___[EPA-HQ-OAR-2018-0283-5842_ Gillingham_Rebound_22,28]; JA___-___[EPA-HQ-OAR-2018-0283-5054_253-54]; JA___[EPA-HQ-OAR-2018-0283-1642_2]. These irrational choices contradict the Agencies' prior approach, JA___-___[EPA-HQ-OAR-2018-0283-6174_Attachment_7_Comment_12-26], and their approach elsewhere in these Rollbacks, 85 Fed. Reg. at 25,241 (citing "very different vehicle use and driving patterns between Europe and the U.S." to ignore EU credit data), 24,678-79 (distinguishing different types of driving data by quality). The result of this unexplained and inconsistent

decision is to drive the rebound rate up, artificially increasing the pre-existing standards' costs and reducing their benefits. JA___-___[EPA-HQ-OAR-2018-0283-5842_Gillingham_Rebound_33-34].

Four separate authors of studies cited by the Agencies warned that their work was being mischaracterized. JA___-___[EPA-HQ-OAR-2018-0283-2698], ___-___[EPA-HQ-OAR-2018-0283-4024], ___[EPA-HQ-OAR-2018-0283-3321], ___-___[EPA-HQ-OAR-2018-0283-1642]. With one limited exception,[42] neither NHTSA nor the EPA Administrator responded to these comments. Nor did they heed EPA staff's exhortation to "critically evaluate which studies are most likely to be reflective of the rebound effect," JA___, ___[EPA-HQ-OAR-2018-0283-5666_Attachment_12_pdf120,122], or EPA's Science Advisory Board's similar criticism or its finding that the literature "suggest[ed] an effect of less than 10%," JA___-___[EPA-HQ_OAR-2018-0283-7659_26-27]; *see also id.* (urging heavier weight be given to "recent papers using strong methodology and U.S. data").

[42] The Agencies now state the Small paper's finding as a rebound rate of 4-18% instead of 18%, still ignoring Small's comment that 4%, and not 18%, is the correct interpretation of his study. JA___[EPA-HQ-OAR-2018-0283-2698_1].

NHTSA and the EPA Administrator claimed discomfort with "making the requisite assumptions regarding which specific criteria should be used to identify relevant studies[.]" 85 Fed. Reg. at 24,677. Yet they did exactly that when it served their ends. For example, they excluded one of the most relevant rebound studies—the only study based on a policy that induced households to buy more fuel-efficient vehicles—which found no rebound effect at all, relying instead on studies based on changes in gasoline prices. *Id.* at 24,676 n. 1771 (dismissing the West 2017 study); *see also* JA___[EPA-HQ-OAR-2018-0283-5842_Gillingham_Rebound_16-17].

The new and unjustified 20% rebound-effect assumption substantially overstated the Rollbacks' perceived benefits with respect to fuel consumption, emissions, fatalities, congestion, and noise. Overall, the 20% rebound assumption inflated net benefits for EPA's Rollback by approximately $25 billion. JA___[NHTSA-2018-0067-12636_1807]. Applying a justifiable 10% rebound rate instead shows that the Rollback would impose total net costs on society of $47 billion. *Id.*

c. Overall, the Rollback is Net Costly to Society

The Administrator's contention that the Rollback's costs and benefits are "directionally uncertain," 85 Fed. Reg. at 25,099, is unequivocally wrong. The

analysis he adopted showed that a net benefit would occur only under a 7% discount rate for future costs and benefits. 85 Fed. Reg. at 24,201-08 (Tables II-20 to II-23). But that tabulation does not account for the arbitrary errors and unfounded assumptions expounded above or those described by other Petitioners. *See* Public Interest Petitioners Br. at 26-36. When these errors are corrected, the Rules are unambiguously and massively net *costly* to society. *Id.*

* * *

The various rationales offered for EPA's Rollback cannot withstand scrutiny: many are negated by the analysis the Administrator adopted; others are undermined by fundamental errors or contravened by the record; several suffer from all these flaws at once. Each one of these failed justifications warrants vacatur because the Administrator expressly relied on all these rationales, collectively, and there is no record basis to conclude he would have taken the same action "even absent" one of these "flawed rationale[s]." *Nat'l Fuel Gas Supply Corp.*, 468 F.3d at 839. Especially given that EPA's action contravenes the core air pollution objective of Section 202(a), the absence of *any* substantiated reason for the action—and the sheer number and scale of errors in the underlying analysis—only confirm the need for vacatur.

II. NHTSA's Fuel-Economy Standards Are Also Unlawful

NHTSA's Rollback also suffers from multiple flaws requiring vacatur. Disregarding EPCA's energy conservation mandate, NHTSA unlawfully interpreted and applied the statutory factors and improperly balanced those factors, along with non-statutory ones, ultimately failing to set standards at the "maximum feasible" level EPCA requires. In the end, NHTSA, like EPA, failed to identify a reason supported by the statute or the record that would justify its Rollback.

