

ORAL ARGUMENT NOT YET SCHEDULED

No. 20-1145

Consolidated with Cases No. 20-1167, -1168,
-1169, -1173, -1174, -1176, -1177 & -1230

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

COMPETTIVE ENTERPRISE INSTITUTE et al.,

Petitioners,

v.

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION et al.,

Respondents,

ALLIANCE FOR AUTOMOTIVE INNOVATION et al.,

Intervenors for Respondents.

PROOF BRIEF OF PUBLIC INTEREST ORGANIZATION PETITIONERS

VICKIE L. PATTON
PETER M. ZALZAL
ALICE HENDERSON
JIM DENNISON
Environmental Defense Fund
2060 Broadway, Suite 300
Boulder, CO 80302
(303) 447-7215
vpatton@edf.org

MATTHEW LITTLETON
SEAN H. DONAHUE
Donahue, Goldberg, Weaver & Littleton
1008 Pennsylvania Avenue SE
Washington, DC 20003
(202) 683-6895
matt@donahuegoldberg.com

Counsel for Environmental Defense Fund

Additional counsel listed in signature blocks

CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

A. Parties and Amici curiae

Petitioners

Case No. 20-1145: Competitive Enterprise Institute, Anthony Kreucher, Walter M. Kreucher, James Leedy, and Marc Scribner.

Case No. 20-1167: State of California, by and through Governor Gavin Newsom, Attorney General Xavier Becerra, and the California Air Resources Board, the States of Colorado, Connecticut, Delaware, Hawaii, Illinois, Maine, Maryland, Minnesota, Nevada, New Jersey, New Mexico, New York, North Carolina, Oregon, Rhode Island, Vermont, Washington, Wisconsin; Commonwealths of Massachusetts, Pennsylvania, and Virginia; the People of the State of Michigan; the District of Columbia; the Cities of Los Angeles and New York; and Cities and Counties of San Francisco and Denver.

Case No. 20-1168: Natural Resources Defense Council, Inc., Center for Biological Diversity, Chesapeake Bay Foundation, Inc., Communities for a Better Environment, Conservation Law Foundation, Consumer Federation of America, Environment America, Environmental Defense Fund, Environmental Law and Policy Center, Public Citizen, Inc., Sierra Club, and Union of Concerned Scientists.

Case No. 20-1169: Environmental Defense Fund, Center for Biological Diversity, Chesapeake Bay Foundation, Inc., Communities for a Better Environment, Conserva-

tion Law Foundation, Consumer Federation of America, Environment America, Environmental Law and Policy Center, Natural Resources Defense Council, Inc., Public Citizen, Inc., and Sierra Club.

Case No. 20-1173: South Coast Air Quality Management District, Bay Area Air Quality Management District, and Sacramento Metropolitan Air Quality Management District.

Case No. 20-1174: National Coalition for Advanced Transportation.

Case No. 20-1176: Advanced Energy Economy.

Case No. 20-1177: Calpine Corporation, Consolidated Edison, Inc., National Grid USA, New York Power Authority, and Power Companies Climate Coalition.

Case No. 20-1230: Clean Fuels Development Coalition, Environmental and Energy Study Institute, The Farmers' Educational & Cooperative Union of America, d/b/a National Farmers Union, Farmers Union Enterprises, Inc., Glacial Lakes Energy, LLC., Governors' Biofuels Coalition, Montana Farmers Union, North Dakota Farmers Union, Siouxland Ethanol, LLC, South Dakota Farmers Union, and Urban Air Initiative, Inc.*

Respondents

Case Nos. 20-1145, -1173: National Highway Traffic Safety Administration; James C. Owens, in his official capacity as Acting Administrator, National Highway Traffic

* On January 14, 2021, petitioners in Case No. 20-1230 moved for voluntary dismissal of their petition for review. ECF No. 1880120.

Safety Administration; U.S. Environmental Protection Agency; and Andrew Wheeler, in his official capacity as Administrator of the U.S. Environmental Protection Agency.

Case Nos. 20-1167, 20-1174, 20-1176: Andrew Wheeler, in his official capacity as Administrator, U.S. Environmental Protection Agency; U.S. Environmental Protection Agency; Elaine L. Chao, in her official capacity as Secretary, U.S. Department of Transportation;[†] U.S. Department of Transportation; James C. Owens, in his official capacity as Acting Administrator, National Highway Traffic Safety Administration; and National Highway Traffic Safety Administration.

Case No. 20-1168: Andrew Wheeler, in his official capacity as Administrator of the U.S. Environmental Protection Agency; and U.S. Environmental Protection Agency.

Case No. 20-1169: James C. Owens, in his official capacity as Acting Administrator of the National Highway Traffic Safety Administration; Elaine L. Chao, in her official capacity as Secretary of the U.S. Department of Transportation; and National Highway Traffic Safety Administration.

Case Nos. 20-1177 & 20-1230: U.S. Environmental Protection Agency; U.S. Department of Transportation; and National Highway Traffic Safety Administration.

[†] Steven G. Bradbury is “automatically substituted” for Elaine L. Chao as of January 12, 2021, pursuant to Federal Rule of Appellate Procedure 43(c)(2).

Respondent-Intervenors

Case No. 20-1145: Alliance for Automotive Innovation; Bay Area Air Quality Management District; City and County of Denver; the Commonwealths of Massachusetts, Pennsylvania, and Virginia; Conservation Law Foundation; Consumer Federation of America; District of Columbia; Environment America; Environmental Defense Fund; Environmental Law and Policy Center; Ingevity Corporation; Natural Resources Defense Council, Inc.; Public Citizen, Inc.; Sacramento Metropolitan Air Quality Management District; Sierra Club; South Coast Air Quality Management District; the States of California, Colorado, Connecticut, Hawaii, Illinois, Maine, Maryland, Minnesota, Nevada, New Jersey, New York, North Carolina, Oregon, Rhode Island, Vermont, Washington, and Wisconsin; and the Union of Concerned Scientists.

Other Intervenors

American Honda Motor Co., Inc., BMW of North America, LLC, Ford Motor Company, Rolls-Royce Motor Cars NA, LLC, and Volkswagen Group of America, Inc. have intervened in all cases solely with respect to the issue of remedy.

Amici Curiae

To date, no individuals or entities have sought leave to participate as amicus curiae. On December 21, 2020, all parties consented to the filing of amicus briefs provided that amici comply with applicable court rules. ECF No. 1876643.

B. Rulings Under Review

Certain of these petitions challenge an action of the U.S. Environmental Protection Agency published at 83 Fed. Reg. 16,077 (Apr. 13, 2018). All petitions challenge actions of the U.S. Environmental Protection Agency and the National Highway Traffic Safety Administration jointly published as *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks*, 85 Fed. Reg. 24,174 (April 30, 2020).

C. Related Cases

The undersigned is not aware of any related cases within the meaning of Circuit Rule 28(a)(1)(C) that have not been consolidated with these petitions.

/s/ Matthew Littleton
Matthew Littleton

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GLOSSARY

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| EIA | U.S. Energy Information Administration |
| EPA | U.S. Environmental Protection Agency |
| EPCA | Energy Policy and Conservation Act of 1975 |
| GHG | greenhouse gas |
| NHTSA | National Highway Traffic Safety Administration |

INTRODUCTION

These jointly issued rules to weaken vehicular emissions standards of the U.S. Environmental Protection Agency (EPA) and fuel-economy standards of the National Highway Traffic Safety Administration (NHTSA) are indefensible. These rules, which we refer to collectively as the “Rollback,” gravely endanger public health, harm national energy security, cost consumers money, and lack legal or factual support.

Transportation is the largest domestic source of greenhouse gas (GHG) emissions, which EPA has found cause or contribute to climate change. The immense damage that climate change inflicts on human health, the economy, and natural resources will increase dramatically absent immediate action to curb emissions. Technologies that sharply reduce climate-disrupting emissions from light-duty vehicles (cars and light trucks) are already on the road. They mitigate climate change and other severe air pollution problems and save consumers billions by reducing fuel costs far more than they increase vehicle prices. They also strengthen national security by conserving massive amounts of oil and reducing international instability driven by climate change. Absent regulation, however, those technologies will be under-deployed because market forces alone do not account for the vast damage these emissions and oil consumption cause.

Congress tackled this market failure with two “overlap[ping],” but “wholly independent,” federal statutes designed to promote cleaner, more fuel-efficient vehicles. *Massachusetts v. EPA*, 549 U.S. 497, 532 (2007). The Clean Air Act requires EPA to set GHG emissions standards that “shall take effect” no later than “necessary to permit

the development and application of the requisite technology.” 42 U.S.C. § 7521(a)(2). And, under the Energy Policy and Conservation Act (EPCA), NHTSA must require automakers’ fleets to achieve the “maximum feasible” level of average fuel economy. 49 U.S.C. § 32902(f). In 2012, EPA set standards to reduce GHG emissions by roughly 5% annually from model years 2021–2025, and NHTSA set comparable fuel-economy standards for model year 2021. Based on an extensive and unequivocal technical record, EPA determined in a January 2017 final action that its model year 2022–2025 standards remained appropriate and would cost less than previously projected, with net societal benefits of \$59–98 billion.

The Trump Administration renounced EPA’s 2017 final determination, replaced it with a slipshod contrary determination, and finalized far weaker emission and fuel-economy standards for model year 2021–2026 vehicles. The new standards increase in stringency by only 1.5% annually: comparable to—and, in NHTSA’s case, even worse than—what the Agencies found automakers would attain even if the standards were flatlined at model year 2020 levels. The Agencies (under)project that, in the aggregate, the Rollback will increase GHG emissions by nearly one billion metric tons, increase oil consumption by nearly two billion barrels, and cost drivers at least \$175 billion to purchase that additional fuel. Nothing in the record justifies actions so inimical to the Agencies’ governing statutes. Even the Agencies’ own economic analysis (which is rife with arbitrary assumptions and obvious, major computational mistakes), does not claim the Rollback’s benefits outweigh its costs.

Both the Rollback and EPA's determination that its prior standards were "inappropriate" are irredeemably flawed and must be vacated for the reasons stated by State and Local Government Petitioners, whose arguments we adopt. This brief, filed by twelve Public Interest Organization Petitioners in Cases No. 20-1168 and 20-1169, supplies additional reasons why the Rollback is unlawful.

STATEMENT OF JURISDICTION

We adopt the statement of State and Local Government Petitioners.

STATEMENT OF ISSUES

1. Whether the Rollback was arbitrary, capricious, and contrary to law because the Agencies did not adequately consider air pollution impacts.
2. Whether the Rollback was arbitrary, capricious, and contrary to law because the Agencies over-relied on purported consumer preferences to subvert statutory mandates; undervalued fuel savings as compared to upfront vehicle costs; and ignored the effect of higher fuel prices under the Rollback.
3. Whether the Rollback was arbitrary and capricious because the Agencies' cost-benefit analysis contains many significant computational mistakes.
4. Whether NHTSA's minimum domestic passenger-car standards violated 49 U.S.C. § 32902(b)(4) and were arbitrary and capricious.
5. Whether the Agencies violated the Endangered Species Act.
6. Whether NHTSA violated the National Environmental Policy Act.

