

No. 19-1230

Consolidated with Nos. 19-1239, 19-1241, 19-1242, 19-1243,
19-1245, 19-1246, 19-1249, 20-1175, and 20-1178

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

UNION OF CONCERNED SCIENTISTS et al.,
Petitioners,

v.

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION,
Respondent,

COALITION FOR SUSTAINABLE AUTOMOTIVE REGULATION et al.,
Respondent-Intervenors.

JOINT APPENDIX (VOLUME 1)

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TABLE OF CONTENTS

AGENCY ACTIONS (VOLUME ONE)

EPA & NHTSA, Final Actions, <i>The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program</i> , 84 Federal Register 51,310 (September 27, 2019) [full document]	JA001
EPA & NHTSA, Proposed Actions, <i>The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks</i> , 83 Fed. Reg. 42,986 (Aug. 24, 2018) (excerpts) [pp. 42,986-43,000, 43,209-17, 43,232-53, 43,470-89]	JA055
EPA, Notice of Decision, <i>Grant of a Waiver of Clean Air Act Preemption for California's Advanced Clean Car Program</i> , 78 Fed. Reg. 2112 (Jan. 9, 2013) [full document]	JA121

AGENCY RECORD DOCUMENTS (VOLUME TWO)

Union of Concerned Scientists, <i>Rising Temperatures, Worsening Ozone Pollution</i> , EPA-HQ-OAR-2018-0283-5683 (June 2011) (excerpts) [pp. 1-3]	JA155
California Air Resources Board, <i>Staff Report: Initial Statement of Reasons for the "LEV III" Amendments to the California Emission Standards</i> , EPA-HQ-OAR-2012-0562-0011 (Dec. 7, 2011) (excerpts) [pp. ES-3-4, 75-79].....	JA160
California Air Resources Board, <i>Staff Report: Initial Statement of Reasons, Proposed Amendments to the Zero Emission Vehicle Program Regulations</i> , EPA-HQ-OAR-2012-0562-0008 (Dec. 7, 2011) (excerpts) [pp. ES-1-2, 72, 75-79]	JA168
California Air Resources Board, <i>Clean Air Act § 209(b) Waiver Support Document</i> , EPA-HQ-OAR-2012-0562-0004 (May 2012) (excerpts) [pp. 1-17, 22]	JA177
Comments of California Air Resources Board, EPA-HQ-OAR-2012-0562-0371 (Oct. 19, 2012) [full document]	JA195

Letter from California Air Resources Board, to Janet Cohen, EPA, EPA-HQ-OAR-2012-0562-0373 (Nov. 14, 2012) [full document].....	JA216
California Air Resources Board, <i>Resolution 12-35</i> , EPA-HQ-OAR-2012-0562-0374 (Nov. 15, 2012) (excerpts) [pp. 1, 4].....	JA231
Mann, Michael and Gleick, Peter, <i>Climate Change and California Drought in the 21st Century</i> , EPA-HQ-OAR-2018-0283-5682 (March 31, 2015) [full document]	JA233
California Air Resources Board, <i>California's Advanced Clean Cars Midterm Review</i> , EPA-HQ-OAR-2018-0283-0016 (Jan. 18, 2017) (excerpts) [pp. ES-6, ES-34].....	JA235
Frankson, R. et al., <i>2017: California State Climate Summary</i> , EPA-HQ-OAR-2018-0283-5683 (2017) [full document]	JA238
Office of Environmental Health Hazard Assessment, California Environmental Protection Agency, <i>Indicators of Climate Change in California</i> , EPA-HQ-OAR-2018-0283-5481 (May 2018) (excerpts) [pp. S1-S13, 98-103]	JA255
Lutsey, Nic and Slowik, Peter, <i>The Continued Transition to Electric Vehicles in U.S. Cities</i> , EPA-HQ-OAR-2018-0283-5456 (July 2018) (excerpts) [pp. 1-5, 15]	JA276
Bedsworth, Louise et al., <i>California's Fourth Climate Change Assessment: Statewide Summary Report</i> , EPA-HQ-OAR-2018-0283-5454 (Aug. 2018) (excerpts) [pp. 13]	JA283
Comments of South Coast Air Quality Management District, NHTSA-2017-0069-0497 (Sept. 21, 2018) (excerpts) [pp. 1-3].....	JA285
Comments of Boulder County Public Health, NHTSA-2017-0069-0499 (Sept. 24, 2018) [full document]	JA288
Comments of T. Lamm, E. N. Elkind, and D. A. Farber, EPA-HQ-OAR-2018-0283-2592 (Oct. 16, 2018) (excerpts) [pp. 2].....	JA294

Comments of South Coast Air Quality Management District, EPA-HQ-OAR-2018-0283-4124 (Oct. 25, 2018) (excerpts) [pp. 1-3]	JA296
Comments of Northeast States for Coordinated Air Use Management (NESCAUM), EPA-HQ-OAR-2018-0283-4163 (Oct. 25, 2018) (excerpts) [pp. 13-14].....	JA299
Comments of G. Dotson, Assistant Professor of Law, University of Oregon, EPA-HQ-OAR-2018-0283-4132 (Oct. 26, 2018) [App’x A].....	JA302
Comments of New York State Department of Environmental Conservation, NHTSA-2017-0069-0608 (Oct. 26, 2018) (excerpts) [Add. pp. 1-2]	JA326
Comments of California Air Resources Board, EPA-HQ-OAR-2018-0283-5054 (Oct. 26, 2018) (excerpts) [pp. 33-40, 43-48, 283-84, 287-302, 308, 341-42, 365-373, 406-07]	JA330
Comments of American Fuel & Petrochemical Manufacturers, EPA-HQ-OAR-2018-0283-5698 (Oct. 26, 2018) (excerpts) [pp. 17-18].....	JA377
Comments of State of California et al., EPA-HQ-OAR-2018-0283-5481 (Oct. 26, 2018) (excerpts) [pp. 130-35; App’x B, pp. 2-4]	JA380
Comments of Tesla, EPA-HQ-OAR-2018-0283-4186 (Oct. 26, 2018) (excerpts) [pp. 1, 9-14, 30]	JA391
Comments of National Coalition for Advanced Transportation, EPA-HQ-OAR-2018-0283-5067 (Oct. 26, 2018) (excerpts) [pp. 1-2, 9-19, 45-46, 55, 57]	JA399
Comments of Center for Biological Diversity et al., NHTSA-2018-0067-12000 (Oct. 26, 2018) (excerpts) [App’x A, pp. 101-02, 155, 161-67]	JA416

Comments of Attorneys General of California et al.,
NHTSA-2018-0067-12361 (Dec. 21, 2018) (excerpts)
[pp. 10-13]..... JA427

Northcott, Devon et al., *Impacts of Urban Carbon Dioxide Emissions on Sea-air
Flux and Ocean Acidification in Nearshore Waters*,
NHTSA-2018-0067-12411 (March 27, 2019) [full document] JA432

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 85 and 86

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Parts 531 and 533

[NHTSA–2018–0067; EPA–HQ–OAR–2018–0283; FRL 10000–45–OAR]

RIN 2127–AL76; 2060–AU09

The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program

AGENCY: Environmental Protection Agency and National Highway Traffic Safety Administration, Department of Transportation.

ACTION: Withdrawal of waiver; final rule.

SUMMARY: On August 24, 2018, the Environmental Protection Agency (EPA) and the Department of Transportation’s National Highway Traffic Safety Administration (NHTSA) jointly published in the **Federal Register** a notice of proposed rulemaking entitled, “The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks.” In the NPRM, the agencies proposed new and amended greenhouse gas (GHG) and Corporate Average Fuel Economy (CAFE) standards for model year 2021 to 2026 light duty vehicles. EPA also proposed to withdraw the waiver it had previously provided to California for that State’s GHG and ZEV programs under section 209 of the Clean Air Act. NHTSA also proposed regulatory text implementing its statutory authority to set nationally applicable fuel economy standards that made explicit that those State programs would also be preempted under NHTSA’s authorities. In this action, the agencies finalize the two actions related to the waiver and preemption. Accordingly, in this document: EPA announces its decision to withdraw the waiver; and NHTSA finalizes regulatory text related to preemption. The agencies anticipate issuing a final rule on standards proposed in the NPRM in the near future.

DATES: This joint action is effective November 26, 2019.

Judicial Review: Pursuant to Clean Air Act section 307(b), any petitions for judicial review of this action must be filed in the United States Court of Appeals for the D.C. Circuit by

November 26, 2019. Given the inherent relationship between the agencies’ actions, any challenges to NHTSA’s regulation should also be filed in the United States Court of Appeals for the D.C. Circuit. *See also* Sections III.G and IV.Q of this preamble.

ADDRESSES: EPA and NHTSA have established dockets for this action under Docket ID No. EPA–HQ–OAR–2018–0283 and NHTSA 2018–0067, respectively. All documents in the docket are listed in the <http://www.regulations.gov> index. Although listed in the index, some information is not publicly available, e.g., confidential business information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available in hard copy in EPA’s docket, and electronically in NHTSA’s online docket. Publicly available docket materials can be found either electronically in www.regulations.gov by searching for the dockets using the Docket ID numbers above, or in hard copy at the following locations: EPA: EPA Docket Center, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave. NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744. NHTSA: Docket Management Facility, M–30, U.S. Department of Transportation (DOT), West Building, Ground Floor, Rm. W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590. The DOT Docket Management Facility is open between 9 a.m. and 5 p.m. Eastern Time, Monday through Friday, except Federal holidays.

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NHTSA: James Tamm, Office of Rulemaking, Fuel Economy Division, National Highway Traffic Safety Administration, 1200 New Jersey Avenue SE, Washington, DC 20590; telephone number: (202) 493–0515.

SUPPLEMENTARY INFORMATION:

- I. Overview
- II. Preemption Under the Energy Policy and Conservation Act

- III. EPA’s Withdrawal of Aspects of the January 2013 Waiver of CAA section 209(b) Preemption of the State of California’s Advanced Clean Car Program
- IV. Regulatory Notices and Analyses

I. Overview

On August 24, 2018, the Environmental Protection Agency (EPA) and the Department of Transportation’s National Highway Traffic Safety Administration (NHTSA) (collectively, “the agencies”) jointly published in the **Federal Register** a notice of proposed rulemaking entitled, “The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks” (the SAFE Vehicles rule).¹ In the NPRM, EPA proposed new greenhouse gas (GHG) standards and NHTSA proposed new Corporate Average Fuel Economy (CAFE) standards for model years (MY) 2021 to 2026 light duty vehicles. The agencies also proposed to take two actions, separate from the proposed standards, needed to ensure the existence of one Federal program for light vehicles. First, EPA proposed to withdraw the waiver it had previously provided to California for that State’s GHG program and Zero Emissions Vehicle (ZEV) mandate. Second, NHTSA proposed regulatory text that made explicit that State programs to limit or prohibit tailpipe GHG emissions or establish ZEV mandates are preempted, to carry out its statutory authority to set nationally applicable fuel economy standards and consistent with the express preemption provisions of the Energy Policy and Conservation Act (EPCA).