A. NHTSA's Rollback Contravenes EPCA's Central Objective and Relies on Unlawful Statutory Interpretations

Congress established EPCA's fuel-economy program "to provide for improved energy efficiency of motor vehicles," Pub. L. No. 94-163 § 2(5), 89 Stat. 871, 874 (1975), and reaffirmed that objective in the Energy Independence and Security Act, Pub. L. No. 110-140, 121 Stat. 1492 (2007) (stating objectives including "to increase the efficiency of … vehicles"). Because "'market forces . . . may not be strong enough to bring about the necessary fuel conservation which a national energy policy demands,'" *Ctr. for Auto Safety v. NHTSA*, 793 F.2d 1322, 1339 (D.C. Cir. 1986) (quoting S. Rep. No. 179 at 9 (1975)), Congress required NHTSA to set fuel-economy standards at the "maximum

feasible average fuel economy level" that manufacturers can achieve in each model year, 49 USC § 32902(a). In determining that "maximum feasible" level, NHTSA must consider four statutory factors: "technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy." 49 U.S.C. § 32902(f).

In the Rollback, NHTSA unlawfully reinterpreted three of the four statutory factors to permit *increased* energy consumption and then balanced the factors to produce standards that are not "maximum feasible" under any reasonable understanding of that phrase.[43] In so doing, NHTSA unlawfully disregarded—indeed, undermined—EPCA's North Star: improving fuel efficiency to conserve energy.

[43] NHTSA also unlawfully interpreted the fourth factor—"the effect of other motor vehicle standards of the Government on fuel economy"—to exclude state vehicular emission standards. But that interpretation appears to have had little effect here because of earlier (unlawful) agency actions that purported to invalidate certain state standards. 84 Fed. Reg. 51,310 (Sept. 27, 2019). Those actions—and NHTSA's unlawful interpretation—are the subject of separate petitions for review. *See* Case No. 19-1230 (lead case).

1. NHTSA Effectively Read the Need to Conserve Energy Out of the Statute

One of the four factors NHTSA must consider is "the need of the United States to conserve energy." Nothing in the statutory text allows NHTSA to second-guess Congress and decide that there is no longer much, if any, need to reduce energy consumption. Yet, that is precisely what NHTSA did here, reinterpreting "conserve" to encompass standards that *increase* energy consumption and concluding that the Nation's need to save energy is no longer "nearly infinite" as Congress had found. 85 Fed. Reg. at 25,144.

A dictionary contemporaneous with EPCA's enactment shows the word "conserve" meant to "save." *Webster's New World Dictionary* (2d college ed. 1972). That this was Congress's intended meaning is clear from EPCA's direction to set "*maximum* feasible" fuel-economy standards, 49 U.S.C. § 32902(f) (emphasis added), and by its fundamental objective, reflected in the statute's title, of conserving energy. Congress intended to "establish aggressive and effective programs for energy conservation designed to encourage the maximum efficient utilization of domestic energy resources." H.R. Rep. No. 94-700, at 118 (1975). Especially when EPCA is read in light of the energy crisis that drove its passage, there can be no question Congress intended to impose on NHTSA an affirmative duty to *save* energy. The current absence of

an energy crisis does not impact the meaning of the statute or Congressional intent. NHTSA cannot read the need to conserve out of the statute. *See Bostock v. Clayton County*, 140 S.Ct. 1731, 1738 (2020) ("[O]nly the words on the page constitute the law adopted by Congress and approved by the President.").

In response to comments pointing out that NHTSA was second-guessing Congress, NHTSA claimed, in the Final Rollback, that it had not determined there was *no* need to conserve energy. But this claim falls flat, as NHTSA effectively gave no consideration to the Nation's need to conserve. This failure to honor Congress's directive is only underscored by NHTSA's evaluation of the four considerations it has traditionally evaluated under the "need … to conserve energy" factor: "the consumer cost, national balance of payments, environmental, and foreign policy implications of our need for large quantities of petroleum, especially imported petroleum." 85 Fed. Reg. at 24,214.

First, while claiming "consumer fuel costs are an important consideration," NHTSA also suggested these costs are irrelevant to the need to conserve because "American consumers generally understand fuel costs" and tolerate "fluctuations" in those costs. *Id.* at 25,141. NHTSA then reached no conclusion about whether these "important" costs increase or decrease the

need to conserve,[44] stating only that there are "more [unspecified] tradeoffs" now than "in prior rulemakings." *Id.* NHTSA also failed to fully consider the adverse impacts to consumers from increases in fuel prices, including those caused by the Rollback itself,[45] instead noting that any increase in fuel costs to consumers "is an increase in revenue to the U.S. oil industry." *Id.* at 25,170.[46] But *industry* revenues are not equivalent to *consumer* fuel costs. Citing the former does not license NHTSA to ignore the latter. Further, focusing on increased industry revenues ignores the fact that even moderate increases in fuel costs reduce disposable income and negatively impact consumers, especially low-income consumers, who spend a disproportionate amount of their incomes on fuel expenses.

Second, NHTSA erroneously downgraded the national balance of payments consideration. Historically, NHTSA has considered the national balance of payments in evaluating the need to conserve energy because importing large amounts of oil can create a significant wealth transfer to oil-

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[44] In fact, the Rollback will *increase* costs to consumers. *See supra* Section I.D.3.

[45] *See* Public Interest Petitioners' Br. at 22-26 (establishing that NHTSA failed to account for billions in dollars of increased fuel prices caused by the additional consumption NHTSA admits will occur under its Rollback).