STATUTES AND REGULATIONS

Pertinent statutes and regulations appear in the addendum to State and Local Government Petitioners' brief.

STATEMENT OF THE CASE

We adopt the statement of State and Local Government Petitioners.

SUMMARY OF ARGUMENT

1. The Rollback was unlawful and arbitrary because the Agencies relied on a fundamentally flawed analysis of pollution impacts. Pollution control is central to EPA's statutory charge (and important to NHTSA's), yet the Agencies gave scant, if any, consideration to the huge increases in climate-disrupting pollution the Rollback will cause. The Agencies undervalued the consequent harm by tens of billions of dollars when they slashed the well-grounded economic valuation of climate-change harms (the "social cost of carbon"). The Agencies also miscalculated the increases in emissions of smog- and soot-causing air pollutants ("criteria pollutants," *see* State Br. 20 n.4) and the resulting premature deaths and other societal costs of the Rollback.

2. The Agencies claimed the Rollback benefits consumers, but their treatment of its consumer effects was unlawful and arbitrary. First, defying the statutes' express aims of addressing pollution, energy-security, and consumer impacts that market forces overlook, the Agencies relied heavily on speculative concerns about "consumer acceptance" of cleaner, more fuel-efficient vehicles to weaken their standards. Second, while conceding that consumers will pay more at the pump under the Rollback than they save in

vehicle purchase prices, the Agencies capriciously assigned special “value” to lowering “upfront costs.” Third, while admitting that the Rollback will markedly increase oil consumption and thereby increase fuel prices, the Agencies arbitrarily understated that increase and ignored its substantial effect on consumers.

3. The Rollback rested in part on a cost-benefit analysis the Agencies claimed “straddled zero.” They mistook this ostensible rough equivalence as license to weaken standards. But large and patent mistakes in the Agencies’ analysis render the premise of equivalence arbitrary and capricious. Most prominently, the Agencies ascribed massive “congestion benefits” to the Rollback, reasoning that it will depress driving by making it more expensive, thereby reducing traffic delays and related costs. But the Agencies’ congestion analysis contained basic errors, including failure to adjust for inflation and flagrant misapplications of federal driving statistics. Correcting these errors reduces the Rollback’s supposed congestion benefits by nearly \$30 billion.

Other clear errors inflated the Rollback’s benefits by billions more dollars. Contrary to the Agencies’ representation, their computer modeling barred automakers from deploying cost-effective “high-compression ratio technologies” on dozens of new-vehicle models, which would have reduced automakers’ compliance costs. Another modeling error artificially inflated compliance costs by rendering more than one-quarter of automakers’ bank of compliance credits unusable in circumstances where the Agencies themselves said credits *could* be used.

There was more. In assessing additional fuel consumption under the Rollback, the Agencies ignored gasoline's ethanol content, thereby understating the gasoline to be consumed under the Rollback and inflating its purported benefits by billions. The Agencies also overstated the public-health benefits of the Rollback's modest reduction in power-plant emissions—due to reduced electric-vehicle sales—by calculating the harms from power-plant emissions as if they were (doubly harmful) refinery emissions.

4. NHTSA unlawfully weakened its minimum fuel-economy standards for domestic passenger cars by using fuel-economy projections that were inconsistent with the projections used to justify the overall fleetwide standards.

5. The Agencies failed to consult with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service as required by the Endangered Species Act. The Rollback is a discretionary action to which that Act applies, and the Agencies' (erroneous) finding of uncertainty regarding the Rollback's effects on endangered and threatened species and their critical habitat cannot substitute for consultation. NHTSA also violated the National Environmental Policy Act by not considering action alternatives that lessen environmental impacts, or the cumulative impacts of the Rollback when coupled with the Agencies' recent actions invalidating state zero-emission-vehicle laws.

STANDARD OF REVIEW

We agree with the standard stated by State and Local Government Petitioners.

STANDING

Public Interest Organization Petitioners' members are injured by increased emissions of GHGs and other pollutants traceable to the Rollback. *See, e.g.*, 85 Fed. Reg. 24,174, 25,055, 25,060, 25,084, 25,172 (Apr. 30, 2020) (Final Rollback). Some members live or own property in areas that experience concrete and serious effects of climate change; live or work near oil refineries or major roadways where higher localized pollution will be experienced; or study, photograph, teach about, or enjoy imperiled species harmed by climate-change or localized pollution from refineries and tailpipes. The Rollback exacerbates the disproportionate and cumulative impacts that members in minority and economically disadvantaged communities experience from pollution, like respiratory illnesses, and from climate change, like wildfires and flooding. Some members want to purchase lower-emitting and/or fuel-efficient vehicles whose availability the Rollback will diminish, and some members' livelihoods depend on professions the Rollback adversely affects. Vacatur will redress all these injuries.¹

ARGUMENT

We incorporate by reference the arguments of State and Local Government Petitioners and provide the following additional reasons why the Rollback is unlawful.

¹ Our standing declarations are reproduced in a separately bound addendum.

I. THE AGENCIES' DISREGARD OF AIR POLLUTION IMPACTS WAS ARBITRARY AND UNLAWFUL

The objective of the Clean Air Act, and Section 202 in particular, is to reduce pollution that endangers public health and welfare. EPA must mitigate those dangers through vehicular emissions standards. *See Coal. for Responsible Regulation, Inc. v. EPA*, 684 F.3d 102, 121–22 (D.C. Cir. 2012). Further, analysis of pollution impacts associated with oil consumption is part of NHTSA's duty under EPCA to consider “the need of the United States to conserve energy.” 49 U.S.C. § 32902(f); *see, e.g., Pub. Citizen v. NHTSA*, 848 F.2d 256, 262–63 n.27 (D.C. Cir. 1988); 77 Fed. Reg. 62,623, 62,669 & nn.118–19 (Oct. 15, 2012). Yet the Agencies' analysis of the Rollback's enormously harmful pollution effects was grievously deficient.

The Agencies did not rationally assess the massive climate harms of the Rollback, which will dramatically *increase* GHG emissions despite a record showing the urgency of *decreasing* them. The Agencies arbitrarily underestimated the economic cost of pollution harms by tens of billions of dollars when they slashed the well-grounded social cost of carbon. State Br. 88–89. They also under-projected increases in other emissions and the harms they will cause, by a total of \$11.6 billion and up to 2,438 premature deaths.

A. The Agencies Did Not Reasonably Consider The Rollback's Contributions to Climate-Destabilizing Pollution

The Agencies described their 2012 standards as “the most significant federal actions ever taken to reduce GHG emissions and improve fuel economy.” 77 Fed. Reg.

at 62,630. The Rollback, by contrast, *increases* emissions and fuel combustion enormously; few, if any, administrative actions have had larger adverse climate effects. The Agencies estimate that affected vehicles will spew at least 867 million more tons of GHGs into the atmosphere, 85 Fed. Reg. at 24,176—more than Germany’s total annual emissions, and enough on its own to measurably raise global GHG concentrations, average temperature, and sea level. *See* JA_–_[NHTSA-2017-0069-0738_5-40_to_5-45]. Beyond these additions to long-lived atmospheric pollution, the Rollback imperils U.S. leadership in developing and commercializing technologies to mitigate the climate crisis.

These massive emissions increases will occur even as the window narrows to avoid the most severe climatic damages. The Rollback defies reports from leading scientific bodies, and EPA itself, sounding the alarm for immediate action to lower GHG emissions. The 2018 National Climate Assessment (authored by EPA and 12 other federal agencies under a congressional charge) found that “the evidence of human-caused climate change is overwhelming and continues to strengthen,” and that impacts “are intensifying across the country.” JA_[NHTSA-2017-0069-0803_36]. Devastating, cascading damage threatens to become irreversible if global temperatures rise more than 1.5° Celsius over pre-industrial levels. JA_–_[NHTSA-2017-0069-0630_SPM-8_to_SPM-13]; *see also* 80 Fed. Reg. 64,510, 64,518-99 (Oct. 23, 2015) (EPA listing climate-change dangers that depend on timing and extent of emissions reductions); JA_–_[EPA-HQ-OAR-2018-0283-5075_2-27]; State Br. 36–38.

The Agencies did not seriously consider any of this. EPA’s failure was particularly abject, as it is specifically charged in Section 202(a) with limiting emissions of dangerous pollution from motor vehicles.² EPA has itself repeatedly documented the massive damage wrought by vehicular GHG emissions and the urgency of curtailing climate change. *See* JA__-[EPA-HQ-OAR-2018-0283-5075_3-7]; State Br. 36–38. EPA’s duty is to prescribe standards addressing this “endanger[ment],” while considering necessary lead time in light of technology and compliance costs. 42 U.S.C. § 7521(a)(1). EPA cannot rationally perform that task without seriously examining the nature, magnitude, and effects of climate-changing pollution and weighing it against technological and cost constraints. *Cf. Michigan v. EPA*, 576 U.S. 743, 752 (2015) (“[R]easonable regulation ordinarily requires paying attention to the advantages and disadvantages of agency decisions.”). EPA nowhere explained why it was reasonable, in light of its own endangerment findings and the dangers documented in this record, to weaken its prior standards, vastly increasing vehicular emissions despite ready availability of effective technologies to reduce them.

EPA’s discussion of climate change comprised little more than references to *NHTSA*’s Environmental Impact Statement. 85 Fed. Reg. at 24,846, 24,849, 25,111

² As State and Local Government Petitioners show (Br. 43–44), EPA misconstrued Section 202(a)’s directive to impose standards to reduce dangerous emissions—bounded by consideration of timing, technical feasibility, and cost—as an open-ended balancing test giving the agency “effectively complete discretion.” *Oceana, Inc. v. Locke*, 670 F.3d 1238, 1242 (D.C. Cir. 2011).

n.2480. NHTSA's document cannot discharge EPA's Clean Air Act duty. In any event, NHTSA arbitrarily brushed off the effects of nearly a billion metric tons of climate pollution as "extremely small in relation to global emissions trajectories." JA_[NHTSA-2017-0069-0738_S-13]. That ignores the fundamental point—repeatedly made by EPA and other expert bodies—that mitigating climate-change impacts requires reducing emissions from *all* important source categories. *See, e.g.*, JA_[NHTSA-2018-0067-12088_24].

EPA made exactly that point in its 2009 endangerment finding for vehicular GHG emissions:

[N]o single [GHG] source category dominates on the global scale, and many (if not all) individual ... source categories could appear small in comparison to the total when, in fact, they could be very important contributors in terms of both absolute emissions or in comparison to other source categories, globally or within the United States.