The SAFE Vehicles Rule received several hundred thousand public comments, which discussed in great detail all aspects of the proposal. The nature of the comments received related to the proposed standards and the proposed actions on preemption, though, were considerably different. That is, the vast majority of comments, whether one considers the number of commenters, the number of issues raised by commenters, or the length and level of detail of those comments, focused primarily on the agencies’ proposed standards. In contrast, the comments to the preemption issues, though substantive and thorough, were fewer in number and length, and raised primarily legal issues, rather than the technical or economic issues that were the focus of many comments to the standards. Both the proposed waiver withdrawal and discussion of EPCA

¹ 83 FR 42986.

preemption are legal matters that are independent of the technical details of the proposed standards and, as such, took up a relatively small part of the NPRM.

Recent actions by the State of California taken after the publication of the NPRM have confirmed the need for final decision from the agencies that States do not have the authority to set GHG standards or establish ZEV mandates. First, on December 12, 2018, California unilaterally amended its “deemed to comply” provision, such that CARB’s GHG standards can be satisfied only by complying with EPA’s standards as those standards were promulgated in 2012.² More recently, on July 25, 2019, California announced a so-called “voluntary framework” with four automakers, which purported, without analysis of the terms of the existing waiver, California law, or how this “framework” is permissible under Federal law, to allow those automakers to meet reduced standards on a national basis if they promise not to challenge California’s authority to establish GHG standards or the ZEV mandate.³ These two actions, both of which conflict with the maintenance of a harmonized national fuel economy and tailpipe GHG emissions program and the terms of the agreement reached in 2012 and 2013, confirm that the only way to create one actual, durable national program is for GHG and fuel economy standards to be set by the Federal government, as was intended by Congress in including express preemption provisions in both the Clean Air Act (for new motor vehicle emissions standards) and EPCA (for fuel economy).⁴

In light of the divergence in the type of comments received to the proposal (i.e., between the standards-related proposal and the waiver and

preemption proposals), and in light of the recent actions taken by California, the agencies have determined it is appropriate to move forward with the two actions related to preemption now, while continuing work on a final rule to establish the CAFE and GHG standards that were within the scope of the NPRM. This decision is appropriate, as agencies have authority to finalize different parts of proposed actions at different times. Further, the agencies previewed this possibility in the NPRM by emphasizing the severability of the standards from the actions being finalized in this document. EPA’s action in this document does not add or amend regulatory text pursuant to the Clean Air Act and, thus, issuing this decision on the waiver and the later rulemaking on the standard makes clear the difference between EPA’s two actions and their independence from one another. NHTSA’s action in this document is not to set standards for particular model years, but rather is an exercise of its authority under 49 U.S.C. 32901 through 32903, necessary to maintain the integrity of the corporate average fuel economy program and compliance regime established by Congress as a nationwide program, and consistent with Congress’ statement of express preemption in 49 U.S.C. 32919. These two general aspects of the SAFE Vehicles Rule are independent of the CAFE and GHG standards for Model Years 2021–2026.⁵ For that reason, the decision in this document to finalize the waiver and preemption issues does not require the agencies to reopen the comment period for the standards, as it does not have any effect on either agency’s standards.

The agencies note that several comments claimed that the comment period of 63 days was inadequate or that the agencies did not hold a sufficient number of public meetings. Although the agencies will address this comment more directly in the forthcoming final rulemaking to establish standards, for purposes of this action, it is clear to the agencies that commenters had adequate time to respond to the issue of the waiver and EPCA preemption. Courts give broad discretion to agencies in determining whether the length of a comment period is reasonable and, in assessing the sufficiency of a comment

period, look to whether the public had a meaningful opportunity to comment on a proposed action. *See, e.g., Rural Cellular Ass’n v. FCC*, 588 F.3d 1095, 1101 (D.C. Cir. 2009); *Connecticut Light & Power Co. v. Nuclear Regulatory Comm’n*, 673 F.2d 525, 534 (D.C. Cir. 1982). There was unquestionably a meaningful opportunity to comment here. The agencies received several hundred thousand comments, which included highly detailed and technical comments on all aspects of the proposal from seemingly all relevant stakeholders, including numerous comments related to EPA’s action on the waiver and NHTSA’s proposal on preemption. The agencies also note that the NPRM was initially issued and made public on August 2, 2018, over three weeks prior to publication in the **Federal Register**, and received extensive media coverage immediately thereafter, and giving a total of 86 days to review and comment. Furthermore, the agencies held three public hearings during the comment period, including one in Fresno, California on September 24, 2018, where the agencies heard from several hundred commenters in person.

II. Preemption Under the Energy Policy and Conservation Act

A. NHTSA Is Finalizing Its Preemption Proposal

NHTSA is finalizing its proposal concerning preemption of State and local laws and regulations related to fuel economy standards. Congress passed EPCA to help achieve the important national objective of protecting the United States against petroleum price shocks through improvements in fuel efficiency for the light duty vehicle fleet. But Congress did not seek to do so at any cost—instead directing the Secretary of Transportation to balance statutory factors, such as the need of the nation to conserve energy, technological feasibility, and economic practicability, to arrive at stringent, but feasible, standards on a Federal basis.

Increasing fuel economy is an expensive undertaking for automakers, the costs of which are necessarily passed on to consumers, thereby discouraging new vehicle purchases and slowing the renewal of the nation’s light duty fleet. That is why fuel economy standards must be set considering other critical factors.

This is also why the notion of national applicability and preemption of State or local laws or regulations related to fuel economy standards is so critical. Allowing State or local governments to establish their own fuel economy standards, or standards related to fuel

² See *In re: Air Resources Board*, Notice of Approval of Regulatory Action, No. 2018–1114–03 (State of California, Office of Administrative Law Dec. 12, 2018), available at <https://ww3.arb.ca.gov/regact/2018/leviii2018/form400dte.pdf?ga=2.183723951.866759811.1568583699-1441462912.1552677736> (last visited Sept. 15, 2019).

³ See California and Major Automakers Reach Groundbreaking Framework Agreement on Clean Emission Standards, Office of Gov. Gavin Newsome (July 25, 2019), available at <https://www.gov.ca.gov/2019/07/25/california-and-major-automakers-reach-groundbreaking-framework-agreement-on-clean-emission-standards/> (last visited Sept. 14, 2019); Terms for Light-Duty Greenhouse Gas Emissions Standards, available at <https://ww2.arb.ca.gov/sites/default/files/2019-07/Auto%20Terms%20Signed.pdf> (last visited Sept. 14, 2019).

⁴ At the time this joint action was signed, California had not submitted or demonstrated any intention to submit an application for a waiver for either its December 2018 amendment to its regulations or its July 2019 “framework.”

⁵ The agencies note that the South Coast Air Quality Management District commented that EPA should not take an action on the waiver in the same notice as a rule that would change EPA’s GHG standards. See South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813. Although the agencies do not acknowledge the validity of this argument, any such concern is rendered moot by this action.

economy, would provide for a universe in which automakers are placed in the untenable situation of having to expend resources to comply not only with Federal standards, but also meet separate State requirements. If State or local governments are allowed to require—directly or indirectly—automakers to develop and implement additional technologies to improve fuel economy (or reduce or eliminate tailpipe greenhouse gas emissions for all or a portion of a fleet), the fuel economy-related expenses of automakers increase beyond those considered in establishing federal standards. This would render the critical balancing required by EPCA devoid of meaning.

Uniform national fuel economy standards are essential to accomplishing the goals of EPCA. To ensure that the fuel economy standards NHTSA adopts constitute the uniform national requirements that Congress intended, NHTSA must address the extent to which State and local laws and regulations are preempted by EPCA.

Furthermore, EPCA states: “When an average fuel economy standard prescribed under this chapter is in effect, a State or a political subdivision of a State may not adopt or enforce a law or regulation related to fuel economy standards or average fuel economy standards for automobiles covered by an average fuel economy standard under this chapter.” 49 U.S.C. 32919(a). As a limited exception, a State or local government “may prescribe requirements for fuel economy for automobiles obtained for its own use.” 49 U.S.C. 32919(c). In addition, when a Federal fuel economy labeling or information requirement is in effect, pursuant to 49 U.S.C. 32908, a State or local government may adopt or enforce an identical requirement on “disclosure of fuel economy or fuel operating costs.” 49 U.S.C. 32919(b). Absent this limited circumstance, a State or local government cannot even have laws in place that are identical to the Federal standards.

NHTSA will first summarize its discussion of preemption in the proposal before turning to discussion of issues raised by the comments. In this final rule, NHTSA fully reaffirms the discussion of preemption set forth in the proposal, which provides additional detail regarding NHTSA’s views.⁶

In the proposal, NHTSA described its preemption discussions in prior rulemakings, which are consistent with the views on preemption that NHTSA is

finalizing in this document.⁷ NHTSA has asserted preemption of certain State emissions standards under EPCA on multiple occasions since 2002. The United States explained in a 2002 amicus brief that EPCA preempted California’s then-existing zero-emissions vehicle (ZEV) regulations.⁸ NHTSA continued the discussion of preemption later that year in a notice of proposed rulemaking setting CAFE standards for model year 2005 through 2007 light trucks, and reiterated its position in the 2003 final rule.⁹ NHTSA’s 2005 notice of proposed rulemaking setting standards for model year 2008 through 2011 light trucks also discussed preemption and the 2006 final rule elaborated on the issue at length, including in a specific discussion finding California’s then-existing tailpipe greenhouse gas emissions regulations were preempted.¹⁰ NHTSA’s 2008 proposed rule for model year 2011 through 2015 passenger cars and light trucks also addressed preemption and proposed adding a summary of NHTSA’s position on the issue to the Code of Federal Regulations.¹¹ That proposed rule also addressed recent developments, specifically the Supreme Court’s decision in *Massachusetts v. EPA*, the enactment of EISA, and two district court decisions finding that State tailpipe greenhouse gas emissions standards were not preempted by

⁷ *Id.* at 43232. As NHTSA noted in the proposal, it had not previously directly addressed preemption of California’s ZEV program. *Id.* at 43233.