[46] Elsewhere, NHTSA admits that automobile ownership will be net costly under the Rollback. *See supra* at 62.

exporting countries and leave the United States economically and politically vulnerable. *Id.* at 24,214-15 & n.68. Now, NHTSA claims this factor is "fallow," i.e., does not support the need to conserve, "for the foreseeable future," due to recent decreases in oil imports. *Id.* at 24,215.

To reach this conclusion, NHTSA assumed that exports currently equal or slightly exceed imports. *Id.* NHTSA acknowledged that demand will increase under the Rollback, but assumed, without any evidence, that the increased demand will be fulfilled by domestic production, rather than imports. *Id.* Notably, elsewhere in its analysis, NHTSA made a very different assumption—that half of the additional oil would be imported—to minimize domestic emission impacts of its Rollback. *See* Public Interest Petitioners' Br. at 13-15. Further, even if exports will exceed imports as assumed, the Rollback will narrow the difference and erode the national balance of payments. NHTSA's inconsistent assumptions and flawed reasoning provide no support for reading the "need to conserve" out of the statute.

Third, NHTSA failed to properly consider the need to conserve in light of the environmental impacts from the increase in fuel consumption under the Rollback. NHTSA admits that, compared to the pre-existing standards, the Rollback will substantially increase emissions of multiple pollutants that cause

adverse public health consequences. 85 Fed. Reg. at 25,049 (Table VII-9), 25,054 (Table VII-116), 25,057-58 (Tables VII-120, VII-121). And NHTSA anticipates the Rollback could cause hundreds of premature deaths from these emissions. 85 Fed. Reg. at 25,081 (Table VII-140). Nonetheless, NHTSA failed to mention those environmental impacts when it considered the need to conserve. NHTSA also admitted the Rollback will result in the emission of an additional 923 million metric tons of GHGs, 85 Fed. Reg. at 24,176, but brushed that enormous increase in pollution aside, *id.* at 25,144. In doing so, NHTSA unlawfully second-guessed Congress's conservation mandate by limiting its consideration of environmental impacts. NHTSA acknowledged its approach here is inconsistent with prior rulemakings, but failed to provide a reasoned justification for the change. *Id.*; *see Encino Motorcars*, 136 S. Ct. at 2126.

Finally, NHTSA claimed that there is less need to conserve because of decreased foreign policy concerns with respect to disruptions in international oil markets. 85 Fed. Reg. at 25,169. That claim is unfounded. Weaker fuel-economy standards increase the Nation's dependence on oil, including imported oil. That, in turn, impairs energy and national security. *Id.* at 24,215; *see also* JA___-___[NHTSA-2018-0067-10718_10-11]. NHTSA has admitted that expenses related to maintaining military presence to secure imported oil

are linked to increases in oil consumption. 85 Fed. Reg. at 24,215, 25,149. However, NHTSA failed to account for monopsony or military security costs,[47] *id.* at 25,150, in its energy security valuation, again erroneously downplaying the need to conserve.

2. NHTSA Unlawfully Construed Technological Feasibility

When deciding what fuel-economy standards are "maximum feasible," NHTSA must also consider what is technologically feasible. 49 U.S.C. § 32902(f). Historically, NHTSA has correctly understood this to mean the standards must be *achievable*. 77 Fed. Reg. at 63,015 (""Technological feasibility' refers to whether a particular technology . . . is available or can become available . . . ."). Now, however, NHTSA has implicitly reinterpreted "technological feasibility" to mean the standards should be *easy and cheap for manufacturers* to achieve. *See* 85 Fed. Reg. at 25,130-25,131.

NHTSA's prior interpretation was consistent with the statute's text and history. Feasible means "capable of being carried out." H.R. Rep. No. 94-700 at 172 (1975); *see also Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1194

[47] NHTSA has previously stated that energy security costs include "higher prices for petroleum products resulting from the effect of increased U.S. demand for imported oil on the world oil price ('monopsony effect')." 77 Fed. Reg. 62,624, 62,939 (2012).

(D.C. Cir. 2008). Thus, NHTSA must consider whether a particular technology exists or can become available for commercial application in the model year for which a standard is being established. *Ctr. for Auto Safety*, 793 F.2d at 1325 n.12. Fuel-economy standards 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.'" *Id.* at 1339.

The fuel-economy standards adopted here are less than what is "technologically feasible" under any reasonable interpretation of the term. NHTSA agrees that automakers can meet the *pre-existing* standards using existing technologies. 85 Fed. Reg. at 25,131 ("[T]he crucial question is not whether technologies exist to meet the standards—they do."). NHTSA's *weaker* standards do not even track the current course of technology, let alone force development of new technology. In fact, NHTSA's own projections show that automakers would exceed the Rollback's standards every year, *even if standards were held at model-year 2020 levels*. JA___[NHTSA-2018-0067-12636_1370] (Tables VII-52, VII-53). There is, thus, no question that this factor, if properly interpreted and applied, compels more stringent standards.