74 Fed. Reg. 66,498, 66,543 (Dec. 15, 2009). Foregoing regulation on the fatalistic grounds embraced here "would effectively lead to a tragedy of the commons, whereby no country or source category would be accountable for contributing to the global problem of climate change, and nobody would take action as the problem persists and worsens." *Id.*; *see also Massachusetts*, 549 U.S. at 524–25 (observing that agencies "do not generally resolve massive problems in one fell regulatory swoop"). Here, EPA did not recognize, much less explain, its departure from that reasoning—even though climate-change dangers are now known to be far more severe. *See Physicians for Social Responsibility v. Wheeler*, 956 F.3d 634, 644 (D.C. Cir. 2020) ("Reasoned decision-making requires that

when departing from precedents or practices, an agency must ‘offer a reason to distinguish them or explain its apparent rejection of their approach.’”). EPA’s new stance is arbitrary, capricious, and inconsistent with its statutory mandate. On that view, climate-pollution mitigation is never warranted because each source category causes or contributes to only a fraction of the overall problem.

The Agencies’ error was magnified because they used an unsound “interim” estimate of the social cost of carbon, thereby slashing the economic value ascribed to carbon reductions more than five-fold. State Br. 88–89; *see also California v. Bernhardt*, 472 F.Supp.3d 573, 611–14 (N.D. Cal. 2020) (agency erred by using an “interim domestic” model rather than well-established intergovernmental model to calculate cost of methane emissions); JA_–_[EPA-HQ-OAR-2018_0283-4213_6-20].

In sum, neither Agency explained how weakening standards to dramatically increase climate-destabilizing emissions is consistent with statutory requirements or reasonable on a record showing severe dangers and ready, effective means to control those emissions. The Agencies failed to reach an “express and considered conclusion” on an “important aspect of the problem” that they “must consider.” *Cigar Ass’n of Am. v. FDA*, 964 F.3d 56, 61 (D.C. Cir. 2020) (cleaned up).

B. The Agencies Grossly Underestimated Emissions Increases And Attendant Harms Under The Rollback

The Agencies severely underestimated the increase in emissions of GHGs and other air pollutants traceable to the Rollback. The Agencies unjustifiably lowered their

estimate of additional emissions under the Rollback by inflating the rate at which “newer, cleaner” vehicles will replace older ones, State Br. 51–57, and by overstating the “rebound” effect of their prior standards—i.e., projecting that the Rollback will dramatically reduce driving, *id.* at 91–94.

Additionally, as shown below, the Agencies *understated* the *increase* in pollution from domestic refineries (which must refine more gasoline for less fuel-efficient vehicles) and *overstated* the Rollback’s *decrease* in pollution from power plants (which need not generate power for as many electric vehicles). These errors fatally undermine the Agencies’ conclusion that “incremental fuel savings, emissions reductions, and environmental benefits of higher standards [are] not significant enough to outweigh the immediate economic costs.” 85 Fed. Reg. at 25185–86.

1. The Agencies significantly understated increases in refinery pollution

The Agencies significantly understated the Rollback’s criteria-pollution impacts, and thereby omitted hundreds of premature deaths from their analysis. They assumed that increased domestic refining will supply half the additional gasoline consumed under the Rollback, with the other half supplied by a combination of increased imports and reduced exports of domestically refined gasoline. 85 Fed. Reg. at 24,881. Because this export-bound gasoline would be refined either way (diverting it to meet additional domestic demand under the Rollback only affects where it is ultimately used), the Agencies asserted that domestic refining and associated pollution will rise by only half the amount needed to accommodate the Rollback’s total additional gasoline demand.

That assertion conflicts with modeling on which the Agencies elsewhere relied. In 2018, the federal Energy Information Administration (EIA) modeled the effects of flatlining light-duty vehicle standards in 2021. EIA found that the vast majority (92%) of increased gasoline demand would be satisfied by domestic refining.³ The Agencies never addressed this finding in analyzing the Rollback's impact on gasoline refining, despite relying on EIA's analysis in the next breath to document the relationship between gasoline demand and domestic crude-oil production. 85 Fed. Reg. at 24,882. The Agencies' selective, "internally inconsistent" use of the EIA analysis was arbitrary. *ANR Storage Co. v. FERC*, 904 F.3d 1020, 1024, 1028 (D.C. Cir. 2018).

The Agencies tried to justify their approach by citing *other* EIA projections that future gasoline exports will rise. 85 Fed. Reg. at 24,877. But those projections comport with EIA's 2018 analysis, which shows a strong positive correlation between domestic

³ JA_-_ [EIA_ *AnnualEnergyOutlook2018, Table: Petroleum And Other Liquids Supply And Disposition*, <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=11-AEO2018®ion=0-0&cases=ref2018~effrelax-all&start=2016&end=2050&f=A&linechart=~~ref2018-d121317a.43-11-AEO2018~effrelaxall-d030918a.43-11-AEO2018~::~::~::~ref2018-d121317a.10-11-AEO2018~effrelaxall-d030918a.10-11-AEO2018&ctype=linechart&chartindexed=0&sourcekey=0>]. This number is calculated by dividing the increase in gasoline consumption under the flatlined standards by the increase in crude oil processed by U.S. refineries (called "Total Crude Supply" in EIA's analysis) in each year from 2022–2050 (the period when flatlined standards result in higher gasoline consumption), and then averaging the results.

demand and domestic refining, even as net refined product exports increase from 4.7 to 5.1 million barrels per day between 2020 and 2050.⁴

This error was highly consequential. The Agencies projected that if domestic refining met all additional gasoline demand from the Rollback, nitrogen-oxide pollution would triple under the Rollback, particulate pollution would roughly double, and sulfur dioxide pollution would increase over two-and-a-half fold. JA_, _[EPA-HQ-OAR-2018-0283-7671_1769,1800] (reporting results for “Maximum Impact on Domestic Refining” sensitivity run). Under this scenario, the Rollback’s net societal costs will increase by \$7.7 billion, JA_[EPA-HQ-OAR-2018-0283-7671_1807],⁵ and premature deaths will increase by 694 (on the low end) to 1,591 (on the high end). *Compare* JA_[CO2_Max_Refining_Impact_Annual_Societal_Effects_Report,https://www.nhtsa.gov/content/nhtsa-ftp/178111], col. AT–AU, *with* 85 Fed. Reg. at 25,083.

⁴ JA_–_[EIA_AnnualEnergyOutlook2018,Table:PetroleumAndOtherLiquidsSupplyAndDisposition,https://www.eia.gov/outlooks/aeo/data/browser/#/?id=11-AEO2018®ion=0-0&cases=ref2018~effrelaxall&start=2016&end=2050&f=Q&linechart=~~ref2018-d121317a.43-11-AEO2018~effrelaxall-d030918a.43-11-AEO2018~ref2018-d121317a.10-11-AEO2018~effrelaxall-d030918a.10-11-AEO2018~effrelaxall-d030918a.12-11-AEO2018~ref2018-d121317a.12-11-AEO2018&map=&ctype=linechart&chartindexed=0&sourcekey=0].

⁵ The Agencies separately reported impacts of EPA’s and NHTSA’s standards using two alternative discount rates for each (3% and 7%). The impacts—and the effects of correcting the Agencies’ errors—are generally of the same direction and magnitude for both sets of standards. For simplicity, we typically report only the impacts of EPA’s standards, discounted at 3%.

2. The Agencies underestimated the Rollback's health harms by overstating the decrease in power-plant pollution

The Agencies asserted that the Rollback's increased refinery pollution will be partially offset by a reduction in power-plant pollution due to lower electric-vehicle sales. Owing to at least two crucial errors, however, the Agencies dramatically overstated this decrease in power-plant emissions and resultant public-health benefits.

First, the Agencies estimated emissions reductions based on nationwide *average* power-plant emission rates. 85 Fed. Reg. at 24,875. But *incremental* electricity demand from electric vehicles under stronger standards would be met by *incremental* generation, for which emissions are much lower due to trends toward renewable generation. Notably, the Agencies correctly followed the incremental approach to quantify upstream emissions from gasoline production (where doing so reduced the Rollback's perceived cost). *Id.* at 24,876 (addressing relationship of "*changes* in consumption" from the Rollback to "*changes* in" determinants of upstream gasoline emissions); *see also id.* at 24,736 (discussing the "extremely important" distinction between average and marginal congestion costs). The Agencies also previously analyzed their standards' impact on incremental electricity generation, JA__-[EPA-HQ-OAR-2018-0283-0651_4-152_to_4-153], revealing that only 14% of incremental electricity consumed by electric vehicles in 2030 will be produced by coal (the highest-emission source), compared to coal's 42% share of nationwide average generation, JA_[EPA-HQ-OAR-2018-0283-0651_4-160].

The Agencies' analysis here thus is not only internally inconsistent but also an unacknowledged and unexplained departure from past practice.

Second, the Agencies overstated the health benefits of lower electricity emissions under the Rollback by equating those benefits with the benefits of reducing oil-refining emissions—the latter of which the Rollback increases. 85 Fed. Reg. at 24,884. The very EPA analysis the Agencies used to evaluate health harms finds that refinery pollution is generally about twice as harmful as power-plant pollution, due to factors like proximity to affected populations.⁶ Correcting this error adds 347–847 premature deaths and \$3.9 billion in net societal costs under the Rollback.⁷ Combined with the increased premature deaths from refinery pollution discussed above, the premature

⁶ JA_, ___[NHTSA-2017-0069-0772_6_16-17] (valuing electricity-generation-unit emissions of particulate matter in 2020 at \$140,000–350,000 per ton and corresponding refinery emissions at \$330,000–830,000 per ton), cited in 85 Fed. Reg. at 24,883.

⁷ Premature deaths are calculated by multiplying the annual change in upstream criteria-pollutant emissions for model year 1978–2029 electric vehicles under the Rollback (reported in JA_—[CO2_Ref_Annual_Societal_Effects_Report, <https://www.nhtsa.gov/corporate-average-fuel-economy/compliance-and-effects-modeling-system>]) by the difference between the number of premature deaths per ton of refinery pollution versus power plant pollution, using the low- and high-end estimates, and summing the results for each calendar year and pollutant. *See* JA_, ___[NHTSA-2017-0069-0772_50_63]; 85 Fed. Reg. at 24,884 (describing the Agencies' methodology). The monetary impacts are calculated the same way, using the difference between refinery and power-plant harm values and discounting costs in each year to 2019. *See, e.g.*, JA_—[NHTSA-2017-0069-0772_16]. Calculations use the average of low and high reported harm values; consistent with the Agencies' approach, these are converted from 2015 to 2018 dollars. *See* 85 Fed. Reg. at 24,884.

deaths attributable to the Rollback increases to 1,485–3,438—more than *triple* the Agencies’ estimate of 444–1,000 for EPA’s standards, 85 Fed. Reg. at 25,083.

II. THE AGENCIES’ ANALYSIS OF THE ROLLBACK’S EFFECTS ON CONSUMERS WAS UNLAWFUL AND ARBITRARY

The Agencies’ conclusion that the Rollback benefits consumers was unlawful, arbitrary, and unsupported. First, they committed legal error by claiming “uncertainty” about future consumer preferences to override their statutory mandates to control pollution and conserve energy. Even if deferring to consumer preferences to this degree were legally permissible, it was arbitrary here because the Agencies’ analysis revealed that the Rollback imposes large net costs on consumers. The assertion that consumers nonetheless benefit from a reduction in “upfront costs” is irrational, internally inconsistent, and ignores contrary record evidence. Further, the Agencies’ consideration of consumer impacts arbitrarily disregarded the substantial increase in fuel prices for consumers, which the Agencies elsewhere admitted will occur as gasoline demand increases.