⁸ Brief for the United States as Amicus Curiae in Support of Affirmance, *Cent. Valley Chrysler-Plymouth Inc., et al. v. Kenny*, No. 02–16395 (9th Cir. 2002).

⁹ 68 FR 16868, 16895 (Apr. 7, 2003); 67 FR 77015, 77025 (Dec. 16, 2002). In the notice of proposed rulemaking, NHTSA specifically rejected the argument made by California in litigation that NHTSA had not treated EPCA as preempting State efforts to engage in CAFE-related regulation, explaining that States may not “issue a regulation that relates to fuel economy and which addresses the same public policy concern as the CAFE statute. Our statute contains a broad preemption provision making clear the need for a uniform, federal system. . . . The fact that NHTSA had not expressly addressed this particular aspect of California’s requirements should not have been interpreted as tacit acceptance.” 67 FR 77015, 77025 (Dec. 16, 2002).

¹⁰ 71 FR 17566, 17654–70 (Apr. 6, 2006); 70 FR 51414, 51457 (Aug. 30, 2005).

¹¹ 73 FR 24352, 24478–79 (May 2, 2008). NHTSA finalized only standards for model year 2011 through that rulemaking action, and subsequently began a new rulemaking for model year 2012 and later passenger cars and light trucks. In the final rule for model year 2011, NHTSA stated: “NHTSA has decided not to include any provisions addressing preemption in the Code of Federal Regulations at this time. The agency will re-examine the issue of preemption in the content of its forthcoming rulemaking to establish Corporate Average Fuel Economy standards for 2012 and later model years.” 74 FR 14196, 14200 (Mar. 30, 2009).

EPCA.¹² NHTSA explained that those developments did not change its view of preemption and it reaffirmed the detailed analysis and conclusions from the 2006 final rule.¹³ Subsequent CAFE rulemaking documents, prior to the August 2018 proposal, did not discuss EPCA preemption.¹⁴ Thus, this final rule is consistent with NHTSA’s longstanding position on EPCA preemption over the course of nearly two decades.

In the proposal, NHTSA also described certain developments, including the Supreme Court’s decision in *Massachusetts v. EPA*, that preceded EPA’s regulation of tailpipe greenhouse gas emissions through joint rulemaking with NHTSA.¹⁵ In addition, NHTSA described the Obama Administration’s creation of a framework that was intended to allow a manufacturer to “meet all standards with a single national fleet.”¹⁶ Appeals of the two district court decisions holding that the California regulation and Federal regulation could co-exist were withdrawn as part of the negotiated agreement for the National Program.¹⁷ The announcement of the framework was followed by EPA’s decision less than two months later to grant a waiver to California for its own greenhouse gas emissions standards, without taking any substantive position on EPCA preemption.¹⁸ The national framework was a negotiated agreement between the Federal government, California, and the automotive industry.¹⁹

NHTSA confirms its view, stated in the proposal on preemption, that the agencies’ consideration in 2012 of California’s “deemed to comply”

¹² 73 FR 24352, 24478 (May 2, 2008).

¹³ *Id.*

¹⁴ As noted above, in NHTSA’s final rule for model year 2011, it stated that “[t]he agency will re-examine the issue of preemption in the content of its forthcoming rulemaking to establish Corporate Average Fuel Economy standards for 2012 and later model years.” 74 FR 14196, 14200 (Mar. 30, 2009). However, in the NHTSA’s 2009 proposal and 2010 final rule setting standards for model year 2012 through 2016 automobiles, NHTSA stated that it was “deferring further consideration of the preemption issue.” 75 FR 25324, 25546 (May 7, 2010); 74 FR 49454, 49635 (Sept. 28, 2009).

¹⁵ 83 FR 42986, 43232–33 (Aug. 24, 2018).

¹⁶ *Id.* at 43233; 76 FR 74854, 74863 (Dec. 1, 2011).

¹⁷ See 83 FR 42986, 43233 (Aug. 24, 2018); Association of Global Automakers, Docket No. NHTSA–2018–0067–12032.

¹⁸ In other words, the National Program included State requirements not nationally applicable. 83 FR 42986, 43233 (Aug. 24, 2018); see also 74 FR 32744, 32783 (July 8, 2009) (“EPA takes no position regarding whether or not California’s GHG standards are preempted under EPCA.”).

¹⁹ After President Obama announced the agreement, NHTSA and EPA subsequently adopted CAFE and greenhouse gas emissions standards through rulemaking. See 75 FR 25324 (May 7, 2010).

⁶ See 83 FR 42986, 43232–39 (Aug. 24, 2018).

regulatory provision as obviating NHTSA's consideration of preemption was erroneous.²⁰ This, too, was part of the negotiated agreement described above.²¹ Under California's regulatory provision, California deemed manufacturers to be in compliance with certain of California's requirements if they complied with EPA's standards.²² However, EPCA explicitly provides that all State requirements "related to" fuel economy standards, even those that may be identical or equivalent to Federal requirements are preempted by EPCA.²³ Moreover, as discussed in additional detail below, California recently changed its regulations so that it has no such "deemed to comply" provision should the forthcoming SAFE final rule adopt any regulatory alternative other than the no action alternative.²⁴ This change sets up a direct conflict between Federal and State requirements, exacerbating the conflict that exists even now.

Congress's intent to provide for uniform national fuel economy standards is frustrated when State and local actors regulate in this area. In the proposal, NHTSA explained that the need for regulatory certainty, along with the clear prospect of disharmony, required it to address preemption.²⁵ NHTSA also explained its desire to seek comments on this important issue from State and local officials, along with other interested members of the public.²⁶ NHTSA in fact received many comments from State and local governments, NGOs, industry, and others concerning preemption.²⁷ This comment process helped ensure that the agency considered all facets of this significant issue before reaching a final determination in this rule.

NHTSA also discussed the broad and clear text of EPCA's express preemption provision.²⁸ As NHTSA explained in the

proposal, unlike the Clean Air Act, there is no set of circumstances under EPCA in which it would be appropriate or permissible for NHTSA to waive preemption or allow States or local governments to adopt or enforce identical or equivalent requirements.²⁹ EPCA does not provide NHTSA with any waiver authority whatsoever. To ensure Federal primacy over this area, EPCA broadly preempts all State and local laws "related to" fuel economy standards or average fuel economy standards.³⁰ NHTSA reiterates, consistent with the proposal, that in this rulemaking NHTSA is concluding that State and local requirements that relate to fuel economy standards by directly or substantially affecting corporate average fuel economy levels are preempted.³¹

NHTSA also described Supreme Court precedent interpreting the meaning of "related to."³² In addition to the plain language of the statute, NHTSA applied to EPCA the guidance from Supreme Court case law to consider both the objectives of the statute and the effect of the State laws on the Federal standards.³³ As NHTSA explained, the primacy of a single national fuel economy standard, set by the Federal government, was an important objective of Congress in enacting EPCA.

In adopting EISA, Congress did not repeal or amend EPCA's express preemption provision.³⁴ While Congress included in EISA a savings provision preventing EISA from limiting preexisting authority or responsibility conferred by any law, or from authorizing violation of any law,³⁵ the savings clause did not purport to expand either EPA's or NHTSA's preexisting authority or responsibility.³⁶ NHTSA recognized that during debate on the floor, some Members of Congress made statements about the savings provision's impact on California's ability to set tailpipe greenhouse gas emissions standards.³⁷ NHTSA affirms its view, consistent with Supreme Court precedent, that such legislative history does not alter the plain text of the statute.³⁸ In the end, Congress did not

change EPCA's preemption provision when it adopted EISA, despite clearly having the opportunity to do so.³⁹ Because States lacked preexisting authority to set tailpipe greenhouse gas emissions standards, as a result of EPCA's preemption provision, EISA's savings clause did not give them that authority.

In the proposal, NHTSA also described in detail the reasons that tailpipe carbon dioxide emissions regulations or prohibitions are "related to" fuel economy standards.⁴⁰ NHTSA explained that carbon dioxide emissions are a necessary and inevitable byproduct of burning gasoline: The more fuel a vehicle burns or consumes, the more carbon dioxide it emits.⁴¹ Based on the physical and mathematically measurable relationship between carbon dioxide emissions and fuel economy, EPCA has always specified that compliance with fuel economy standards is determined through tests and calculation procedures established by EPA.⁴² Specifically, compliance with fuel economy standards is based almost entirely on carbon dioxide emission rates.⁴³ As NHTSA noted, it is significant that in enacting EPCA, Congress both adopted test procedures reliant on the direct relationship between carbon dioxide emissions and fuel economy, and preempted State and local governments from adopting requirements related to fuel economy standards in the same law.⁴⁴

NHTSA affirms in this final rule that a State or local requirement limiting tailpipe carbon dioxide emissions from automobiles has the direct and substantial effect of regulating fuel consumption and, thus, is "related to" fuel economy standards. Likewise, since carbon dioxide emissions constitute the overwhelming majority of tailpipe carbon emissions, a State regulation of all tailpipe greenhouse gas emissions from automobiles or prohibiting all tailpipe emissions is also "related to" fuel economy standards and preempted by EPCA.

NHTSA is also finalizing its conclusion that EPCA does not preempt all potential State or local regulation of greenhouse gas emissions from vehicles. As NHTSA explained in the proposal,

legislative history will never allow it to be used to 'muddy' the meaning of 'clear statutory language.'" (internal citations omitted).

³⁹ See EISA, Public Law 110-140 (2007); 83 FR 42986, 43234 (Aug. 24, 2018).

⁴⁰ 83 FR 42986, 43234 (Aug. 24, 2018).

⁴¹ *Id.*

⁴² 49 U.S.C. 32904(c).

⁴³ See 83 FR 42986, 43234 (Aug. 24, 2018).

⁴⁴ *Id.*

²⁰ See *id.*; 77 FR 62624, 62637 (Oct. 15, 2012).

²¹ See 75 FR 25324, 25328 (May 7, 2010).

²² 83 FR 42986, 43233 (Aug. 24, 2018).

²³ See *id.* at 43233-34.

²⁴ See 83 FR 42986, 42990 tbl. I-4 (Aug. 24, 2018); Cal. Code Regs. tit. 13, sec. 1961.3(c). California changed its regulation following issuance of NHTSA and EPA's proposed rule. See State of Cal., Office of Admin. Law, Notice of Approval of Regulatory Action (Dec. 12, 2018), <https://www.arb.ca.gov/regact/2018/leviii2018/form400dtc.pdf>. NHTSA recognized the potential for such a change in the proposal. 83 FR 42986, 43233 n.495 (Aug. 24, 2018).