NHTSA claimed otherwise, observing that some automakers used credits to satisfy the standards in 2016 and 2017. *See* 85 Fed. Reg. at 25,117, 25,183-84. Although NHTSA refused to consider credits for future model years, it justified weakening standards based on automakers' use of compliance credits in "model years that are already final." *Id.* at 24,276 n.317. But EPCA bars NHTSA from "consider[ing], when prescribing a fuel economy standard, the trading, transferring, or availability of credits" automakers may use to comply. 49 U.S.C. § 32902(h)(3). EPCA's plain text does not qualify its prohibition by model year. *See id.* NHTSA's narrowing interpretation is impermissible because Congress spoke to this precise question. NHTSA's construction is also unreasonable, and, notably, the agency presented no textual, structural, purposive, or other defense of that construction.

3. NHTSA Failed to Properly Assess Economic Practicability

NHTSA must also consider "economic practicability." 49 U.S.C. § 32902(f). NHTSA has long interpreted this factor to mean that the standard should fall within the financial capability of the industry, but not be so stringent as to lead to significant loss of jobs or unreasonable elimination of consumer choice. *See* 83 Fed. Reg. at 43,208. In other words, in assessing what is

economically practicable, NHTSA has considered substantial impacts of the standards on both the automotive industry and the national economy.

Here, although NHTSA inflated the compliance costs of more stringent standards, *see supra* at 62, it nonetheless concluded those costs were modest—an average of $977 per vehicle. 85 Fed. Reg. at 24,181 (Table I-6). NHTSA made no finding that those costs were beyond the capability of the industry; indeed, it assumed automakers could, and would, pass those costs on to consumers (who would still save money due to fuel savings). *See supra* at 62. NHTSA also ignored other substantial economic consequences of its Rollback, including its own conclusion that the Rollback would cause thousands of job losses within the automotive industry. *See* 85 Fed. Reg. at 25,178 (Table VIII-10) (projecting 13,474 fewer jobs in 2029 than under the pre-existing standards).

Once again, NHTSA seeks to excuse its analytical failures and avoid inconvenient facts by redefining the relevant statutory term—"economic practicability." NHTSA placed great weight on consumer preference as a constraint on stricter standards. *See, e.g.*, 85 Fed. Reg. at 25,131-25,133, 25,174-25,175. This constraint is imaginary. The regulatory program is expressly designed to accommodate consumer preference, and NHTSA's contrary

concerns are unsupported by any evidence. *See supra* at 82. Moreover, Congress intended NHTSA's standards to drive the market, not bend to the agency's perception of current consumer preferences. *See Ctr. for Auto Safety*, 793 F.2d at 1340 ("[I]t would clearly be impermissible for NHTSA to rely on consumer demand to such an extent that it ignored the overarching goal of fuel conservation.").

NHTSA's attempt to import newly manufactured safety concerns into consideration of economic practicability was also flawed. 85 Fed. Reg. at 25,132. EPCA does not discuss safety concerns, and NHTSA's analysis strayed far afield from the definitions of "motor vehicle safety" in other statutes which implicate protection against design-, construction-, or performance-related risks. 49 U.S.C. § 30102(a)(9). Here, NHTSA considered not the safety implications of fuel-efficiency technologies or vehicle design, *see CEI v. NHTSA*, 956 F.2d 321, 326-27 (D.C. Cir. 1992), but rather consumer behavioral responses to the standards—specifically, the possibility of additional driving or greater utilization of older vehicles and, thus, additional fatal crashes.[48] *See supra* Section I.D.1. NHTSA has no credible argument that

[48] The Agencies rely in small part on a prediction that manufacturers would meet the pre-existing standards by reducing vehicle mass. But, the

Congress intended it to consider consumers' independent choices as part of "economic practicability," let alone that such considerations should outweigh factors within the ordinary meaning of the phrase, such as job losses in the auto industry.

4. NHTSA's Balancing Failed to Establish Maximum Feasible Standards, Contravening EPCA's Mandate

As shown above, with every interpretation and application of the statutory factors, NHTSA put its thumb on the scale—sometimes heavily—in favor of weaker standards. Not surprisingly, when NHTSA purported to balance these factors (and non-statutory ones), the resulting fuel-economy standards were not "maximum feasible" under any reasonable understanding of that phrase. In setting far weaker standards than the statute requires, NHTSA contravened EPCA's overriding mandate: to conserve energy through technology-forcing standards. 85 Fed. Reg. at 24,213, n. 51; *see also Ctr. for Biological Diversity*, 538 F.3d at 1195; *Ctr for Auto Safety*, 793 F.2d at 1339. Indeed, NHTSA admits that more stringent standards—including the standards approved in 2012—are feasible, in that the technology already exists to meet them. 85 Fed. Reg. at 25,131. And, as shown above, consumers would *save* money under those

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Agencies do not assert that this would have a statistically significant effect on fatalities. *See supra* Section I.D.1.

standards, which also have far greater environmental and public health benefits. *See supra* Sections. I.D.3., I.D.4.a. Most revealingly, NHTSA projects that automakers would outperform the Rollback even if the standards were held at model-year 2020 levels. JA___-___[NHTSA-2018-0067-12636_17-18]. The Rollback standards are transparently not "maximum feasible."