A. The Agencies Wrongfully Elevated Purported Consumer Preferences Over Statutory Pollution-Control And Energy-Conservation Objectives

A central justification for EPA’s rollback was its claim that, in 2020, “greater uncertainty about consumer acceptance of [emissions-reduction] technologies” existed than before. 85 Fed. Reg. at 25,108. For its part, NHTSA expected “that consumer demand for fuel-efficient vehicles” will not “grow significantly in the rulemaking timeframe without regulation to prop up manufacturer sales of significantly larger volumes of more fuel-efficient models.” *Id.* at 25,183.

These statements contradict the aims of the Agencies' governing statutes, enacted to address harms from pollution and oil consumption that are *not* remedied by unregulated market forces. Even if consumer preferences had been definitively established, rather than hypothesized, they could not override the Agencies' respective duties under the Clean Air Act and EPCA.

Congress enacted these laws precisely because market forces alone had resulted in insufficient adoption of emissions-reduction and fuel-conservation technologies. *See Ctr. for Auto Safety v. NHTSA (CAS)*, 793 F.2d 1322, 1339 (D.C. Cir. 1986) (“Congress rejected market forces as the sole means of improving energy conservation.” (emphasis omitted)); *NRDC v. EPA*, 655 F.2d 318, 328 (D.C. Cir. 1981) (EPA must “press for the development and application of improved technology rather than be limited by that which exists today” (quoting S. Rep. No. 91-1196 at 24 (1970))); *Int'l Harvester v. Ruckelshaus*, 478 F.2d 615, 640 (D.C. Cir. 1973) (“The driving preferences of hot rodders are not to outweigh the goal of a clean environment.”). Because market forces are insufficient, Congress decreed that the Agencies “shall” set the standards needed to protect public health and welfare, 42 U.S.C. § 7521(a)(1), and conserve energy to the maximum degree feasible, 49 U.S.C. § 32902(a).

These congressional commands would be toothless if agency leaders could reject public-health and energy-conservation measures based on vague allusions to “uncertainty about consumer acceptance” and unwillingness to use regulations to “prop up” consumer demand for fuel-efficient vehicles. Indeed, the most significant advancement

to date in vehicular emissions control—the catalytic converter—initially engendered pronounced consumer fears and industry opposition.⁸ “Uncertainty about consumer acceptance” is inevitable whenever any product is introduced or changed.

Even if such a justification could suffice in theory, the Agencies did not rationally explain why, in *this* context, consumer preferences require weakening otherwise appropriate standards. To the contrary, they admitted that technologies needed to meet the prior standards are already in use on significant fractions of the new-vehicle fleet, years ahead of time. 85 Fed. Reg. at 25,131. The Agencies made no specific, credible finding that consumers would not purchase vehicles conforming to more stringent standards. State Br. 82–84.

B. The Extraordinary Weight The Agencies Assigned “Upfront Costs” Was Arbitrary And Unsupported

The Agencies stated that “[t]he costs to ... automotive consumers would have been too high under the [prior standards].” 85 Fed. Reg. at 24,176. But the Rollback will *cost*, not *save*, consumers money—including billions of dollars annually in forgone fuel savings. Under the Agencies’ own analysis (which significantly underestimates fuel costs, *see infra*, Part II.C), the Rollback will cost the average driver \$678 over the lifetime of a model year 2030 vehicle, even after accounting for the projected reduction in the

⁸ *E.g.*, Owen Ullmann, *Rush On for '74 Car Models*, TAMPA TIMES, Aug. 24, 1974, at 10 (“Consumer fears over catalytic converters—antipollution devices that will appear on most of the 1975 cars—are ... contributing to the increased sales” of 1974 models); *id.* (quoting Dallas auto dealer’s statement that customers are “scared to death” of the “catalytic converter muffler”).

vehicle's purchase price. *Id.* at 24,180-81.⁹ The Agencies nonetheless claimed that consumers have an extraordinary preference for “upfront” vehicle cost savings over later fuel-cost savings. *E.g., id.* at 25,111, 25,210, 25,171. Their reasoning was flat wrong.

First, the Agencies had already accounted for the fact that purchase prices and fuel costs occur at different times (i.e., for the time value of money) by using a discount rate to convert future costs and benefits to their present value. 85 Fed. Reg. at 24,281; *see generally* JA_--[EPA-HQ-OAR-2015-0827-0803_28-29]. By later assigning even more weight to upfront costs, the Agencies “double-discounted” future cost savings, violating long-established agency practice and guidance, economic theory, and common sense. *See, e.g.,* EPA, Guidelines for Preparing Economic Analyses 6-1 (2010), <https://www.epa.gov/sites/production/files/2017-18/documents/ee-0568-50.pdf>.

Once discounted to present value, a dollar is a dollar and each has equal value to a consumer. The Agencies cannot conjure a consumer “super-preference” for lowering upfront costs. Indeed, the suggestion that consumers especially prefer lower upfront costs over fuel savings conflicts with the Agencies’ own statement “that *both* increased fuel costs and increased upfront car prices will appear as ‘losses,’ so it is not obvious why potential buyers would react to the prospects of these different forms of losses in different ways.” 85 Fed. Reg. at 24,611. The Agencies erred by adopting a view on

⁹ The Agencies suggested that the prior standards might impose certain “opportunity costs” on consumers, *see, e.g.,* 85 Fed. Reg. at 24177 n.10, such that their benefits are lower than those calculated. But the Agencies did not actually adopt, much less substantiate, this view. *See id.* at 24,587, 24,612–13, 25,099.

consumer valuation they themselves rejected elsewhere in the same rulemaking. *See Air Transport Ass'n of Am. v. DOT*, 119 F.3d 38, 43–44 (D.C. Cir. 1997).

Moreover, the Rollback's impact on "upfront" car prices will be negligible. The vast majority of consumers—85%, on the Agencies' account, 85 Fed. Reg. at 24,706—finance new-vehicle purchases through leases or installment loans. Those consumers do not experience changes in car prices entirely "upfront"; the costs are amortized over five or more years. *Id.* at 24,707 (average length of a new-vehicle loan is 68 months). In this very rulemaking, NHTSA projected that the prior standards paid for themselves in fuel savings over that duration. *Id.* at 25,183; *see also* 77 Fed. Reg. at 62,928 (finding that fuel savings "immediately outweigh the cost of a credit purchase ... even in the first month of ownership"); JA__-[EPA-HQ-OAR-2018-0283-7640_A-168_to_A-174]. NHTSA projected that, under the Rollback, the average consumer who finances her purchase would save only \$215 in upfront costs compared to the prior standards—just 3.3% of estimated upfront costs—and would lose money overall. 85 Fed. Reg. at 24,995.¹⁰

C. The Agencies Disregarded Fuel-Price Increases Under The Rollback

The Agencies ignored tens of billions of dollars in increased consumer costs they acknowledge the Rollback will cause by raising fuel prices due to higher demand. The

¹⁰ Upfront costs included a down payment of 11.7%, plus taxes and fees, which NHTSA estimated at \$6,323 under its rule and \$6,538 under the prior standards (\$215/\$6,538 = 3.3%). 85 Fed. Reg. at 25,176.

Agencies projected that the Rollback will cause 13 billion gallons (or 16%) in additional gasoline demand in 2050. See JA—[CO2_Ref_Annual_Societal_Effects_Summary_Report,<https://www.nhtsa.gov/corporate-average-fuel-economy/compliance-and-effects-modeling-system>], col. K, rows 608 & 3056. And they knew that this increase would drive up gasoline prices. 85 Fed. Reg. at 24,722–24 (rejecting contrary claims of commenters as “directly at odds with ... the economics of the world oil market”); see also *id.* at 24,214, 25,140 (“Future fuel prices are a critical input to the economic analysis ... because they determine the value of fuel savings both to new vehicle buyers and to society ...”). Yet the Agencies arbitrarily did not consider the ensuing additional consumer costs—roughly \$50 billion, on their account (which, as shown below, understates the effect). Cf. *Business Roundtable v. SEC*, 647 F.3d 1144, 1153 (D.C. Cir. 2011) (“In weighing the rule’s costs and benefits, ... the Commission arbitrarily ignored the effect of the final rule upon the total number of election contests.”).

The Agencies chose to ignore consumer costs from higher fuel prices in their cost-benefit analysis because they are largely “pecuniary” transfers from U.S. consumers to U.S. oil companies. 85 Fed. Reg. at 24,724. But even if that choice were supportable in the context of a cost-benefit analysis, the Agencies acted arbitrarily by entirely disregarding tens of billions of dollars of consumer costs while touting alleged financial benefits to those same consumers as a principal justification for the Rollback.

The Agencies compared fuel prices in two situations: a reference case assuming compliance with the prior standards, and a second case approximating the Rollback’s

effect. 85 Fed. Reg. at 24,591. They should have used the reference-case fuel prices to calculate fuel costs under the prior standards, and the Rollback-case fuel prices (which are higher due to increased demand) to calculate fuel costs under the Rollback. Instead, the Agencies used the higher fuel prices to calculate fuel costs in both cases. *Id.* at 24,593. Correcting this overt error increases net consumer gasoline expenditures under the Rollback by \$51.8 billion.¹¹ For example, it increases the average model year 2030 vehicle owner's lifetime net costs from the Rollback to \$815 (compared to \$678 before the error is corrected). *See id.* at 24,995.¹²

¹¹ This number reflects model year 1978–2050 light-duty vehicles for calendar years 2021–2089. The broad range of model years reflects the fact that *all* drivers will face higher gasoline prices under the Rollback. The figure is calculated by multiplying the projected fuel-price increase for each calendar year by projected total gasoline consumption in that year, *see* JA_–_[CO2_Ref_Annual_Societal_Effects_Report,<https://www.nhtsa.gov/corporate-average-fuel-economy/compliance-and-effects-modeling-system>], discounted to 2019 dollars. Gasoline prices are taken from EIA's *Annual Energy Outlook 2019*, Table: Petroleum and Other Liquids Prices, <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=12-AEO2019®ion=0-0&cases=ref2019&start=2017&end=2050&f=A&linechart=ref2019-d111618a.30-12-AEO2019&map=&ctype=linechart&sourcekey=0> (discussed at 85 Fed. Reg. at 24,591), for the prior standards, and from JA_–_[EPA-HQ-OAR-2018-0283-7678_NEMS_SAFE_rule_api_Output] for the Rollback standards. The Agencies assumed that fuel prices remain constant after 2050. *See* JA_–_[central_analysis_parameters_ref,<https://www.nhtsa.gov/corporate-average-fuel-economy/compliance-and-effects-modeling-system>], Fuel Prices tab, col. C, rows 82–131.

¹² These figures reflect the method described in note 11, *supra*, except that only model year 2030 vehicles are included; annual costs are discounted to 2030 (the purchase year, consistent with the Agencies' approach); and total cost is divided by the number of model year 2030 vehicles sold. JA_–_[consumer_costs_report,<https://www.nhtsa.gov/corporate-average-fuel-economy/compliance-and-effects-modeling-system>], col H, row 121.