²⁵ 83 FR 42986, 43233 (Aug. 24, 2018).

²⁶ *Id.*

²⁷ See, e.g., California Air Resources Board (CARB), Docket No. NHTSA-2018-0067-11873; Alliance of Automobile Manufacturers, Docket No. NHTSA-2018-0067-12073; Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA-2018-0067-11735.

²⁸ 83 FR 42986, 43233-34 (Aug. 24, 2018).

²⁹ *Id.* at 43233.

³⁰ 49 U.S.C. 32919(a).

³¹ 83 FR 42986, 43233 (Aug. 24, 2018).

³² *Id.*

³³ *Id.* at 43233-34.

³⁴ See EISA, Public Law 110-140 (2007).

³⁵ 42 U.S.C. 17002.

³⁶ See *id.*

³⁷ 83 FR 42986, 43234 (Aug. 24, 2018).

³⁸ See *Food Mktg. Inst. v. Argus Leader Media*, 139 S. Ct. 2356, 2364 (2019) ("In statutory interpretation disputes, a court's proper starting point lies in a careful examination of the ordinary meaning and structure of the law itself. Where, as here, that examination yields a clear answer, judges must stop. Even those of us who sometimes consult

some greenhouse gas emissions from vehicles are not related to fuel economy because they have either no effect on fuel economy, or only an insignificant effect on fuel economy.⁴⁵ NHTSA provided an example of a requirement with no bearing on fuel economy: a State regulation of vehicular refrigerant leakage.⁴⁶ NHTSA also explained that State safety requirements that have only an incidental impact on fuel economy, such as a requirement to use child seats, is not preempted because it does not sufficiently relate to fuel economy standards.⁴⁷ NHTSA also confirms its view that, if preempted requirements are combined with requirements not related to fuel economy, EPCA would void only the preempted portion of the law.

In addition, NHTSA and EPA are confirming their determination, in this joint final action, that a Clean Air Act waiver does not waive EPCA preemption. As explained in the proposal, a State or local law or regulation related to automobile fuel economy standards is void *ab initio* under the preemptive force of EPCA.⁴⁸ As support, the proposal cited longstanding Supreme Court case law concerning the Supremacy Clause and action in violation of a statutory prohibition.⁴⁹ In sum, “[i]t is basic to this constitutional command [in the Supremacy Clause] that all conflicting state provisions be without effect.”⁵⁰

As explained in the proposal, avoiding preemption under one Federal law has no necessary bearing on another Federal law’s preemptive effect.⁵¹ For purposes of the present rule, this conclusion is confirmed by Section 209 of the Clean Air Act, which explicitly states that a waiver of preemption pursuant to that provision of the Clean Air Act only relieves “application of this section.”⁵² NHTSA also confirms its view that a Clean Air Act waiver does not “federalize” State or local requirements preempted by EPCA.

NHTSA and EPA also explained in the proposal their disagreement with decisions from district courts in California and Vermont that held that EPCA did not preempt State tailpipe greenhouse gas emissions standards.⁵³

The agencies particularly disagree with those district courts’ characterization of the “related to” language in EPCA’s preemption provision as narrow, their reliance on California’s application for a Clean Air Act waiver, and the courts’ implied preemption analyses.⁵⁴ As the proposal explained, these decisions are legally flawed, and NHTSA is not barred from proceeding with its preemption determination here.⁵⁵

NHTSA also reaffirms its views on implied preemption, as described in the proposal.⁵⁶ State or local limitations or prohibitions on tailpipe carbon dioxide emissions from automobiles directly conflict with the objectives of EPCA. NHTSA balances statutory factors in setting CAFE standards at “the maximum feasible average fuel economy level that the Secretary decides the manufacturers can achieve in that model year” (49 U.S.C. 32902(a)).⁵⁷ State requirements, made based on State-specific determinations unbound by the considerations in EPCA, frustrate NHTSA’s statutory role. If one or more States may issue competing or overlapping requirements affecting fuel economy standards, industry must also apply resources and effort at meeting standards applicable only to discrete parts of the country in addition to those spent to comply with the Federal standards. In accordance with EPCA, manufacturers’ “average fuel economy” is calculated based on specific statutory requirements. 49 U.S.C. 32901(a)(5), 32904. Manufacturers earn credits for exceeding average fuel economy standards. 49 U.S.C. 32903. This statutory compliance structure is impeded when States or local governments attempt to set or enforce their own requirements, which necessarily apply to manufacturers at a State or local level. This interferes with the national “average fuel economy” program. The broad preemption provision adopted by Congress in EPCA clearly demonstrates the intention for a single national set of standards that consider, among other things, economic feasibility and consumer choice. Indeed, the entire purpose of a balanced standard is defeated if a State can place its thumb on the scale. Likewise, separate State or local requirements interfere with the compliance regime under EPCA of performance determined based on nationwide fleet averages,

which determine manufacturers’ credits or shortfalls. *See* 49 U.S.C. 32903.

NHTSA also finalizes the view, as discussed in the proposal, that ZEV mandates are preempted by EPCA.⁵⁸ Such laws, which require that a certain number or percentage of vehicles sold or delivered in a State by a manufacturer meet ZEV requirements, directly and substantially affect fuel economy standards by requiring manufacturers to eliminate fossil fuel use in a portion of their fleet. Like State or local tailpipe GHG emissions standards, ZEV mandates require the application of additional efforts and resources beyond those needed to comply with Federal standards. ZEV mandates also directly conflict with the goals of EPCA as they apply irrespective of the Federal statutory factors the Secretary of Transportation (through NHTSA) is required to consider in setting fuel economy standards, including technological feasibility and economic practicability. In the proposal, NHTSA described, as an example, California’s ZEV mandate, which manufacturers must comply with individually for each State adopting California’s mandate.⁵⁹ This regime of State mandates forces manufacturers to expend scarce resources on specific technology regardless of consumer demand, and regardless of what the Secretary has determined in her judgment to be the appropriate expenditure of resources necessary to comply with fuel economy standards set in accordance with the balancing required by EPCA.

NHTSA also confirms its view that the preemption portion of this joint final action is a statement of what Federal law requires and is effective without regard to any particular model year of vehicles and without regard to the details of the fuel economy and greenhouse gas emissions standards the agencies have set previously or set in the future.⁶⁰ In other words, NHTSA’s regulation concerning EPCA preemption is independent of and severable from the specific standards it ultimately adopts for model year 2021 through 2026 automobiles. Given the need for clarity on this issue, NHTSA has decided to issue this as a separate final rule and will later finalize the standards for model year 2021 through 2026 automobiles. NHTSA’s preemption regulation formalizes its longstanding position on preemption and incorporates that position into the Code of Federal Regulations provisions concerning passenger automobile

⁴⁵ *Id.* at 43234–35.

⁴⁶ *Id.* at 43235.

⁴⁷ *Id.*

⁴⁸ *Id.*

⁴⁹ *Id.*

⁵⁰ *Maryland v. Louisiana*, 451 U.S. 725, 746 (1981) (citing *McCulloch v. Maryland*, 4 Wheat. 316, 427 (1819)).

⁵¹ 83 FR 42986, 43235 (Aug. 24, 2018).

⁵² 42 U.S.C. 7543(b)(1).

⁵³ 83 FR 42986, 43232–38 (Aug. 24, 2018); *see Green Mountain Chrysler v. Crombie*, 508 F. Supp.

2d 295 (D. Vt. 2007); *Cent. Valley Chrysler-Jeep, Inc. v. Goldstene*, 529 F. Supp. 2d 1151 (E.D. Cal. 2007), as corrected (Mar. 26, 2008).

⁵⁴ 83 FR 42986, 43232–38 (Aug. 24, 2018).

⁵⁵ *See id.* at 43235.

⁵⁶ *See id.* at 43237–38.

⁵⁷ 49 U.S.C. 32902(f).

⁵⁸ *See id.* at 43238–39.

⁵⁹ *Id.*

⁶⁰ *See id.* at 43239.

average fuel economy standards at 49 CFR 531.7 and 49 CFR part 531, appendix B, and light truck fuel economy standards at 49 CFR 533.7 and 49 CFR part 533, appendix B. These portions of the regulations are operable without regard to any specific Federal standards and requirements in 49 CFR parts 531 and 533 or other parts of the Code of Federal Regulations. Likewise, NHTSA's determination that a State or local law or regulation of tailpipe greenhouse gas emissions from automobiles is related to fuel economy standards is severable from NHTSA's determination that State or local ZEV mandates are related to fuel economy standards.

B. Scientific Relationship Between Tailpipe Carbon Dioxide Emissions and Fuel Economy Standards

NHTSA is finalizing its conclusion that State requirements regulating tailpipe carbon dioxide emissions from automobiles are related to fuel economy standards. The relationship between fuel economy standards and regulations that limit or prohibit tailpipe carbon dioxide emissions from automobiles is a matter of science and mathematics. Commenters did not and cannot dispute the direct scientific link between tailpipe carbon dioxide emissions from automobiles and fuel economy. Thus, State and local laws and regulations that regulate such tailpipe emissions are preempted under EPCA.

The relationship between carbon dioxide and fuel economy is described in several statements in an appendix to parts 531 and 533 that NHTSA is finalizing in this document.

First, “[a]utomobile fuel economy is directly and substantially related to automobile tailpipe emissions of carbon dioxide.” 49 CFR part 531, appx. B, section (a)(1)(A); 49 CFR part 533, appx. B, section (a)(1)(A).⁶¹ No commenters disputed or otherwise specifically commented on this statement.

Second, “[c]arbon dioxide is the natural byproduct of automobile fuel consumption.” 49 CFR part 531, appx. B, section (a)(1)(B); 49 CFR part 533, appx. B, section (a)(1)(B).⁶² One comment identified this as a correct statement,⁶³ and another highlighted this fact in noting NHTSA's longstanding and consistent view on preemption.⁶⁴ No commenters disagreed with this factual statement.