NHTSA's adoption of standards that require nothing of automakers cannot be justified by NHTSA's unreasonable emphasis on purported consumer preference and safety factors not mentioned in the statute, NHTSA's unlawful attempt to read these into "economic practicability" notwithstanding. Congress did not intend to subjugate energy conservation to consumer preferences and consumers' independent decisions. NHTSA may not replace Congress's judgment with its own. But that is precisely what NHTSA did. After manipulating and downplaying *all* of the considerations that traditionally go into an analysis of the need to conserve, *see supra* at 98, NHTSA went even further. It declined to give this factor—the reason Congress adopted EPCA—the "paramount" treatment given to it in the past. 85 Fed. Reg. at 25,145 n.2733. Instead, NHTSA asserted that this need has changed "a great deal" and "may no longer disproportionately outweigh other" considerations. *Id.* "NHTSA cannot set fuel economy standards that are contrary to Congress's

purpose in enacting the EPCA—energy conservation." *Ctr. for Biological Diversity*, 538 F.3d at 1197. These standards are plainly not "maximum feasible" and should be vacated.

B. NHTSA's Fuel-Economy Standards Are Also Arbitrary and Capricious

NHTSA's Rollback is also unlawful because the analysis NHTSA produced—upon which both NHTSA and EPA's Administrator relied—is riddled with errors and fails to support the rationales asserted. The record does not support the claims of safety benefits (on any of the shifting theories NHTSA advanced), the gestures at feasibility concerns about the pre-existing standards, the assertions of consumer benefits, or, even, the claims that the Rollback will produce little to no net costs to society. *See supra* Section I.D. NHTSA adopted standards that, by its own admission, will increase fuel consumption and associated harmful emissions, while reducing automotive industry jobs, saving automakers nothing in per-vehicle costs (because they are presumed to pass those costs on to consumers), and costing consumers money (due to reduced fuel savings). Moreover, when some of the massive errors in NHTSA's analysis of compliance costs and societal costs are corrected, the Rollback is demonstrably costly to society. *See supra* at 62; Public Interest

Petitioners' Br. at 26-36. Far from representing reasoned decision-making, NHTSA's Rollback, like EPA's, lacks any justification at all.

C. NHTSA Also Violated Other Statutes

In addition to contravening EPCA, NHTSA's Rollback flouted several other environmental protection statutes. NHTSA, like EPA, failed to conduct the conformity analysis required by the Clean Air Act. *See supra* Section I.B.2. In other words, NHTSA failed to assess the impacts of increased criteria-pollutant emissions on State Implementation Plans to meet or maintain federal air quality standards. NHTSA claimed such an analysis was not required because the emissions would be caused by decisions of automakers and consumers beyond its control. 85 Fed. Reg. at 25,250. But EPCA requires NHTSA to consider the environmental consequences of its fuel-economy standards and to adopt standards that force automakers to install technologies they otherwise would not. *See supra* 99, 104.

Additionally, NHTSA violated the National Environmental Policy Act by considering only action alternatives that would weaken fuel-economy standards—rather than the requisite reasonable range of alternatives—and inadequately considering the cumulative effects of its rulemaking and other recent agency action. *See* Public Interest Petitioners Br. 45-48.

Finally, NHTSA (and EPA) failed to comply with the Endangered Species Act's consultation requirement despite the likelihood that the Agencies' regulations would jeopardize endangered or threatened species or adversely affect critical habitat. *See id.* at 39-44. Each of these violations alone warrants vacatur. Combined, they highlight NHTSA's determination to push forward a rule void of legal justification without regard for its real-world impacts.

CONCLUSION

EPA's Revised Determination and both Agencies' Rollbacks should be vacated.

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Respectfully submitted,

XAVIER BECERRA
Attorney General of California
ROBERT W. BYRNE
EDWARD H. OCHOA
Senior Assistant Attorneys General
GARY E. TAVETIAN
DAVID A. ZONANA
Supervising Deputy Attorneys General

/s/ M. Elaine Meckenstock
M. ELAINE MECKENSTOCK
Deputy Attorney General
Attorneys for Petitioner State of California, by and through its Governor Gavin Newsom, Attorney General Xavier Becerra, and California Air Resources Board

FOR THE STATE OF COLORADO

PHIL WEISER
Colorado Attorney General

/s/ Eric R. Olson
ERIC R. OLSON
Solicitor General
Office of the Attorney General
1300 Broadway, 10th Floor
Denver, CO 80203
Telephone: (720) 508-6548
eric.olson@coag.gov

Attorneys for Petitioner State of Colorado

FOR THE STATE OF CONNECTICUT

WILLIAM TONG
Attorney General of Connecticut
MATTHEW I. LEVINE
Assistant Attorney General

/s/ Scott N. Koschwitz
SCOTT N. KOSCHWITZ
Assistant Attorney General
165 Capitol Avenue
Hartford, CT 06106
Telephone: (860) 808-5250
Fax: (860) 808-5386
Scott.Koschwitz@ct.gov

Attorneys for Petitioner State of Connecticut

FOR THE STATE OF DELAWARE

KATHLEEN JENNINGS
Attorney General of the State of Delaware

/s/ Kayli H. Spialter
KAYLI H. SPIALTER
CHRISTIAN WRIGHT
Deputy Attorneys General
Delaware Department of Justice
820 N. French Street, 6th Floor
Wilmington, DE 19801
Telephone: (302) 395-2604
Kayli.Spialter@delaware.gov