Even these figures likely underestimate the Rollback's consumer costs because the Agencies further erred in quantifying its effect on fuel prices. Without asserting that the Rollback will reduce electric-vehicle battery costs, the Agencies assumed lower electric-vehicle battery costs in the Rollback case than in the reference case. 85 Fed. Reg. at 24,591. That unsupported assumption inflated electric-vehicle penetration, and thereby depressed modeled gasoline demand, under the Rollback; the inflated levels of electric vehicles offset a large portion of the demand increase caused by weakening standards. The Agencies' fuel-price modeling consequently showed the Rollback increasing gasoline demand by a maximum of 6.5%, far less than the 16% increase their central analysis projected to occur in 2050. JA_--[CO2_Ref_Annual_Societal_Effects_Summary_Report,<https://www.nhtsa.gov/corporate-average-fuel-economy/compliance-and-effects-modeling-system>].¹³

The Agencies found that weakening the standards would increase fuel prices by only up to 2%, an effect they describe as “small.” 85 Fed. Reg. at 24,724. But even this level of increase will result in massive consumer costs when multiplied by the enormous

¹³ The 6.5% figure is calculated by subtracting gasoline consumption in the EIA 2019 reference case from gasoline consumption in the Rollback case. *Compare* EIA, *Annual Energy Outlook 2019*, Reference Case Table, Energy Use: Transportation: Motor Gasoline, <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=2-AEO2019®ion=1-0&cases=ref2019&start=2017&end=2050&f=A&linechart=ref2019-d111618a.58-2-AEO2019.1-0~&map=ref2019-d111618a.5-2-AEO2019.1-0&ctype=linechart&sourcekey=0>, with JA_[EPA-HQ-OAR-2018-0283-7678_NEMS_SAFE_rule_api_Output], line 94. A 6.5% increase in demand occurs in 2034.

amount of fuel consumed under the Rollback by drivers of all vehicles. More importantly, had the Agencies used the gasoline demand increases they projected the Rollback would *actually* cause—up to 16%—the fuel-price increases and accompanying consumer costs would have been much larger.

In sum, the Agencies arbitrarily underestimated the Rollback’s consumer costs in several respects. Whether \$51.8 billion or a much higher amount, the Agencies irrationally ignored this enormous consumer cost despite justifying the Rollback based on consumer impacts.

III. THE AGENCIES’ ANALYSIS OF THE ROLLOBACK’S COSTS AND BENEFITS CONTAINED BLATANT AND SIGNIFICANT ERRORS

Even apart from the legal and analytical defects described above and in the State and Local Government Petitioners’ brief, the Rollback’s overall cost-benefit analysis was filled with clear-cut, undeniable, and consequential data and computational errors—i.e., mistakes—that undercut the Agencies’ justifications for their rules.

The Agencies initially proposed to freeze their standards at model year 2020 levels, “in part, because it maximize[d] net benefits compared to the other alternatives analyzed.” 83 Fed. Reg. 42,986, 42,997 (Aug. 24, 2018). But those purported benefits (\$141-201 billion) stemmed largely from the Agencies’ astonishing projection that weakening standards would reduce the size of the fleet and, as a result, reduce driving nationally by hundreds of billions of miles—allegedly averting numerous traffic accidents, fatalities, and other driving-related costs. The Agencies abandoned that rationale

after commenters exposed its many flaws. But that negated the Rollback's concomitant "benefits," resulting in rules whose net societal benefits, even under the Agencies' analysis, were "directionally uncertain," 85 Fed. Reg. at 25,099, because they "straddle[d] zero," *id.* at 24,176.

The Agencies' conclusion of directional uncertainty in the cost-benefit analysis was central to their choice of standards. *See, e.g.*, 85 Fed. Reg. at 24,279, 25,120, 25,131. Because costs and benefits seemed to be a wash, the Agencies felt free to prioritize reducing "up-front" consumer costs and "immediate" economic costs over other goals. *See, e.g., id.* at 25,120, 25,185. We have explained the legal problems with that prioritization elsewhere, but, in any event, the Agencies' cost-benefit calculations were flat wrong. Fixing a handful of blatant computational errors reveals that the Rollback is massively detrimental to society and accordingly eliminates an important premise of the Agencies' justifications for their rules.

In particular, the Agencies overstated the monetary value of reducing traffic congestion by almost \$30 billion. They made computer coding mistakes in analyzing a key compliance technology and automakers' use of credits, which significantly inflated the projected compliance costs of the prior standards. The Agencies also clearly underestimated the Rollback's fuel-consumption and emissions impacts. Fixing these clear-cut errors alone shows that the Rollback does not have net benefits that "straddle zero"; it costs society tens of billions of dollars.

A. The Agencies’ “Congestion Benefits” Calculations Contained Multiple, Massive Errors

Because the Rollback reduces new vehicles’ fuel efficiency, it increases the cost of driving. *See* 85 Fed. Reg. at 24,215. The Agencies expect car owners to respond by reducing how much they drive, thus reducing traffic congestion and saving drivers’ time. The value assigned to these “congestion benefits” constitutes \$60.2 billion in putative benefits of EPA’s rule, or roughly 20% of overall purported benefits. *See id.* at 24,201, 24,203, 24,205. The Agencies’ underlying calculations are plainly wrong and vastly inflate the Rollback’s congestion benefits.

The Agencies undertook to calculate congestion benefits by multiplying the projected reduction in miles driven by an estimate of the per-mile marginal cost of congestion. They derived the latter value from a 1997 Highway Cost Allocation Study by the Federal Highway Administration (1997 Study), with three variables “updated”: the value of vehicle occupants’ time, the number of occupants per vehicle, and the traffic volume per mile of highway. 85 Fed. Reg. at 24,736–37 & nn.1934 & 1939–41. These changes increased the 1997 estimate of per-mile marginal congestion costs by 153%. *Compare* JA_[2018_NPRM_Central_Analysis_Parameters_Ref,<https://www.nhtsa.gov/corporate-average-fuel-economy/compliance-and-effects-modeling-system>] (Economic Values tab, cols. B–D, row 32), *with* JA__[Central_Analysis_Parameters_Ref,[28](https://www.nhtsa.gov/corporate-average-fuel-economy/compliance-and-</p></div><div data-bbox=)

effects-modeling-system] (Economic Values tab, cols. B–E, row 41). The Agencies committed four serious errors in modifying these values.

First, in calculating the value of time lost to congestion, the Agencies failed to adjust for inflation. The Agencies divided \$16.10 (the estimated value of 2017 travelers' time in 2017 dollars) by \$8.90 (the estimated value of 1997 travelers' time in 1995 dollars), yielding an 82% increase in the value of time lost in traffic since the 1997 Study. 85 Fed. Reg. at 24,737 n.1941 (citing Department of Transportation guidance documents). This calculation was obviously wrong because it failed to use inflation-adjusted (or “constant”) dollars for comparisons across time. *See* Office of Mgmt. & Budget, Exec. Office of the President, Circular A-94, at 8 (1992) (observing that constant dollars are needed for “[l]ogical consistency”). Adjusting the 1997 and 2017 travel-time values to reflect 2018 dollars using the Agencies' inflation calculator, *see* JA_[EPA-HQ-OAR-2018-0283-7671_1025] n.1991, reveals that the value of lost time increased only 21% between 1997 and 2017—only one-fourth the 82% increase the Agencies claimed.

Second, the Agencies miscalculated the increase in vehicle traffic between 1997 and 2017. Citing Federal Highway Administration statistics, the Agencies asserted that “traffic volumes, as measured by the annual number of vehicle-miles traveled per lane-mile of roads and highways nationwide, rose by 53 percent” in that period. 85 at 24,737

n.1939. But those statistics plainly show that traffic volumes increased by only 16% during that period.¹⁴

The Agencies seem to have compared apples (vehicle miles for *passenger cars* per interstate lane miles in 1997) and oranges (vehicle miles for *short-wheelbase light duty vehicles* per interstate lane miles in 2017). That calculation was doubly flawed. First, the Agencies directly compared a 1997 figure for passenger cars to a 2017 figure for short wheel-base light-duty vehicles, which includes passenger cars *and* some vans and sport-utility vehicles. Second, as the Agencies recognized, passengers experience congestion on *all* roads, not just interstates, so the calculation should have included traffic on all roads. 85 Fed. Reg. at 24,737 & n.1939. The Agencies offered no reason for calculating marginal congestion costs solely by reference to cherry-picked subsets of vehicles and roads.

Third, the Agencies miscalculated vehicle occupancy. They asserted that vehicle occupancy rose by 18% from 1995 to 2017, citing data from the Federal Highway Administration's Nationwide Personal Transportation Surveys. 85 Fed. Reg. at 24,737

¹⁴ This percentage is calculated by subtracting the ratio of “total urban and rural” vehicle miles (Table VM-1) to all highway lane-miles (Table HM-46) in 1997 from the same ratio for 2017, and then dividing by the 1997 ratio. *See* Fed. Highway Admin., *Highway Statistics 2017*, <https://www.fhwa.dot.gov/policyinformation/statistics/2017/>; Fed. Highway Admin., *Highway Statistics 1997*, <https://www.fhwa.dot.gov/ohim/hs98/roads.htm>. The Agencies cited the 1998 and 2018 statistics for this 1997 and 2017 data, 85 Fed. Reg. 24,737 n.1939, but that appears to have been a mistake, as 1997 and 2017 land-mile data are reported only in the Federal Highway Administration's Highway Statistics for those years. To correct the error, we used the 1997 and 2017 statistics, which enabled us to calculate traffic volumes for those years, as the Agencies claimed to have done. The results are substantially the same if 1998 and 2018 statistics are used.

n.1941. If that were true, each vehicle slowed by congestion would impose greater overall lost-time costs. But the Agencies' figures are wrong. To calculate occupancy changes, the Agencies should have compared, for 1995 and 2017, the ratio of (1) total person-miles in privately owned or operated vehicles for individuals 16 and older, to (2) total miles traveled by the same privately owned or operated vehicles. That would yield an occupancy decrease of 3% using the "online table designer" the Rollback cites. 85 Fed. Reg. at 24,737 n.1941. The Federal Highway Administration's own analysis and summary of its data explains that "vehicle occupancy estimates, measured as person miles per vehicle mile, seems to have stayed about the same" and that "[w]hile there are small nominal differences between the 2017 and earlier estimates, these differences are all within the margins of error." Fed. Highway Admin., *Summary of Travel Trends: 2017 National Household Survey*, https://www.fhwa.dot.gov/policyinformation/documents/2017_nhts_summary_travel_trends.pdf. It is unclear how the Agencies calculated an 18% occupancy increase, as they did not show their work—an arbitrary and capricious omission in its own right—but a comparison of the documents released by the Agencies with the aforementioned table designer reveals at least one obvious mistake: The Agencies compared occupancy of vehicles in 2017 with occupancy for all modes of transit (including walking, cycling, and flying) in 1995. JA_-_ [NHTSA_Materials_Attached_to_Littleton_Letter_Filed_01.14.21].