Third, “[t]he most significant and controlling factor in making the measurements necessary to determine the compliance of automobiles with the fuel economy standards in this part [531 and 533] is their rate of tailpipe carbon dioxide emissions.” 49 CFR part 531, appx. B, section (a)(1)(C); 49 CFR part 533, appx. B, section (a)(1)(C).⁶⁵ The Alliance of Automobile Manufacturers similarly stated that the measurements for CAFE compliance involved “the same tests, vehicles, sales data, and emissions measurements that the EPA uses to measure carbon dioxide and tailpipe GHG emissions.”⁶⁶ Fiat Chrysler Automobiles (FCA) also reiterated this point from the Alliance's comments,⁶⁷ and the Competitive Enterprise Institute highlighted NHTSA's discussion of compliance measurement in agreeing that fuel economy standards and greenhouse gas emissions standards are inherently related.⁶⁸ CARB did not dispute this factual statement, but pointed out that carbon dioxide emissions are only one part of the compliance testing regime Congress approved—a fact that NHTSA had already recognized in its proposal.⁶⁹ As NHTSA explained in the proposal, as specified by EPCA, compliance with the CAFE standards is and has always been based on the rates of emission of carbon dioxide, carbon monoxide, and hydrocarbons from covered vehicles, but primarily on the emission rates of carbon dioxide.⁷⁰ The role of carbon dioxide is approximately 100 times greater than the combined role of the other two relevant carbon exhaust gases.⁷¹

Fourth, “[a]lmost all technologically feasible reduction of tailpipe emissions of carbon dioxide is achievable through improving fuel economy, thereby reducing both the consumption of fuel and the creation and emission of carbon dioxide.” 49 CFR part 531, appx. B, section (a)(1)(D); 49 CFR part 533, appx. B, section (a)(1)(D).⁷² The South Coast Air Quality Management District (South Coast) commented that NHTSA previously proposed, in 2008, adopting similar regulatory text that used the

word “most” instead of “almost all.”⁷³ South Coast asserts that the 2008 proposal shows that NHTSA “strains to exaggerate” the overlap between greenhouse gas emissions standards and fuel economy standards.⁷⁴ NHTSA disagrees. While South Coast points to hybrid electric vehicles and ZEVs, it offers no evidence to refute the fact that almost all technologically feasible reduction of tailpipe emissions of carbon dioxide is achievable through improving the fuel economy levels of the vehicles in question.

Fifth, “as a practical matter, regulating fuel economy controls the amount of tailpipe emissions of carbon dioxide, and regulating the tailpipe emissions of carbon dioxide controls fuel economy.” 49 CFR part 531, appx. B, section (a)(1)(E); 49 CFR part 533, appx. B, section (a)(1)(E).⁷⁵ No commenter disputed this statement. The National Automobile Dealers Association agreed, putting it this way: “the physics and chemistry involved with fuel economy and GHG emissions standards are such that controlling fuel economy controls GHGs and controlling GHGs controls fuel economy.”⁷⁶ It is also worth noting that technology cannot reduce the amount of carbon dioxide produced by combusting one gallon of gas. Instead, only technology that reduces the amount of gas needed to drive one mile (fuel economy) will reduce the amount of carbon dioxide generated per mile.

These statements in the regulatory appendix concerning the scientific relationship between automobile carbon dioxide emissions and fuel economy provide the foundation for NHTSA's preemption analysis. Due to this scientific relationship, which no commenter refuted, a regulation of tailpipe carbon dioxide emissions from automobiles that does not explicitly state that it is regulating fuel economy nevertheless has the effect of doing so. The label a State chooses to put on its regulations certainly is not dispositive in a preemption analysis. See, e.g., *Nat'l Meat Ass'n. v. Harris*, 565 U.S. 452, 464 (2012). One comment, from the Northeast States for Coordinated Air Use Management (NESCAUM), asserted that “California's GHG standards do not mention fuel economy or attempt to

⁶¹ 83 FR 42986, 43489 (Aug. 24, 2018).

⁶² *Id.*

⁶³ Walter Kreucher, Docket No. NHTSA-2018-0067-0444.

⁶⁴ Association of Global Automakers, Docket No. NHTSA-2018-0067-12032.

⁶⁵ 83 FR 42986, 43489 (Aug. 24, 2018).

⁶⁶ Alliance of Automobile Manufacturers, Docket No. NHTSA-2018-0067-12073.

⁶⁷ Fiat Chrysler Automobiles (FCA), Docket No. NHTSA-2018-0067-11943.

⁶⁸ Competitive Enterprise Institute, Docket No. NHTSA-2018-0067-12015.

⁶⁹ See California Air Resources Board (CARB), Docket No. NHTSA-2018-0067-11873; 83 FR 42986, 43234 (Aug. 24, 2018).

⁷⁰ See 83 FR 42986, 43234 (Aug. 24, 2018).

⁷¹ 71 FR 17566, 17655-56 (Apr. 6, 2006); 83 FR 42986, 43234 (Aug. 24, 2018).

⁷² 83 FR 42986, 43489 (Aug. 24, 2018).

⁷³ South Coast Air Quality Management District, Docket No. NHTSA-2018-0067-11813.

⁷⁴ *Id.*

⁷⁵ 83 FR 42986, 43489 (Aug. 24, 2018).

⁷⁶ National Automobile Dealers Association, Docket No. NHTSA-2018-0067-12064.

regulate fuel economy.”⁷⁷ To such comments, the agencies must ask ourselves the age-old question: “What’s in a name?” and conclude “[t]hat which we call a rose by any other name would smell as sweet.”⁷⁸ Arguments focused on form, or worse—labels—over substance are not persuasive. Moreover, it is indisputable that EPCA preemption reaches beyond explicit regulations of fuel economy and into regulations “related to” fuel economy. The words “related to” cannot be read out of the statute or narrowed in a way that undermines Congress’s broad preemption intent.

It is a matter of undisputed fact that the more fuel a vehicle burns or consumes, the more carbon dioxide it emits. There is a necessary relation between the regulation of one side of this equation and the regulation of the other. In other words, improving fuel economy has two inherently related benefits: Reducing fuel consumption and reducing carbon dioxide emissions. State and local governments cannot evade the preemptive sweep of EPCA by emphasizing only one side of these benefits and downplaying or ignoring the other when describing their regulations.

To further illustrate the situation, consider types of regulations for a swimming pool. If the pool has a hose on one side that is filling the pool and a hose on the other side that is draining the pool, you can regulate the water level in the pool by controlling either hose. Limiting the amount of water released by the inflow hose, is not itself a regulation of the outflow hose. But it is nonsensical to say that regulating the pool’s inflow is not related to regulating its outflow. A regulation of either hose necessarily affects the level of water in the same pool. The Supreme Court has recognized preemption should appropriately apply in such contexts. *See Rowe v. N.H. Motor Transp. Ass’n*, 552 U.S. 364, 368, 72 (2008) (looking at effect of regulation to determine it was preempted even though “it tells shippers what to choose rather than carriers what to do” where Federal law preempted State laws “related to a price, route, or service of any motor carrier . . . with respect to the transportation of property”); *Engine Mfrs. Ass’n v. South Coast Air Quality Mgmt. Dist.*, 541 U.S. 246, 255 (2004) (explaining that it “would make no sense” to allow a State regulation to

evade preemption simply because it addressed the purchase, rather than manufacture, of a federally regulated product).

C. Importance of One National Standard

To ensure uniform national fuel economy standards, Congress determined that it was appropriate to preempt States and local governments from adopting or enforcing laws or regulations related to the Federal standards. Effectuating Congress’s goal requires NHTSA to address preemption. Preemption is necessary to the effectiveness of NHTSA’s existing and forthcoming fuel economy standards and regulatory certainty into the future, specifically, one set of national standards. Congress made clear, through the required comprehensive balancing of factors and underlined by its inclusion of an express preemption provision, that State and local requirements impede the national fuel economy program. Thus, NHTSA is exercising its authority in this document, under 49 U.S.C. 32901 through 32903, to promulgate regulations to protect the integrity of the national program. This confirms the clear preemptive nature of NHTSA’s standards, as stated in 49 U.S.C. 329219 and provides additional clarity on the scope of preemption, to carry out NHTSA’s statutory authority to set nationally applicable standards.

A consistent refrain throughout many of the comments NHTSA received on its preemption proposal was the need for one national standard.⁷⁹ Preemption provides for just that uniformity. Indeed, that was the very purpose for Congress’s including the express preemption provision in EPCA.

In enacting EPCA’s preemption provision, Congress explicitly recognized the need to avoid a patchwork of requirements related to fuel economy standards, and gave NHTSA the exclusive authority to set and enforce fuel economy standards with discrete and limited exceptions as set forth in 49 U.S.C. 32919. NHTSA’s exclusive authority is exercised through joint rulemaking with EPA for the very reason that tailpipe carbon dioxide emissions standards are directly and substantially related to fuel economy standards and apply concurrently to the same fleet of vehicles. This joint action enables the Federal government to administer its overlapping obligations while avoiding inconsistency. *See*

Massachusetts v. EPA, 549 U.S. 497, 532 (2007).

Recent developments in California provide good examples of the need for a national standard and the problem that Congress sought to address in enacting EPCA’s preemption provision. After the agencies published the proposal, California amended its regulations such that manufacturers are bound to comply with requirements consistent with the no action alternative for model years 2021 through 2026,⁸⁰ regardless of what the Federal standards are ultimately adopted. Moreover, even as to the existing Federal standard, California’s regulations are impermissible under EPCA because only a Federal standard can apply nationally. State or local standards necessarily apply at the State and local level, and therefore are inherently inconsistent with the nationwide average standards pursuant to EPCA. *See* 49 U.S.C. 32901(a)(5)–(6), (13). Likewise, State and local compliance regimes interfere with the national program of credits and shortfalls for nationwide fleet performance by making compliance across the country inordinately complicated, inefficient, and expensive. *See id.* 32903.

Despite a widespread shared belief in the importance of one national standard, NHTSA’s proposal on preemption received a mix of support and opposition in comments. Some commenters weighed in on preemption largely only to emphasize the importance of having a national standard.⁸¹ Other commenters that supported the substance of the proposal agreed with NHTSA’s analysis of both express and implied preemption, as well as the conclusion that both State laws that limit and State laws that prohibit carbon dioxide tailpipe emissions from automobiles, or have the direct or substantial effect of doing so, are preempted.⁸² On the other hand, those commenters that opposed the substance of the proposal asked NHTSA to withdraw and not finalize any regulatory text concerning preemption.⁸³ Doing so would ignore the very purpose of EPCA’s fuel economy provisions and NHTSA’s statutory obligation under EPCA: To balance statutory factors in order to

⁸⁰ 83 FR 42986, 42990 tbl. I–4 (Aug. 24, 2018).