Attorneys for Petitioner State of Delaware

FOR THE DISTRICT OF COLUMBIA

KARL A. RACINE
Attorney General for the District of Columbia

/s/ Loren L. AliKhan
LOREN L. ALIKHAN
Solicitor General
Office of the Attorney General for the District of Columbia
400 6th Street, NW, Suite 8100
Washington, D.C. 20001
Telephone: (202) 727-6287
Fax: (202) 730-1864
Loren.AliKhan@dc.gov

Attorneys for Petitioner District of Columbia

FOR THE STATE OF HAWAII

CLARE E. CONNORS
Attorney General

*/s/ Diane K. Taira**
DIANE K. TAIRA
KIMBERLY T. GUIDRY
Deputy Attorneys General
State of Hawaii Office of the Attorney General
425 Queen Street
Honolulu, HI 96813
Telephone: (808) 587-3050
Diane.K.Taira@Hawaii.gov

**Application for admission pending*

Attorneys for Petitioner State of Hawaii

FOR THE STATE OF ILLINOIS

KWAME RAOUL
Attorney General of Illinois
MATTHEW J. DUNN
Chief, Environmental Enforcement/
Asbestos Litigation Division
JASON E. JAMES
Assistant Attorney General

/s/ Daniel I. Rottenberg
DANIEL I. ROTTENBERG
Assistant Attorney General
69 W. Washington St., 18th Floor
Chicago, IL 60602
Telephone: (312) 814-3816
DRottenberg@atg.state.il.us

Attorneys for Petitioner State of Illinois

FOR THE STATE OF MAINE

AARON M. FREY
Attorney General of Maine

/s/ Laura E. Jensen
LAURA E. JENSEN
Assistant Attorney General
6 State House Station
Augusta, ME 04333
Telephone: (207) 626-8868
Fax: (207) 626-8812
Laura.Jensen@maine.gov

Attorneys for Petitioner State of Maine

FOR THE STATE OF MARYLAND

BRIAN E. FROSH
Attorney General of Maryland

/s/ Cynthia M. Weisz
CYNTHIA M. WEISZ
Assistant Attorney General
Office of the Attorney General
Maryland Department of the Environment
1800 Washington Blvd.
Baltimore, MD 21230
Telephone: (410) 537-3014
cynthia.weisz2@maryland.gov

JOHN B. HOWARD, JR.
JOSHUA M. SEGAL
STEVEN J. GOLDSTEIN
Special Assistant Attorneys General
Office of the Attorney General
200 St. Paul Place
Baltimore, MD 21202
Telephone: (410) 576-6300
jbhoward@oag.state.md.us
jsegal@oag.state.md.us
sgoldstein@oag.state.md.us

Attorneys for Petitioner State of Maryland

FOR THE COMMONWEALTH OF MASSACHUSETTS

MAURA HEALEY
Attorney General
CHRISTOPHE COURCHESNE
Assistant Attorney General
Chief, Environmental Protection Division
CAROL IANCU
Assistant Attorney General
MEGAN M. HERZOG
DAVID S. FRANKEL
Special Assistant Attorneys General

/s/ Matthew Ireland
MATTHEW IRELAND
Assistant Attorney General
Office of the Attorney General
Environmental Protection Division
One Ashburton Place, 18th Floor
Boston, MA 02108
Telephone: (617) 727-2200
matthew.ireland@mass.gov

Attorneys for Petitioner Commonwealth of Massachusetts

FOR THE PEOPLE OF THE STATE OF MICHIGAN

DANA NESSEL
Attorney General of Michigan

/s/ Neil D. Gordon
NEIL D. GORDON
GILLIAN E. WENER
Assistant Attorneys General
Michigan Department of Attorney General
Environment, Natural Resources and Agriculture Division
P.O. Box 30755
Lansing, MI 48909
Telephone: (517) 335-7664
gordonn1@michigan.gov

Attorneys for Petitioner People of the State of Michigan

FOR THE STATE OF MINNESOTA

KEITH ELLISON
Attorney General of Minnesota

/s/ Peter N. Surdo
PETER N. SURDO
Special Assistant Attorney General
445 Minnesota Street, Suite 900
St. Paul, MN, 55101
Telephone: (651) 757-1061
Peter.Surdo@ag.state.mn.us

Attorneys for Petitioner State of Minnesota

FOR THE STATE OF NEVADA

AARON D. FORD
Attorney General of Nevada

/s/ Heidi Parry Stern
HEIDI PARRY STERN
Solicitor General
DANIEL P. NUBEL
Deputy Attorney General
Office of the Nevada Attorney General
100 N. Carson Street
Carson City, NV 89701
HStern@ag.nv.gov

Attorneys for Petitioner State of Nevada

FOR THE STATE OF NEW JERSEY

GURBIR S. GREWAL
Attorney General of New Jersey

/s/ Lisa Morelli
LISA MORELLI
Deputy Attorney General
25 Market St., PO Box 093
Trenton, NJ 08625-0093
Telephone: (609) 376-2745
Fax: (609) 341-5031
lisa.morelli@law.njoag.gov