Fourth, the Agencies mistakenly applied the higher marginal congestion cost developed for passenger cars to vans and sport-utility vehicles instead of the lower marginal congestion cost that the 1997 Study applies to vans and sport-utility vehicles. If the 1997 Study is to accurately forecast congestion costs in 2020, the Agencies must carry forward its key premises, including that different vehicle types produce different marginal congestion costs according to their usage. *See* 85 Fed. Reg. at 24,736. But the Agencies applied the congestion costs for cars to vans and sport-utility vehicles, which the 1997 Study defined as “trucks” for this purpose. JA_, _[Fed._Highway_Admin.,1997FederalHighwayCostAllocationStudy_tbls._I-1,V-23,<https://www.fhwa.dot.gov/policy/hcas/final/toc.cfm>].

The aggregate impact of these four mistakes was enormous. Correcting them reduces the Rollback’s congestion benefits by more than \$27 billion at a 3% discount rate, nearly half the congestion benefits claimed by the Agencies, and reduces total net benefits by \$17.3–27.6 billion—itsself enough to render the Rollback net costly under a discount rate of either 3% or 7%.¹⁵

¹⁵ The range \$17.3–27.6 billion expresses the sum of congestion-related errors calculated under EPA’s rule and NHTSA’s rule, respectively, using 3% and 7% discount rates, and the same approach is used in reporting the effects of the other errors described below. Each rule is clearly net costly for society irrespective of the discount rate. The two rules’ estimated impacts diverge for various reasons, including the standards’ differing scope and statutory charges (e.g., only EPA’s standards cover air conditioning refrigerants, and NHTSA cannot consider automakers’ use of compliance credits).

B. Other Blatant Errors Undercut The Agencies' Cost-Benefit Analysis

The Agencies committed many other plain errors that skewed the cost-benefit analysis in favor of the Rollback, including the following:

- ◆ The Agencies inadvertently excluded certain high-compression-ratio engines from their analysis of compliance costs. State Br. 63–70. Contrary to the Agencies' explanation of how their modeling should work, the model blocked application of high-compression-ratio technologies, which are highly cost-effective, on 40% of the vehicles that the Agencies stated should be allowed to deploy them. This error exaggerated the apparent costs of the prior standards and inflated the Rollback's net benefits by \$2.8–6.0 billion.¹⁶
- ◆ The Agencies' modeling mistakenly blocked automakers from utilizing 27% of their banked credits for compliance with EPA's standards. *See* State Br. 75–76. Contrary to the Agencies' explanation of how credits could be used, the model disallowed automakers from using credits earned in model year 2016. This error exaggerated the apparent costs of the prior standards and inflated the net benefits of EPA's rule by \$5.3–7.1 billion.¹⁷

¹⁶ To calculate this error's effect, we ran NHTSA's Volpe Model after removing the hard-coded technology blocks from the engines identified by State and Local Government Petitioners (Br. 64–65) in model input file `market_ref_proper_hcr.xlsx` (JA__).

¹⁷ To calculate this error's effect, we changed lines 157-166, 288, and 302 of the file `Volpe.Cafe.IO.InputParsers.XIMarketDataParser.cs` (JA__) to reflect a credit-bank final year of 2016, not 2015 (e.g., `md.BankedCO2CreditsMaxYear=2016`).

- ◆ The Agencies understated the increase in fuel consumption from the Rollback by not accounting for gasoline's ethanol content. In a reversal from EPA's 2016 Technical Assessment Report, *see* JA_[EPA-HQ-OAR-2015-0827-0926_10-1], the Agencies ignored that retail gasoline contains 10% ethanol, which reduces real-world fuel efficiency because ethanol has 35% less energy than gasoline. Accounting for ethanol content lowers the fuel efficiency of the modeled fleet, which further increases gasoline consumption and emissions under the Rollback. The error inflated the Rollback's net benefits by \$3.5–6.0 billion.¹⁸
- ◆ The Agencies undervalued harms from additional emissions under the Rollback by erroneously monetizing both refinery pollution and power-plant pollution using refinery harm values, even though power-plant pollution produces only about

¹⁸ To calculate this error's effect, we multiplied the Rollback's impacts on annual retail fuel costs and fuel-tax revenues (which are proportional to fuel consumption) by 1.039—the ratio of the Agencies' 80% conversion factor between tested and on-road fuel economy, 85 Fed. Reg. at 24281 n.343, to the previously used 77% conversion factor that accounts for ethanol's energy content, JA_[EPA-HQ-OAR-2015-0827-0926_10-1]. We then deducted fuel taxes from fuel costs, consistent with the Agencies' approach. *See* JA_[CO2_Ref_Annual_Societal_Effects_Report,<https://www.nhtsa.gov/corporate-average-fuel-economy/compliance-and-effects-modeling-system>], cols. L–M.

half as much health damage. *See supra*, Part I.B.2. This error reduced the Rollback's pollution impacts and inflated its net benefits by \$2.2–6.6 billion.

C. The Rollback's Flawed Cost-Benefit Analysis Renders It Arbitrary And Capricious

The effects of the errors discussed in this Part III on overall costs and benefits are summarized in the table on the next page, with figures in billions of current dollars.

| | NHTSA fuel-economy program | | EPA GHG program | |
|--|----------------------------|------------------|------------------|------------------|
| | 3% discount rate | 7% discount rate | 3% discount rate | 7% discount rate |
| Agencies' claimed net benefits | -13.1 | 16.1 | -22.0 | 6.4 |
| Effect of correcting the errors: | | | | |
| <i>Congestion errors</i> | -27.1 | -17.3 | -27.6 | -17.4 |
| <i>High Compression Ratio error</i> | -6.0 | -5.0 | -2.9 | -2.8 |
| <i>Model Year 2016 Credit Bank error</i> | * | * | -7.1 | -5.3 |
| <i>Ethanol error</i> | -6.0 | -3.7 | -5.7 | -3.5 |
| <i>Power-plan harm values error</i> | -6.6 | -3.5 | -3.9 | -2.2 |
| Sum of error effects [†] | -45.7 | -29.5 | -47.2 | -31.2 |
| Revised net benefits[†] | -58.8 | -13.4 | -69.2 | -24.8 |

* Because NHTSA's modeling for its standard-setting excluded use of credits after 2020, the credit-bank error did not affect the analysis of fuel-economy standards.

† Modeling interactions among different errors could make their combined effect somewhat different than the sum of individual effects. Regardless, correcting the congestion-cost errors alone reveals that the Rollback is net costly.

As the foregoing table shows, correcting the errors reveals that the net economic effects of the Rollback are unambiguously negative, causing tens of billions of dollars in net harms regardless of whether present values are calculated using a 3% or 7% discount rate. Because the Rollback was premised on a claim of rough equivalence between societal costs and benefits, these basic computational errors are fatal. *See Nat'l Ass'n of Home Builders v. EPA*, 682 F.3d 1032, 1040 (D.C. Cir. 2012) (“[W]hen an agency decides to rely on a cost-benefit analysis as part of its rulemaking, a serious flaw undermining that analysis can render the rule unreasonable.”). This Court generally grants considerable deference to agencies’ technical judgments concerning regulatory costs and benefits, but it vacates actions resting on unambiguously flawed cost-benefit analyses. *See Business Roundtable*, 647 F.3d at 1148-49, 1155; *City of Portland v. EPA*, 507 F.3d 706, 713 (D.C. Cir. 2007); *Owner-Operator Indep. Drivers Ass’n v. FMCSA*, 494 F.3d 188, 206 (D.C. Cir. 2007); *see also* Cass Sunstein, THE COST-BENEFIT REVOLUTION 157–59 (2018) (discussing courts’ duty to scrutinize cost-benefit analyses for “funny numbers”).

The Agencies did not state that the Rollback would be justified if it cost society tens of billions of dollars. Yet that is the result after correcting the Agencies’ many analytical errors. A policy with costs far exceeding benefits—that does “significantly more harm than good” *Michigan*, 576 U.S. at 752–53—at minimum requires substantial justification. Because the Agencies did not attempt to justify a net costly policy change—one that also will vastly increase pollution and fuel consumption, counter to the Agencies’ central statutory objectives—the Rollback should be vacated.

IV. NHTSA'S RELIANCE ON DIFFERENT FUEL-ECONOMY PROJECTIONS FOR FLEETWIDE STANDARDS AND MINIMUM DOMESTIC PASSENGER-CAR STANDARDS WAS ARBITRARY AND UNLAWFUL

EPCA requires that domestically manufactured passenger cars meet a minimum average fuel economy of not less than “92 percent of the average fuel economy projected by [NHTSA] for the combined domestic and non-domestic passenger automobile fleets..., which projection shall be published in the Federal Register when the standard for that model year is promulgated.” 49 U.S.C. § 32902(b)(4)(B). NHTSA published *two* projections of average fuel economy for the combined passenger car fleet—one as part of the Agencies’ analysis of the fleetwide fuel-economy and GHG standards; and a second, more lenient, “adjusted” projection for setting the minimum domestic-car standard for average fuel economy.

NHTSA defended using an adjusted projection for the domestic-car standard by asserting that its projections of average fuel economy in prior rulemakings proved to be somewhat too high. Those prior projections underestimated demand for larger passenger cars, which have lower fuel economy, meaning that the minimum domestic standards were 1.9% more stringent than if they had been calculated based on subsequent actual sales. 85 Fed. Reg. at 25,126–27. Consequently, NHTSA “offset” its actual projection of average passenger-car fuel economy by 1.9% and used the adjusted projection to set minimum domestic passenger-car standards. *Id.* at 25,217.

The inconsistent projections are arbitrary, capricious, and contrary to law. NHTSA either believes the projections underlying its core analysis of the fleetwide standards, or it does not. NHTSA cannot rely on one projection to justify and project costs and benefits of its fleetwide standards and then rely on another, inconsistent projection to support the statutorily required minimum domestic passenger-car standard. *See Gas Appliance Mfrs. Ass'n v. DOE*, 998 F.2d 1041, 1048 (D.C. Cir. 1993) (“[The agency] cannot use one set of conditions for the standard itself, and another, more favorable set, to estimate the proposed compliance method’s likely achievements for cost/benefit purposes.”). Had NHTSA used the “adjusted” fuel economy projection in its primary analysis, it would have reduced the net benefits of NHTSA’s Rollback by \$3.5 billion, as the less fuel-efficient fleet would mean higher fuel costs and higher emissions.¹⁹

If NHTSA’s adjusted projection is correct, the Agencies’ fleetwide standards rest on a flawed analysis; if the unadjusted projection is correct, the minimum domestic-car standard violates EPCA. Because this Court cannot make that choice in the first instance, it must set aside both standards.

¹⁹ To calculate this figure, we increased the footprint of all passenger-car models by 2.07%, the value that corresponds to a decrease in average fuel economy of 1.9% (from 47.7 miles per gallon to 46.8 miles per gallon in 2026), *see* 85 Fed. Reg. at 24,189, 25,128, and ran the Volpe Model with the larger footprints.