⁸¹ *See, e.g., Toyota Motor North America*, Docket No. NHTSA–2018–0067–12150.

⁸² *See, e.g., Alliance of Automobile Manufacturers*, Docket No. NHTSA–2018–0067–12073; *Competitive Enterprise Institute*, Docket No. NHTSA–2018–0067–12015.

⁸³ *See, e.g., Joint Submission from the States of California et al. and the Cities of Oakland et al.*, Docket No. NHTSA–2018–0067–11735.

⁷⁷ Northeast States for Coordinated Air Use Management (NESCAUM), Docket No. NHTSA–2018–0067–11691.

⁷⁸ W. Shakespeare, *Romeo & Juliet*, II, ii (47–48) (1597).

⁷⁹ *See, e.g., Alliance of Automobile Manufacturers*, Docket No. NHTSA–2018–0067–12073; *Association of Global Automakers*, Docket No. NHTSA–2018–0067–12032.

establish standards that are “the maximum feasible average fuel economy level that the Secretary decides the manufacturers can achieve in that model year.”⁸⁴ NHTSA disagrees with the comments that ask it to withdraw its proposal and not finalize any regulatory text on preemption. Given the present circumstances, failing to address this issue amounts to ignoring the existence of EPCA’s preemption provision, and allowing for State and local requirements that interfere with NHTSA’s statutory duty to set nationally consistent fuel economy standards.

The rule NHTSA is adopting in this document, under its authority to implement a national automobile fuel economy program in 49 U.S.C. 32901 through 32903, will ultimately provide needed certainty concerning preemption into the future. While EPCA’s preemption provision has been in place for decades, the present circumstances demonstrate the need for greater clarity on this issue.

NHTSA’s statutory role is to set nationwide standards based on a reasoned balancing of statutory factors. State and local requirements—unbound by these considerations—undermine NHTSA’s ability to set standards applicable across the entire country. NHTSA is obliged to set standards at “the maximum feasible average fuel economy level that the Secretary decides the manufacturers can achieve in that model year.” 49 U.S.C. 32902(a). The regulation NHTSA is finalizing in this document implements that authority in 49 U.S.C. 32902 by clarifying the State requirements that impermissibly interfere with its statutory role to set nationally applicable standards. As explained in the proposal, as a practical matter, State and local actors would generally only set requirements that have the effect of requiring a *higher* level of average fuel economy (lest their standards lack impact).⁸⁵ That supposition has now been demonstrated by California’s preemptive action to effectively set higher standards than the Federal standards, should the forthcoming final SAFE rule finalize anything lower than the no action alternative described in the NPRM for model years 2021 through 2026. This state of regulatory inconsistency—and even the potential for such inconsistency—is anathema to the express terms and purposes of EPCA, which does not even permit States to set fuel economy standards identical to those set by NHTSA in

accordance with the statutory requirements.⁸⁶ Even identical standards interfere with the national program by imposing requirements not applicable to nationwide fleets and impose compliance regimes inconsistent with EPCA. *See, e.g.*, 49 U.S.C. 32903 (establishing specific requirements for earning and using credits based on nationwide average fuel economy performance).

California’s recent action also demonstrates disregard for NHTSA’s mandate to set standards in no more than 5 model year increments.⁸⁷ To avoid inconsistent State standards, California’s regulatory change would require NHTSA to adopt the most stringent of nine regulatory alternatives it considered in the proposal.⁸⁸ NHTSA did not bind itself in any way to that regulatory alternative in its 2012 final rule, and to do so would have been contrary to law.⁸⁹

Automakers must comply with the Federal fuel economy and GHG emissions requirements, and do so at significant cost. States like California that do not abide by the constraints of Federal law, and instead set inconsistent or even duplicative requirements related to fuel economy standards unjustifiably increase manufacturers’ compliance costs, which must be either passed along to consumers or absorbed by the industry. Clarity on preemption is therefore essential to ensure the industry has the ability to efficiently expend its resources to comply with the nationally applicable standards determined by the Federal government in light of the Federal statutory factors that must be balanced, without the need to separately account for or comply with State or local requirements.

While it is of course ideal for States to independently abide by the constraints of Federal law, this does not reflect the current state of affairs. NHTSA’s awareness of laws and regulations already in place, as well as the public comments it received in response to its proposal, confirm the need for additional clarity on the boundaries of EPCA preemption. Wrongly decided decisions by district courts in California and Vermont (appeals of which were abandoned as a condition of the negotiated agreement

prior to the 2012 rulemaking), as well as NHTSA’s own silence on this issue in recent years, are sowing confusion, emphasizing the need for the clarity provided by this final rule affirmatively establishing One National Program.⁹⁰

D. NHTSA’s Final Rule Provides Clarity and Certainty on EPCA Preemption

This final rule provides needed clarity on the scope of EPCA preemption. NHTSA is adopting regulatory text, including a detailed appendix, in addition to discussing this issue in the preamble to the rule, specifically to provide clarity on EPCA’s preemption provision.

NHTSA rejects the assertion advanced in one comment that NHTSA did not provide notice and a fair opportunity to comment on its interpretation of EPCA preemption.⁹¹ Any such suggestion is negated by the host of commenters that addressed the issue of preemption in response to the proposal. NHTSA proposed codifying its preemption interpretation in parts 531 and 533, and all commenters were explicitly asked to comment on the specific proposed regulatory text as well as on the explanation of NHTSA’s interpretation set out in the preamble to the NPRM.

NHTSA also disagrees with a comment from the California Air Resources Board (CARB) that asserted the proposal was not clear on the scope of preemption.⁹² The regulatory text articulates the boundaries of both express and implied preemption, with appropriate limitation to State or local laws or regulations that: (1) Regulate or prohibit tailpipe carbon dioxide emissions from automobiles, or (2) have the direct or substantial effect of regulating or prohibiting tailpipe carbon

⁹⁰ As described in the proposal, NHTSA’s views on preemption are longstanding. However, NHTSA has not directly addressed preemption in its most recent CAFE rulemakings. South Coast disputes that NHTSA’s views on preemption are longstanding, pointing to legal and factual developments since. South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813. That NHTSA has not opined on developments does not mean that its views have changed. South Coast also points to some wording changes to argue that NHTSA has shifted positions. NHTSA disagrees. It has consistently held the position that State regulation of tailpipe greenhouse gas emissions from automobiles is preempted, and South Coast has not identified any statements to the contrary. In any event, the fact that NHTSA has not addressed EPCA preemption in its most recent rulemakings highlights the need to address the issue without further delay.

⁹¹ Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA–2018–0067–11735.

⁹² California Air Resources Board (CARB), Docket No. NHTSA–2018–0067–11873; Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA–2018–0067–11735.

⁸⁶ *See* 49 U.S.C. 32902(a), 32919(a).

⁸⁷ *See id.* 32902(a), (b)(3)(B).

⁸⁸ *See* Cal. Code Regs. tit. 13, section 1961.3(c); *see* 83 FR 42986, 42990 tbl. I–4 (Aug. 24, 2018) (listing augural standards as baseline/no action alternative, and eight other alternatives under consideration).

⁸⁹ *See* 49 U.S.C. 32902(b)(3)(B); 77 FR 62624, 62627 (Oct. 15, 2012).

⁸⁴ 49 U.S.C. 32902(a), (f).

⁸⁵ 83 FR 42986, 43238 (Aug. 24, 2018).

dioxide emissions from automobiles or automobile fuel economy. In the proposal, NHTSA provided examples of laws that would not be preempted.⁹³ CARB did not identify any examples of laws where additional clarity was needed.

It should not be difficult for States or local governments to ascertain whether their laws or regulations regulate or prohibit tailpipe carbon dioxide emissions. As NHTSA explained in the proposal and reiterates in this document, both requirements specific to tailpipe carbon dioxide emissions from automobiles and those that address all tailpipe greenhouse gas emissions from automobiles are preempted, given that carbon dioxide emissions constitute the overwhelming majority of those emissions.⁹⁴ Likewise, ZEV mandates are also preempted.⁹⁵

NHTSA also does not believe it should be difficult for States or local governments to determine if their laws or regulations have the direct or substantial effect of regulating or prohibiting tailpipe carbon dioxide emissions from automobiles or automobile fuel economy.⁹⁶ To aid in this effort, in the proposal, NHTSA described requirements that would not be preempted because they have only incidental impact on fuel economy or carbon dioxide emissions.⁹⁷ The examples NHTSA provided were child seat mandates and laws governing vehicular refrigerant leakage.⁹⁸

Moreover, contrary to assertions in some comments, NHTSA's adoption of regulatory text does provide a limiting principle⁹⁹ and is not overbroad.¹⁰⁰ Congress set the extraordinarily broad boundaries of preemption in EPCA, where it specified that State and local laws "related to fuel economy

standards" are preempted. The words "related to" have meaning and cannot be read out of the statute. To the extent that questions of interpretation remain about the scope of preemption, that is a consequence of the statute, and is far from unique—particularly with respect to the "related to" language, which Congress has used in multiple contexts.¹⁰¹ The Supreme Court has opined on the meaning of similar terms. However, NHTSA recognizes the concerns about the appropriate limitations of preemption. Notwithstanding the broad sweep of EPCA preemption, NHTSA intends to assert preemption only over State or local requirements that directly or substantially affect corporate average fuel economy standards.

Through its adoption of specific regulatory text in this document, NHTSA is providing guidance on the boundary set by Congress, as well as under principles of implied preemption. Notably, NHTSA has not concluded that implied preemption broadens the scope of preemption established by Congress. As NHTSA recognized in its proposal, some greenhouse gas emissions from automobiles have no relation to fuel economy and therefore may be regulated by States or local governments without running afoul of EPCA preemption. NHTSA provided examples of State or local requirements that are not preempted. It also specifically invited comment on the extent to which State or local requirements can have some incidental impact on fuel economy or carbon dioxide emissions without being related to fuel economy standards, and thus are not preempted. NHTSA did not receive any directly responsive comments regarding this issue, including from State and local government commenters, suggesting that they do not currently have questions about how preemption would apply to their laws or regulations.¹⁰²

As an additional limiting principle, NHTSA reiterates the statement in its

proposal that only a portion of a law or regulation would be preempted, where possible. This would be the case if the law or regulation combined multiple severable elements that were allowable and not allowable, such as with a regulation of both vehicular refrigerant leakage and tailpipe carbon dioxide emissions—refrigerant leakage requirements could remain in place while tailpipe carbon dioxide emissions regulations would necessarily be preempted.