Attorneys for Petitioner State of New Jersey

FOR THE STATE OF NEW MEXICO

HECTOR BALDERAS
Attorney General of New Mexico

/s/ William Grantham
WILLIAM GRANTHAM
Assistant Attorney General
State of New Mexico Office of the
Attorney General
Consumer & Environmental Protection
Division
201 Third Street NW, Suite 300
Albuquerque, NM 87102
Telephone: (505) 717-3520
wgrantham@nmag.gov

Attorneys for Petitioner State of New Mexico

FOR THE STATE OF NEW YORK

LETITIA JAMES
Attorney General of New York
STEVEN C. WU
Deputy Solicitor General
YUEH-RU CHU
Chief, Affirmative Litigation Section
Environmental Protection Bureau
AUSTIN THOMPSON
Assistant Attorney General

/s/ Gavin G. McCabe
GAVIN G. MCCABE
Assistant Attorney General
28 Liberty Street, 19th Floor
New York, NY 10005
Telephone: (212) 416-8469
gavin.mccabe@ag.ny.gov

Attorneys for Petitioner State of New York

FOR THE STATE OF NORTH CAROLINA

JOSHUA H. STEIN
Attorney General
DANIEL S. HIRSCHMAN
Senior Deputy Attorney General
FRANCISCO BENZONI
Special Deputy Attorney General

/s/ Asher P. Spiller
ASHER P. SPILLER
TAYLOR CRABTREE
Assistant Attorneys General
North Carolina Department of Justice
P.O. Box 629
Raleigh, NC 27602
Telephone: (919) 716-6400

Attorneys for Petitioner State of North Carolina

FOR THE STATE OF OREGON

ELLEN F. ROSENBLUM
Attorney General of Oregon

/s/ Paul Garrahan
PAUL GARRAHAN
Attorney-in-Charge
STEVE NOVICK
Special Assistant Attorney General
Natural Resources Section
Oregon Department of Justice
1162 Court Street NE
Salem, OR 97301-4096
Telephone: (503) 947-4593
Paul.Garrahan@doj.state.or.us
Steve.Novick@doj.state.or.us

Attorneys for Petitioner State of Oregon

FOR THE COMMONWEALTH OF PENNSYLVANIA

JOSH SHAPIRO
Attorney General of Pennsylvania
MICHAEL J. FISCHER
Chief Deputy Attorney General
JACOB B. BOYER
Deputy Attorney General

/s/ Ann R. Johnston
ANN R. JOHNSTON
Senior Deputy Attorney General
Office of Attorney General
1600 Arch St. Suite 300
Philadelphia, PA 19103
Telephone: (215) 560-2171
ajohnston@attorneygeneral.gov

Attorneys for Petitioner Commonwealth of Pennsylvania

FOR THE STATE OF RHODE ISLAND

PETER F. NERONHA
Attorney General of Rhode Island

/s/ Gregory S. Schultz
GREGORY S. SCHULTZ
Special Assistant Attorney General
Office of Attorney General
150 South Main Street
Providence, RI 02903
Telephone: (401) 274-4400
gschultz@riag.ri.gov

Attorneys for Petitioner State of Rhode Island

FOR THE STATE OF VERMONT

THOMAS J. DONOVAN, JR.
Attorney General

/s/ Nicholas F. Persampieri
NICHOLAS F. PERSAMPIERI
Assistant Attorney General
Office of the Attorney General
109 State Street
Montpelier, VT 05609
Telephone: (802) 828-3171
nick.persampieri@vermont.gov

Attorneys for Petitioner State of Vermont

FOR THE COMMONWEALTH OF VIRGINIA

MARK R. HERRING
Attorney General
PAUL KUGELMAN, JR.
Senior Assistant Attorney General
Chief, Environmental Section

/s/ Caitlin C. G. O'Dwyer
CAITLIN C. G. O'DWYER
Assistant Attorney General
Office of the Attorney General
Commonwealth of Virginia
202 North 9th Street
Richmond, VA 23219
Telephone: (804) 786-1780
godwyer@oag.state.va.us

Attorneys for Petitioner Commonwealth of Virginia

FOR THE STATE OF WASHINGTON

ROBERT W. FERGUSON
Attorney General

/s/ Emily C. Nelson
EMILY C. NELSON
Assistant Attorney General
Office of the Attorney General
P.O. Box 40117
Olympia, WA 98504
Telephone: (360) 586-4607
emily.nelson@atg.wa.gov

Attorneys for Petitioner State of Washington

FOR THE STATE OF WISCONSIN

JOSHUA L. KAUL
Attorney General of Wisconsin

/s/ Jennifer L. Vandermeuse
JENNIFER L. VANDERMEUSE
GABE JOHNSON-KARP
Assistant Attorneys General
Wisconsin Department of Justice
Post Office Box 7857
Madison, WI 53702-7857
Telephone: (608) 266-7741 (JLV)
(608) 267-8904 (GJK)
Fax: (608) 267-2223
vandermeusejl@doj.state.wi.us
johnsonkarpg@doj.state.wi.us

Attorneys for Petitioner State of Wisconsin

FOR THE CITY OF LOS ANGELES

MICHAEL N. FEUER
Los Angeles City Attorney
MICHAEL J. BOSTROM
Assistant City Attorney