V. THE AGENCIES VIOLATED OTHER ENVIRONMENTAL STATUTES

A. The Agencies Violated The Endangered Species Act

The Endangered Species Act (“ESA”) assigns “endangered species priority over the ‘primary missions’ of federal agencies” in order to “halt and reverse the trend toward species extinction, whatever the cost.” *TVA v. Hill*, 437 U.S. 153, 184-85 (1978). The ESA imposes procedural and substantive duties on all federal agencies regarding species listed as endangered or threatened by the U.S. Fish and Wildlife Service or National Marine Fisheries Service (collectively, the “Services”), to “insure” that federal actions are “not likely to jeopardize the continued existence” of listed species or result in the “destruction or adverse modification” of their critical habitat. 16 U.S.C. § 1536(a)(2).

Section 7 of the ESA directs agencies to consult with the Services before carrying out “any action” that may “jeopardize” listed species or destroy or harm their critical habitat. 16 U.S.C. § 1536(a)(2). Consultation is required unless the acting agency finds, using “the best scientific and commercial data available,” *id.*, that its action will have “no effect” on listed species or habitat. *Am. Fuel & Petrochem. Mfrs. v. EPA (AFPM)*, 937 F.3d 559, 598 (D.C. Cir. 2019); *see also* 50 C.F.R. § 402.14(a).

Any discretionary action that “may affect” endangered or threatened species or their habitat requires consultation. 50 C.F.R. §§ 402.03, 402.14(a). The “may affect” bar is “low,” *Nat’l Parks Conservation Ass’n v. Jewell*, 62 F.Supp.3d 7, 12–13 (D.D.C. 2014), and includes “[a]ny possible effect,” 51 Fed. Reg. 19,926, 19,949–50 (June 3, 1986); *see*

also *Karuk Tribe v. USFS*, 681 F.3d 1006, 1027 (9th Cir. 2012) (en banc) (requiring consultation for “actions that have any chance of affecting listed species or critical habitat”).

Although the record establishes that the Rollback will adversely affect a range of listed species and their habitat, the Agencies neither consulted with the Services, 85 Fed. Reg. at 25,252; *see* Public Interest Organization Petitioners’ Addendum (Add.) A-100 to A-101, nor validly found that the Rollback will have “no effect” on protected species or habitat. Instead, the Agencies claimed to “lack sufficient discretion” under the Clean Air Act and EPCA to trigger the duty to consult, 85 Fed. Reg. at 25,255–56, and claimed that “there is simply no way to ‘connect the dots’” between the Rollback and effects on protected species and habitat, *id.* at 25,254. Both claims are invalid.

1. The Rollback was a discretionary action requiring ESA consultation

The ESA requires consultation for “all actions in which there is discretionary Federal involvement or control.” 50 C.F.R. § 402.03. “[I]f an agency has *any* statutory discretion over the action in question, that agency has the authority, and thus the responsibility, to comply with the ESA.” *Am. Rivers v. U.S. Army Corps of Eng’rs*, 271 F.Supp.2d 230, 251 (D.D.C. 2003) (emphasis added); *see also AFPM*, 937 F.3d at 598. The Agencies had sufficient statutory discretion to trigger that responsibility. Indeed, the Agencies professed to have *vast* discretion in setting GHG and fuel-economy standards. *See* 85 Fed. Reg. at 24,177 (NHTSA); *id.* at 24,222 (EPA); *see also Ctr. for Biological Diversity v. NHTSA (CBD)*, 538 F.3d 1172, 1212–14 (9th Cir. 2008). Yet they conveniently disclaimed discretion when it came to their ESA duties. The Clean Air Act and

EPCA vest EPA and NHTSA, respectively, with sufficient discretion to require consultation for standards that may affect listed species or critical habitat.

2. Any uncertainty regarding the Rollback’s effects on listed species and critical habitat did not relieve the Agencies of their consultation duties

The Agencies’ purported inability to “connect the dots” between the Rollback and its effects on listed species and critical habitat did not exempt the Agencies from their duties to consult with the Services. Rather, it showed why Congress required agencies like EPA and NHTSA to consult with the Services--the experts in protection of endangered species. Claiming that an action’s impacts are uncertain is not the same as determining that the action will have “no effect” on listed species or critical habitat. *AFPM*, 937 F.3d at 598 (“EPA[’s] conclu[sion] that it is impossible to know whether the ... Rule will affect listed species or critical habitat ... is not the same as determining that the 2018 Rule ‘will not’ affect them.”). Unless an agency can conclusively find that its action will *not* affect listed species or habitat, *see* 50 C.F.R. § 402.14(b), the ESA calls for formal or informal “assistance of” the Services, which possess the requisite biological expertise to determine the effects of federal actions (including national rules like the Rollback) on listed species and critical habitat, *see* 16 U.S.C. § 1536(a)(2), (c)(1); 50 C.F.R. §§ 402.13, 402.14. The Agencies’ unilateral, non-expert determination that it is “impossible to know” the Rollback’s effects on listed species or critical habitat is not a “no effect” determination.

3. The record contradicted the Agencies' claim of uncertainty

In any event, the record clearly shows the Rollback will cause massive emissions increases compared to the prior standards and that those increases “may affect” listed species and critical habitat. *See AFPM*, 937 F.3d at 597; 50 C.F.R. § 402.14(a).²⁰

The Services recognize climate change as a current or potential threat for more than 70% of all species listed between 2012 and 2015. JA_[NHTSA-2018-0067-12378_25]. The Rollback will cause almost one billion tons of additional carbon dioxide emissions. *See supra*, Part I.A. These staggering emissions and resulting climate-change impacts are directly linked to harm to endangered species and habitat.

For example, the Rollback will further jeopardize the polar bear, listed as “threatened” due to climate change. *See* JA__[NHTSA-2018-0067-12378_12-16], JA__[NHTSA-2018-0067-12378_Attachment_Amstrup_GHG_Mitigation_Sea_Ice_Loss]; *see also* Add. A-11 to A-28. Contrary to the Agencies' assertions that the causal link

²⁰ The record is replete with examples of ways in which the Rollback will harm listed species. *See, eg.*, JA__[EPA-HQ-OAR-2018-0283-5078] and references therein (JA__[EPA-HQ-OAR-2018-0283-4133], __[EPA-HQ-OAR-2018-0283-6170], __[EPA-HQ-OAR-2018-0283-6474]; JA__[EPA-HQ-OAR-2018-0283-5075-15-17] and references therein (JA__[EPA-HQ-OAR-2018-0283-4398], __[EPA-HQ-OAR-2018-0283-6585], __[EPA-HQ-OAR-2018-0283-6851], __[EPA-HQ-OAR-2018-0283-6171], __[EPA-HQ-OAR-2018-0283-6172], __[EPA-HQ-OAR-2018-0283-6177], __[EPA-HQ-OAR-2018-0283-5705], __[EPA-HQ-OAR-2018-0283-6176]); and JA__[NHTSA-2018-0067-12378] and references therein (JA__[NHTSA-2018-0067-12378], __[NHTSA-2018-0067-12379], __[NHTSA-2018-0067-12380], __[NHTSA-2018-0067-12381], __[NHTSA-2018-0067-12382], __[NHTSA-2018-0067-12383], __[NHTSA-2018-0067-12384], __[NHTSA-2018-0067-12396]). Our citations to JA__[NHTSA-2018-0067-12378] incorporate the references cited therein.

between the Rollback's carbon dioxide emissions and effects on polar bears is too speculative, 85 Fed. Reg. at 25,253, the loss of sea ice—on which polar bears rely to hunt—and shorter sea-ice seasons are directly linked to specific increases in GHG emissions. *E.g.*, JA__-[NHTSA-2018-0067-12380_Attachment_Notz2016]; Add. A-25 to A-27. For instance, the increased carbon dioxide emissions of 867–923 million tons through model year 2029 vehicles alone are projected to reduce the bear's summer sea-ice habitat by 1,004–1,069 square miles. JA__-[NHTSA-2018-0067-12380_Notz2016]; Add. A-445 (calculations).²¹

The Agencies admit that the Rollback's increase in GHG emissions will harm ecosystems, including by fueling sea-level rise, acidifying oceans, and elevating temperatures. 85 Fed. Reg. at 25,163; JA__-[NHTSA-2017-0069-0738_5-40_to_5-56]. Even small increases in ocean acidity or temperature injure listed species, like corals in the Florida Keys, as severe bleaching events have increased five-fold in the last few decades. JA__-[NHTSA-2018-0067-12378_16-23]; JA__-[NHTSA-2018-0067-12396_Attachment_Hughes2016_1-2]; JA__-[NHTSA-2018-0067-12384_Attachment_Veron2009]. Increasing temperatures and sea-level rise also threaten species that nest or live on coasts, including loggerhead sea turtles in Florida and piping plovers on Massachusetts

²¹ Using the Agencies' projections, the Rollback will increase carbon dioxide emissions by 7.8 billion tons through 2100 (JA__-[NHTSA-2017-0069-0738_5-34_to_5-35]), leading to a loss of at least 9,035 square miles of summer sea-ice habitat and further shortening their hunting season. JA__-[NHTSA-2018-0067-12378_13-15], __-[NHTSA-2018-0067-12380_Attachment_Notz2016]; *see also* Add. A-26 to A-27, A-445 to A-446 (explaining calculations).

beaches being “swallow[ed]” by rising seas. *Massachusetts*, 549 U.S. at 522-23; *see also* JA_-_ [NHTSA-2018-0067-12378_23-25], __-_[NHTSA-2018-0067-12382_Attachment_Reece2013].

The Agencies further project that the Rollback will increase emissions of sulfur and nitrogen oxides, 85 Fed. Reg. at 25,057-60, 25,064-65, and emissions are likely to be higher than the Agencies project, *see supra*, Part I.B. Sulfur and nitrogen pollution cause downwind acid deposition, creating inhospitable conditions for many plants and animals. 85 Fed. Reg. at 24,871; JA_-_ [NHTSA-2018-0067-12378_31-37]. Sulfur pollution, for example, causes increased acidification of forest ecosystems, like those in Virginia, where the last Shenandoah salamanders live. JA_ [NHTSA-2018-0067-12378_36], __-_[NHTSA-2018-0067-12383_Attachment_USEPA2017IRP_2-3_to_2-5]. Deposition of atmospheric nitrogen from tailpipes and refineries reduces abundance of native plants that serve as habitats and food sources for myriad listed species, including desert tortoises. JA_-_ [NHTSA-2018-0067-12383_31-34]; *see also* Add. A-47 to A-61. Tailpipe emissions of nitrogen oxides and ammonia are directly tied to decreases in endangered Bay checkerspot butterfly populations, JA_, __-_[NHTSA-2018-0067-12383_6,31-32], __-_[NHTSA-2018-0067-12384_Attachment_Weiss]; *see also* Add. A-331 to A-334.

Accordingly, the Agencies’ failure to consult with the Services despite ample evidence of harm to listed species and critical habitat was both unlawful and prejudicial.