NHTSA rejects the argument made by certain commenters that the presumption against preemption applies in this context.¹⁰³ The presumption is not appropriate given EPCA's express statutory preemption provision. See *Puerto Rico v. Franklin Cal. Tax-Free Trust*, 136 S. Ct. 1938, 1946 (2016) (explaining that "because the statute 'contains an express pre-emption clause,' we do not invoke any presumption against pre-emption but instead 'focus on the plain wording of the clause, which necessarily contains the best evidence of Congress' preemptive intent.'") (quoting *Chamber of Commerce of United States of Am. v. Whiting*, 563 U.S. 582, 594 (2011)).

NHTSA reaffirms the view that EPCA's express preemption provision is broad and clear. NHTSA's review and assessment of comments has not changed its view. Some comments noted that the statute specifically preempts laws or regulations related to fuel economy standards.¹⁰⁴ They assert that States and local governments are unconstrained by EPCA preemption in regulating future model year vehicles, before they are covered by a fuel economy standard issued by NHTSA. NHTSA disagrees.

EPCA preempts State and local laws and regulations that relate to: (1) Fuel economy standards, or (2) average fuel economy standards for automobiles covered by an average fuel economy standard under 49 U.S.C. Chapter 329. Currently, automobiles through model year 2021 are covered by an average fuel economy standard under Chapter 329.¹⁰⁵ NHTSA will continue setting standards for future model years, pursuant to the mandate in 49 U.S.C. 32902(a) that "[a]t least 18 months

⁹³ 83 FR 42986, 43235 (Aug. 24, 2018).

⁹⁴ *Id.* at 43234.

⁹⁵ See *id.* at 43238–39.

⁹⁶ South Coast argued that EPCA preemption would not reach possible State and local requirements concerning lease arrangements or requirements for used vehicles. South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813. NHTSA does not agree. EPCA preempts requirements related to fuel economy standards or average fuel economy standards for automobiles covered by an average fuel economy standard under EPCA. If a State requirement falls within this scope, it is preempted. For example, a State could not prohibit dealers from leasing automobiles or selling used automobiles unless they meet a fuel economy standard.

⁹⁷ 83 FR 42986, 43235 (Aug. 24, 2018).

⁹⁸ *Id.*

⁹⁹ Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA–2018–0067–11735.

¹⁰⁰ *Id.*; California Air Resources Board (CARB), Docket No. NHTSA–2018–0067–11873; South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813.

¹⁰¹ See *Rowe v. N.H. Motor Transp. Ass'n*, 552 U.S. 364, 370–73 (2008); *Am. Airlines v. Wolens*, 513 U.S. 219, 226–27 (1995); *Shaw v. Delta Airlines, Inc.*, 463 U.S. 85, 97 (1983).

¹⁰² Some commenters did assert that California's greenhouse gas emissions standards or ZEV mandates have only an incidental impact on fuel economy, or that NHTSA was not clear why those requirements have more than an incidental impact on fuel economy. California Air Resources Board (CARB), Docket No. NHTSA–2018–0067–11873; Northeast States for Coordinated Air Use Management (NESCAUM), Docket No. NHTSA–2018–0067–11691; South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813. NHTSA disagrees. It discussed these issues in detail in parts b, f, and g of the preemption discussion of the proposed rule and incorporates those discussions here. 83 FR 42986, 43234, 37–39 (Aug. 24, 2018).

¹⁰³ See California Air Resources Board (CARB), Docket No. NHTSA–2018–0067–11873; Center for Biological Diversity et al., Docket No. NHTSA–2018–0067–12000; South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813.

¹⁰⁴ South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813; see also Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA–2018–0067–11735.

¹⁰⁵ See 77 FR 62624, 62637 (Oct. 15, 2012).

before the beginning of *each* model year, the Secretary of Transportation shall prescribe by regulation average fuel economy standards for automobiles manufactured by a manufacturer in that model year.”¹⁰⁶ NHTSA prescribes “average fuel economy standards for at least 1, but not more than 5, model years.” 49 U.S.C. 32902(b)(3)(B). State and local requirements that address automobiles beyond model year 2026 are therefore preempted if they relate to “fuel economy standards” that NHTSA is required to establish in the future. To conclude otherwise would be to make the impermissible assumption that NHTSA will not carry out Congress’s command.

The regulation NHTSA is finalizing in this document implements that authority in 49 U.S.C. 32902 by making clear that State and local requirements that relate to fuel economy standards for future model year vehicles conflict with NHTSA’s ability to set nationally applicable standards for those vehicles in the future and thus are impliedly preempted. Manufacturers make design decisions well in advance of production, as Congress recognized by adding “lead time” provisions to the statute. State and local requirements for automobiles not yet covered by a NHTSA standard could force manufacturers into plans that are not economically practical or otherwise inconsistent with EPCA’s statutory factors—since States and local governments are not bound by those considerations. By the time future model year vehicles are produced, they will be covered by a NHTSA standard. If States or local governments were permitted to issue regulations related to fuel economy for future model year vehicles, manufacturers would at least act at risk of running afoul of those non-Federal regulations. At least some manufacturers would undoubtedly feel compelled to conform with such non-Federal regulations until the Federal government sets its own standards. Even if non-Federal regulations are not ultimately enforceable as to produced vehicles (since a Federal fuel economy standard will be adopted, in time), they clearly conflict with the congressionally imposed constraint of issuing standards for not more than 5 model years. Such far-reaching regulations are based on predictions about the future that are inevitably less reliable the further in time they reach. Manufacturers are therefore put in an untenable position of either planning towards State and local regulations based on potentially outdated or unrealistic expectations

about the future, or ignoring them before knowing the Federal standards that will eventually apply and acting at risk of enforcement by non-Federal actors. Moreover, different States could impose different and conflicting fuel economy requirements on manufacturers for future model years, a result directly at odds with the single national standard established by EPCA. Any of these scenarios demonstrates that the position that EPCA preemption does not reach regulation of model year vehicles not currently covered by a NHTSA standard is flawed. State or local requirements related to fuel economy standards for any model year automobiles are preempted.

The regulatory text and preamble discussion clearly articulates NHTSA’s views on the meaning of “related to” in EPCA’s express preemption provision, which are confirmed following NHTSA’s review and assessment of comments. As discussed in the proposal, EPCA is not unique in using the phrase “related to” to set the scope of preemption.¹⁰⁷ NHTSA described prior Supreme Court case law interpreting this phrase as broad and including such conceptual relationships as having an “association with” or “connection to.” In its comments, South Coast asserted that NHTSA’s discussion was “legally erroneous” because it did not include “discussion and analysis” of a line of Supreme Court cases that began with *New York State Conference of Blue Cross v. Travelers Ins. Co.*, 514 U.S. 645 (1995).¹⁰⁸ South Coast’s criticism is unfounded; NHTSA directly recognized the *Travelers* line of cases which look to the objectives of the statute as a guide to the scope of preemption. *See Travelers*, 514 U.S. at 656. In the proposal, NHTSA specifically applied this analysis to the CAFE context and cited a 1997 case quoting *Travelers*.¹⁰⁹ The *Travelers* line of cases supports NHTSA’s position on preemption. As NHTSA explained in the proposal, EPCA’s preemption provision demonstrates that one of Congress’s objectives was to create a single set of national fuel economy standards. The language Congress enacted preempts all State and local laws and regulations that relate to fuel economy standards, and does not exempt even State requirements that are identical to Federal requirements. Moreover, NHTSA’s proposal was not intended as a comprehensive recitation of all case law addressing the use of

“related to” in statutory preemption provisions. There are many Supreme Court decisions that support the breadth of that language beyond those specifically cited in the proposal.¹¹⁰ For example, in *Rowe*, the Court recognized that a State statute that forbid certain retailers from employing a delivery service unless it followed certain delivery procedures was preempted by the Federal Aviation Administration Authorization Act, which preempted States from enacting or enforcing laws “related to a price, route, or service of any motor carrier.” *Rowe*, 552 U.S. at 368, 71–73. The Court recognized that the State law was directed at shippers rather than carriers, but found that the *effect* of the requirements impacted carriers. *Id.* at 372. The Court explained that State laws “whose ‘effect’ is ‘forbidden’ under federal law are those with a ‘significant impact’ on carrier rates, routes or services.” *Id.* at 375 (emphasis in original). Likewise, here, regulation of tailpipe carbon dioxide emissions has a direct and undeniably substantial effect on fuel economy.

However, NHTSA, of course, agrees that “related to” is not unlimited.¹¹¹ NHTSA specifically discussed the limitations of preemption in its proposal, which only seeks to preempt State or local requirements that directly or substantially affect corporate average fuel economy. NHTSA also provided specific examples of State laws and regulations that would not be preempted, as well as clearly articulating some that are preempted. As discussed above, the regulatory text NHTSA is adopting in this document is appropriately limited and consistent with the scope of preemption established by Congress.

With respect to implied preemption, NHTSA agrees with comments that assert it is a fact-driven analysis.¹¹² However, NHTSA disagrees that there was an insufficient factual record for it to evaluate the conflict either at the time of the proposal or now.¹¹³ NHTSA is well aware of State regulations of tailpipe greenhouse gas emissions (including carbon dioxide) and ZEV mandates, and described several of these in the proposal. The foundational

¹¹⁰ See, e.g., *Rowe v. N.H. Motor Transp. Ass’n*, 552 U.S. 364, 367–72 (2008).

¹¹¹ As the Supreme Court has stated, “the breadth of the words ‘related to’ does not mean the sky is the limit.” *Dan’s City Used Cars, Inc. v. Pelkey*, 569 U.S. 251, 260 (2013).

¹¹² California Air Resources Board (CARB), Docket No. NHTSA–2018–0067–11873; Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA–2018–0067–11735.

¹¹³ California Air Resources Board (CARB), Docket No. NHTSA–2018–0067–11873.

¹⁰⁷ 83 FR 42986, 43233 (Aug. 24, 2018).

¹⁰⁸ South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813.

¹⁰⁹ 83 FR 42986, 43233 (Aug. 24, 2018).

¹⁰⁶ 49 U.S.C. 32902(a) (emphasis added).

factual analysis involves the scientific relationship between automobile fuel economy and automobile tailpipe emissions of carbon dioxide. NHTSA discussed this scientific relationship in detail. No commenter contested the scientific and mathematical relationship between them.