/s/ Michael J. Bostrom
MICHAEL J. BOSTROM
Assistant City Attorney
200 N. Spring Street, 14th Floor
Los Angeles, CA 90012
Telephone: (213) 978-1867
Fax: (213) 978-2286
Michael.Bostrom@lacity.org

Attorneys for Petitioner City of Los Angeles

FOR THE CITY OF NEW YORK

JAMES E. JOHNSON
New York City Corporation Counsel
CHRISTOPHER G. KING
ALICE R. BAKER
Senior Counsel
SHIVA PRAKASH
Assistant Corporation Counsel

/s/ Christopher G. King
CHRISTOPHER G. KING
Senior Counsel
New York City Law Department
100 Church Street
New York, New York
Telephone: (212) 356-2074
Fax: (212) 356-2084
cking@law.nyc.gov

Attorneys for Petitioner City of New York

FOR THE CITY AND COUNTY OF DENVER

KRISTIN M. BRONSON
City Attorney
EDWARD J. GORMAN
LINDSAY S. CARDER
Assistant City Attorneys

/s/ Edward J. Gorman
EDWARD J. GORMAN
Assistant City Attorney
Denver City Attorney's Office
201 W. Colfax Avenue, Dept. 1207
Denver, Colorado 80202
Telephone: (720) 913-3275
Edward.Gorman@denvergov.org

Attorneys for Petitioner City and County of Denver

FOR THE CITY AND COUNTY OF SAN FRANCISCO

DENNIS J. HERRERA
City Attorney
ROBB W. KAPLA
Deputy City Attorney

/s/ *Robb W. Kapla*
ROBB W. KAPLA
Deputy City Attorney
City Hall, Room 234
1 Dr. Carlton B. Goodlett Place
San Francisco, California 94102-4602
Telephone: (415) 554-4746
Fax: (415) 554-4715
Robb.Kapla@sfcityatty.org

Attorneys for Petitioner City and County of San Francisco

FOR THE BAY AREA AIR QUALITY MANAGEMENT DISTRICT

/s/ *Brian C. Bunger*
BRIAN C. BUNGER, District Counsel
RANDI LEIGH WALLACH
Bay Area Air Quality Mgmt. District
375 Beale Street, Suite 600
San Francisco, CA 94105
Telephone: (415) 749-4920
Fax: (415) 749-5103
BBunger@baaqmd.gov

Attorneys for Petitioner Bay Area Air Quality Management District

FOR THE SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

/s/ Kathrine Pittard
KATHRINE PITTARD, District Counsel
Sacramento Metropolitan Air Quality Mgmt. District
777 12th Street
Sacramento, CA 95819
Telephone: (916) 874-4907
Fax: (916) 874-4899
KPittard@airquality.org

Attorney for Petitioner Sacramento Metropolitan Air Quality Management District

FOR THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

/s/ Bayron Gilchrist
BAYRON GILCHRIST, General Counsel
BARBARA BAIRD, Chief Deputy Counsel
BRIAN TOMASOVIC
KATHRYN ROBERTS
South Coast Air Quality Mgmt. District
21865 Copley Dr., Diamond Bar, CA 91765
Telephone: (909) 396-3400
Fax: (909) 396-2961
BGilchrist@aqmd.gov

Attorneys for Petitioner South Coast Air Quality Management District

CERTIFICATE OF COMPLIANCE

I hereby certify that the foregoing brief complies with the type-volume limitations of the applicable rules and this Court's briefing format order dated October 19, 2020 (ECF No. 1867064). According to Microsoft Word, the portions of this document not excluded by Federal Rule of Appellate Procedure 32(f) and Circuit Rule 32(e)(1) contain 21,623 words. When added to the words of the other Coordinating Petitioners' briefs, this does not exceed the 36,800 words the Court allocated to these Petitioners. I further certify that this brief complies with the typeface requirements of Federal Rule of Appellate Procedure 32(a)(5) and the type-style requirements of Federal Rule of Appellate Procedure 32(a)(6) because this document has been prepared in a proportionally spaced, 14-point typeface (Garamond).

/s/ M. Elaine Meckenstock

M. ELAINE MECKENSTOCK
Deputy Attorney General
1515 Clay Street, 20th Floor
Oakland, CA 94612
Telephone: (510) 879-0299
Fax: (510) 622-2270
Elaine.Meckenstock@doj.ca.gov

CERTIFICATE OF SERVICE

I hereby certify that on January 14, 2021, I electronically filed the foregoing brief of State and Local Government Petitioners, and accompanying Addendum, with the United States Court of Appeals for the District of Columbia Circuit via the CM/ECF system. All parties that are represented by counsel registered as CM/ECF users will be served by that system. I further certify that service will be accomplished via email for the following participant:

Diane K. Taira
State of Hawaii
Dept. of the Attorney General
425 Queen Street
Honolulu, HI 96813
Diane.K.Tairi@hawaii.gov

/s/ M. Elaine Meckenstock
M. ELAINE MECKENSTOCK
Deputy Attorney General
1515 Clay Street, 20th Floor
Oakland, CA 94612
Telephone: (510) 879-0299
Fax: (510) 622-2270
Elaine.Meckenstock@doj.ca.gov