B. NHTSA Violated The National Environmental Policy Act

NEPA requires NHTSA to thoroughly assess the environmental consequences of a proposed action to ensure a “fully informed and well-considered decision.” *Theodore Roosevelt Conservation P’ship v. Salazar (TRCP)*, 661 F.3d 66, 68 (D.C. Cir. 2011). The agency violated NEPA in two ways. First, NHTSA considered only options that would weaken its prior fuel-economy standard for model year 2021, excluding alternatives that would strengthen that standard and reduce harmful environmental impacts. Second, when considering the cumulative impacts of its rule along with related actions, NHTSA ignored the substantial additional impacts of the Agencies’ recent actions invalidating state zero-emission-vehicle laws.

1. NHTSA did not adequately consider a reasonable range of action alternatives

NHTSA must “[r]igorously explore and objectively evaluate” the environmental impacts of not only its proposed action but also a reasonable range of alternatives. 40 C.F.R. § 1502.14(a) (2005), *modified by* 85 Fed. Reg. 43,304 (July 16, 2020)); *see also* 42 U.S.C. § 4332. The available alternatives here included increases, as well as decreases, in fuel-economy standards. Yet the most environmentally beneficial alternative NHTSA evaluated was the “no action” alternative, i.e., leaving existing model year 2021 standards intact and finalizing model year 2022–2025 augural standards. *See* State Br. 20. All

seven action alternatives NHTSA considered are undisputedly worse for the environment than that baseline. JA_[NHTSA-2017-0069-0738_at_2-4].²² NHTSA violated NEPA by “limit[ing] itself to only one end of the spectrum of possibilities,” *Oceana, Inc. v. Evans*, 384 F.Supp.2d 203, 240, *clarified by* 389 F.Supp.2d 4 (D.D.C. 2005), and not considering in detail any alternative that “would avoid or minimize adverse impacts” compared to the baseline, *TRCP*, 661 F.3d at 69 (quoting 40 C.F.R. § 1502.1).

“Consideration of more stringent fuel-economy standards that would *conserve more energy*” than the baseline existing standards “is clearly reasonably related to the purpose of [NHTSA’s] standards.” *CBD*, 538 F.3d at 1219. Though EPCA affords NHTSA a degree of discretion to balance the statutory factors to determine “maximum feasible” average fuel-economy standards, *see* 85 Fed. Reg. at 25,185 n.3002, EPCA’s “overarching goal [is] fuel conservation,” *CAS*, 793 F.2d at 1340; *accord* JA_[NHTSA-2017-0069-0738_at_1-4] n.26. NHTSA’s selection of reasonable alternatives must comport with that goal. *See Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 196 (D.C. Cir. 1991).

NHTSA asserted that more stringent standards necessarily would fall outside the “spectrum of possible standards NHTSA could determine was maximum feasible based on the different ways the agency could weigh EPCA’s four statutory factors.” 85 Fed. Reg. at 25,162; *see also* JA_[NHTSA-2017-0069-0738_S-2]. But NHTSA’s “hands are

²² Notably, each action alternative would increase criteria pollution, thus jeopardizing attainment of federal air quality standards, contrary to the Clean Air Act’s requirement that agencies avoid doing so. *See* 42 U.S.C. § 7506(c)(1). NHTSA failed to consider that risk. State Br. 38–40.

not tied.” *CBD*, 538 F.3d at 1212 (rejecting similar NHTSA attempt to evade NEPA); *see also Am. Oceans Campaign v. Daley*, 183 F.Supp.2d 1, 21 (D.D.C. 2000) (approach like NHTSA’s “subverts the very purpose of NEPA,” “to ensure that ... final decision-making will be informed by a full understanding of relevant environmental impacts”). NHTSA’s discretionary weighing of EPCA’s four statutory factors did not limit the range of action alternatives it had to consider. *CBD*, 538 F.3d at 1212–13, 1217–20.

Finally, NHTSA’s “initial screening exercise” in the “Alternatives Considered but Not Analyzed in Detail” section does not satisfy the duty to fully consider a more protective alternative. JA_–_[NHTSA-2017-0069-0738_2-9_to_2-10]; *see also* 85 Fed. Reg. at 24,258–62. NHTSA’s conclusion that a stronger alternative would not provide a “dramatic acceleration of energy and environmental benefits” was not supported by its environmental analysis. JA_[NHTSA-2017-0069-0738_at_2-10]. Robust development of a stronger alternative, rather than just a screening exercise, would have “inform[ed] both the public and the decisionmaker” by “sharply defining the issues and providing a clear basis for choice among options.” *Union Neighbors United, Inc. v. Jewell*, 831 F.3d 564, 577 (D.C. Cir. 2016); *see also* JA_[EPA-HQ-OAR-2018_0283-0664_S-51] (NHTSA’s prior standards informed by consideration that stronger alternative “would be an important contribution to reducing the risks associated with climate change”).

2. NHTSA did not adequately consider cumulative impacts

NHTSA unlawfully ignored the Rollback’s impacts in concert with the impacts of its own action—and that of EPA—invalidating state zero-emission-vehicle laws in

2019. *See* 84 Fed. Reg. 51,310 (Sept. 27, 2019). Although those state laws had reduced pollution above and beyond federal and state GHG standards and federal fuel-economy standards, NHTSA refused to analyze the impacts of the invalidation of the state laws in concert with the Rollback because that invalidation was “the subject of a separate final action.” JA_, __, __[NHTSA-2017-0069-0738_at_10-81,10-112,10-342].

NHTSA must analyze “the incremental impact of [its] action when added to other past, present, and reasonably foreseeable future actions.” 40 C.F.R. § 1508.7 (2005) (subsequently modified); 49 C.F.R. §§ 520.5(a), 520 att. 1, 3.a(2); *see also* *CBD*, 538 F.3d at 1216–17 (NHTSA required to analyze cumulative impacts of fuel-economy standards in light of other fuel-economy rulemakings). All the more so where (as here) actions were taken “concurrent[ly]” by the same agencies and had “cumulative or synergistic” effects. *Kleppe v. Sierra Club*, 427 U.S. 390, 410 (1976). Preempting state zero-emission-vehicle laws had cumulative effects when added to the Rollback, including reduced investment in zero-emission-vehicle technology and reduced deployment of zero-emission vehicles, and corresponding increases in vehicular emissions of GHGs and criteria pollutants. *See e.g.*, JA_-, __, __-[EPA-HQ-OAR-2018-0283-5054_67-69_294-302_307-309], __-[EPA-HQ-OAR-2018-0283-7623_6-7], __-[EPA-HQ-OAR-2018-0283-1060_pdf5-6].

CONCLUSION

The Rollback defied the clear intent of the Agencies' authorizing statutes, was arbitrary and capricious in myriad respects, and will greatly harm public health, the environment, and consumers. It should be vacated. *See Bhd. of Locomotive Eng'rs & Trainmen v. Fed. R.R. Admin.*, 972 F.3d 83, 117 (D.C. Cir. 2020) (vacatur is the “normal remedy” for “unsustainable agency action”).

Respectfully submitted,

/s/ Matthew Littleton

MATTHEW LITTLETON

SEAN H. DONAHUE

Donahue, Goldberg, Weaver & Littleton

1008 Pennsylvania Avenue SE

Washington, DC 20003

(202) 683-6895

matt@donahuegoldberg.com

VICKIE L. PATTON

PETER M. ZALZAL

ALICE HENDERSON

JIM DENNISON

Environmental Defense Fund

2060 Broadway, Suite 300

Boulder, CO 80302

(303) 447-7215

vpatton@edf.org

Counsel for Environmental Defense Fund

MAYA GOLDEN-KRASNER
KATHERINE HOFF
Center For Biological Diversity
660 South Figueroa Street, Suite 1000
Los Angeles, CA 90017
(213) 785-5402
mgoldenkrasner@biologicaldiversity.org

Counsel for Center For Biological Diversity

ARIEL SOLASKI
JON A. MUELLER
Chesapeake Bay Foundation, Inc.
6 Herndon Avenue
Annapolis, MD 21403
(443) 482-2171
asolaski@cbf.org

Counsel for Chesapeake Bay Foundation, Inc.

SHANA LAZEROW
Communities For A Better Environment
6325 Pacific Boulevard, Suite 300
Huntington Park, CA 90255
(323) 826-9771
slazerow@cbecal.org

*Counsel for Communities For A Better
Environment*

EMILY K. GREEN
Conservation Law Foundation
53 Exchange Street, Suite 200
Portland, ME 04102
(207) 210-6439
egreen@clf.org

Counsel for Conservation Law Foundation

MICHAEL LANDIS
The Center For Public Interest Research
1543 Wazee Street, Suite 400
Denver, CO 80202
(303) 573-5995 ext. 389
mlandis@publicinterestnetwork.org

Counsel for Environment America

ROBERT MICHAELS
ANN JAWORSKI
Environmental Law & Policy Center
35 East Wacker Drive, Suite 1600
Chicago, IL 60601
(312) 795-3713
rmichaels@elpc.org

*Counsel for Environmental Law & Policy
Center*

DAVID D. DONIGER
Natural Resources Defense Council
1152 15th Street NW, Suite 300
Washington, DC 20005
(202) 289-6868
ddoniger@nrdc.org

IAN FEIN
Natural Resources Defense Council
111 Sutter Street, 21st Floor
San Francisco, CA 94104
(415) 875-6100
ifein@nrdc.org

*Counsel for Natural Resources Defense
Council, Inc.*

JOANNE SPALDING
Sierra Club
2101 Webster Street, Suite 1300
Oakland, CA 94612
(415) 977-5725
joanne.spalding@sierraclub.org

PAUL CORT
REGINA HSU
Earthjustice
50 California Street, Suite 500
San Francisco, CA 94111
(415) 217-2077
pcort@earthjustice.org

VERA PARDEE
726 Euclid Avenue
Berkeley, CA 94708
(858) 717-1448
pardeelaw@gmail.com

Counsel for Sierra Club

SCOTT L. NELSON
Public Citizen Litigation Group
1600 20th Street NW
Washington, DC 20009
(202) 588-1000
snelson@citizen.org

*Counsel for Consumer Federation of America
and Public Citizen, Inc.*

TRAVIS ANNATOYN
Democracy Forward Foundation
1333 H Street NW
Washington, DC 20005
(202) 601-2483
tannatoyn@democracyforward.org

Counsel for Union Of Concerned Scientists

CERTIFICATE OF COMPLIANCE

This brief was prepared in 14-point Garamond font using Microsoft Word 365 (Nov. 2020 ed.), and it complies with the typeface and typestyle requirements of Federal Rule of Appellate Procedure 32(a). The brief contains 11,294 words and, in conjunction with the briefs filed by other Coordinating Petitioners, it complies with the type-volume limitations imposed by this Court's order of October 19, 2020. ECF No. 1867064.

/s/ Matthew Littleton

Matthew Littleton

CERTIFICATE OF SERVICE

I certify that on January 14, 2021, I electronically filed the foregoing brief using the Court's CM/ECF system. All 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 case participant:

Diane K. Taira
State of Hawaii
Department of the Attorney General
425 Queen Street
Honolulu, HI 96813
diane.k.tairi@hawaii.gov

/s/ Matthew Littleton
Matthew Littleton