Contrary to CARB's contention in its comments, the fact that NHTSA acknowledged that some State requirements that incidentally affect greenhouse gas emissions are not preempted does not demonstrate that there is an insufficient record for finding that other laws do pose a conflict to NHTSA's statutory role to set nationwide fuel economy standards for automobiles.¹¹⁴ To the contrary, NHTSA carefully considered and acknowledged the limitations of EPCA preemption by discussing a variety of types of laws, and providing specific examples.

NHTSA also disagrees with the claim made in some comments that it does not have delegated authority to issue a regulation on this topic, and is not owed deference or weight for its regulation implementing EPCA's express preemption provision or the conflict resulting from State or local laws or regulations.¹¹⁵ Congress gave the Secretary of Transportation express authorization to prescribe regulations to carry out her duties and powers. 49 U.S.C. 322(a).¹¹⁶ NHTSA has delegated authority to carry out the Secretary's authority under Chapter 329 of Title 49, which encompasses EPCA's preemption provision, as well as EISA.¹¹⁷ NHTSA therefore has clear authority to issue this regulation under 49 U.S.C. 32901 through 32903 to effectuate a national automobile fuel economy program unimpeded by prohibited State and local requirements. As explained here, the statute is clear on the question of preemption, and NHTSA must carry it out. *See Coventry Health Care of Missouri, Inc. v. Nevils*, 137 S. Ct. 1190, 1193 n.3 (2017) (holding that preemption applies and "the statute alone resolves this dispute"). However, to the extent there is any ambiguity, NHTSA is the expert agency and its

regulation adopted in this document is entitled to deference.¹¹⁸ As explained in the proposal, NHTSA is the expert agency given authority to administer the Federal fuel economy program and has expert authority to interpret and apply the requirements of EPCA, including preemption. *See Medtronic, Inc. v. Lohr*, 518 U.S. 470 (1996) ("Because the FDA is the federal agency to which Congress has delegated its authority to implement the provisions of the Act, the agency is uniquely qualified to determine whether a particular form of state law 'stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress,' *Hines v. Davidowitz*, 312 U.S. 52, 67, 61 S. Ct. 399, 404, 85 L. Ed. 581 (1941), and, therefore, whether it should be preempted."); *see also Nat'l Rifle Ass'n v. Reno*, 216 F.3d 122 (D.C. Cir. 2000) (rejecting argument that Attorney General lacked authority to issue regulation that she described as clarifying that certain State requirements were not preempted by Federal law). This is particularly true given the scientific nature of the relationship between fuel economy and greenhouse gas emissions. *See Geier v. Am. Honda Motor Co., Inc.*, 529 U.S. 861 (2000) ("Congress has delegated to DOT authority to implement the statute; the subject matter is technical; and the relevant history and background are complex and extensive. The agency is likely to have a thorough understanding of its own regulation and its objectives and is 'uniquely qualified' to comprehend the likely impact of state requirements.").

NHTSA is also finalizing its view that its regulation concerning EPCA preemption is independent and severable from any particular CAFE standards adopted by NHTSA. NHTSA's implementation of its authority to set nationally applicable fuel economy standards under 49 U.S.C. 32902, by clarifying the scope of preemption, is separate from its decision on the appropriate standards for any given model years. No commenter disagreed that this portion of the proposed rule is severable. The Alliance of Automobile Manufacturers agreed, noting case law stating that whether a regulation is severable depends on the agency's intent and whether the remainder of the regulation may still function sensibly.¹¹⁹ Both these considerations support severability here. Given the lack of any comments to the contrary,

NHTSA is finalizing its conclusion that the standards for model year 2021 through 2026 automobiles are independent of and severable from the decision NHTSA is finalizing in this document on EPCA preemption. Moreover, given the need for clarity on preemption, and in order to give effect to existing standards established pursuant to 49 U.S.C. 32902, NHTSA is issuing this final rule now before making a final determination on the standards portion of the proposal.

E. Direct and Substantial Relationship Between ZEV Mandates and Fuel Economy Standards

NHTSA is also finalizing its conclusion that a State law or regulation that either explicitly prohibits tailpipe carbon dioxide emissions from automobiles or has the direct or substantial effect of doing so is preempted, both pursuant to the express preemption provision in 49 U.S.C. 32919 and implied preemption, as an obstacle to NHTSA's national program pursuant to 49 U.S.C. 32901–32903.

As explained in greater detail in the proposal, carbon dioxide emissions constitute the overwhelming majority of tailpipe carbon emissions.¹²⁰ The only feasible way of eliminating tailpipe carbon dioxide emissions altogether is to eliminate the use of fossil fuel. Thus, regulations that require a certain number or percentage of a manufacturer's fleet of vehicles sold in a State to be ZEVs that produce no carbon dioxide tailpipe emissions necessarily affect the fuel economy achieved by the manufacturer's fleet as well as the manufacturer's strategy to comply with applicable standards, and are therefore preempted under EPCA. These regulations therefore have just as a direct and substantial impact on corporate average fuel economy as regulations that explicitly eliminate carbon dioxide emissions, and are therefore preempted. NHTSA described types of ZEV mandates in detail in its proposal, including California's ZEV mandate, which has been adopted by ten other States.¹²¹

ZEV mandates force the development and commercial deployment of ZEVs, irrespective of the technological feasibility or economic practicability of doing so. The Alliance of Automobile Manufacturers commented that this interference with NHTSA's balancing of

¹²⁰ 83 FR 42986, 43234 (Aug. 24, 2018).

¹²¹ *See id.* at 43239. At the time of the proposal, nine States had adopted California's ZEV mandate. Since that time, a tenth State—Colorado—has also done so. <https://www.colorado.gov/pacific/cdphe/aqcc> (indicating that ZEV standards were adopted on August 16, 2019).

¹¹⁴ *Id.*

¹¹⁵ *Id.*; *Center for Biological Diversity et al.*, Docket No. NHTSA–2018–0067–12000; Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA–2018–0067–11735; South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813.

¹¹⁶ 49 U.S.C. 322(a) specifically states: "The Secretary of Transportation may prescribe regulations to carry out the duties and powers of the Secretary. An officer of the Department of Transportation may prescribe regulations to carry out the duties and powers of the officer."

¹¹⁷ 49 CFR 1.95(a), (j).

¹¹⁸ *See, e.g., Chevron USA, Inc. v. Nat'l Res. Defense Council, Inc.*, 467 U.S. 837, 843–45 (1984).

¹¹⁹ Alliance of Automobile Manufacturers, Docket No. NHTSA–2018–0067–12073.

statutory factors and forced adoption of specific design approaches are grounds for finding ZEV mandates preempted.¹²² NHTSA agrees.

In setting fuel economy standards, among the factors that NHTSA must consider are technological feasibility and economic practicability. 49 U.S.C. 32902(f). NHTSA is also required to set performance-based standards, and not design mandates.¹²³ See 49 U.S.C. 32902(b)(2). These considerations are at odds with ZEV mandates.

NHTSA disagrees with comments that expressed the view that ZEV mandates are not related to fuel economy standards because ZEVs emit no criteria pollutants or greenhouse gases.¹²⁴ Just as a State may not require a specific level of tailpipe carbon dioxide emissions from automobiles, since doing so effectively sets a specific level of fuel economy, a State may not prohibit tailpipe carbon dioxide emissions from automobiles. That is the equivalent of setting a specific emissions level—zero, which also prohibits the use of fossil fuel. In fuel economy terms, that is akin to requiring a vehicle to having the maximum conceivable level of fuel economy. A prohibition on ozone-forming emissions has the same effect, since the only vehicles capable of emitting no ozone-forming emissions are vehicles that do not use fossil fuels. As NHTSA explained, this type of regulation poses a direct conflict with EPCA, particularly as it relates to requiring a percentage of technological fleet penetration—represented by credits or actual vehicles—that an automaker must distribute into a State. ZEV mandates force investment in specific technology (battery electric and fuel cell technology) rather than allowing manufacturers to improve fuel economy by whatever technological path they choose, allowing them to pursue more cost-effective technologies that better reflect consumer demand, as is the case under the CAFE program. ZEV mandates also create an even more fractured regulatory regime. As NHTSA explained in the proposal,

manufacturers must satisfy ZEV mandates in *each* State individually.¹²⁵ NHTSA also disagrees with a comment that argued ZEV mandates are not preempted because the definition of fuel economy in EPCA is in reference to gasoline or equivalent fuel.¹²⁶ EPCA preempts State and local requirements related to fuel economy standards. That ZEV mandates are not themselves expressed as mile-per-gallon standards for fossil-fuel powered vehicles is not dispositive. NHTSA explained the relationship between ZEV mandates and fuel economy standards in detail in the proposal and reiterates that discussion here.¹²⁷

Many commenters expressed support for ZEV mandates as matter of policy.¹²⁸ NHTSA does not take issue with those policy objectives to the extent they do not conflict with EPCA or otherwise impermissibly interfere with the Federal regulation of fuel economy. NHTSA notes that States and local governments are able to continue to encourage ZEVs in many different ways, such as through investments in infrastructure and appropriately tailored incentives.¹²⁹ States and local governments cannot adopt or enforce regulations related to fuel economy standards, which include ZEV mandates, but they are able to pursue their policy preferences, as long as the manner in which they do so does not conflict with Federal law.

F. EISA Did Not Narrow or Otherwise Alter EPCA Preemption

NHTSA reiterates, as it discussed in the proposal, that EISA did not narrow the express preemption clause in 49 U.S.C. 32919. In fact, EISA did not alter EPCA’s express preemption clause in any way. As a factual matter, Congress neither amended or nor repealed EPCA’s preemption clause with the enactment of EISA. EISA’s savings clause did not amend EPCA. The savings clause, codified at 42 U.S.C. 17002, states: “Except to the extent expressly provided in this Act or an

amendment made by this Act, nothing in this Act or an amendment made by this Act supersedes, limits the authority provided or responsibility conferred by, or authorizes any violation of any provision of law (including a regulation), including any energy or environmental law or regulation.”¹³⁰

As described in the proposal, EISA’s savings clause does not expand any pre-existing authority. Instead, the clause expressly states that it did not impose a new limitation on such authority. By its plain text, EISA also does not authorize any violation of any provision of law. This includes EPCA’s express preemption clause. Thus, activities prohibited by the express preemption clause before EISA, such as State laws related to fuel economy standards, continued to be prohibited after EISA.

The text of the savings clause is what controls its meaning, not statements by individual Members of Congress. South Coast claims that NHTSA did not discuss such statements in detail, including statements by Senator Feinstein.¹³¹ NHTSA did recognize in the proposal that the Congressional Record contains statements by certain Members of Congress about their individual views, but explained that such statements lack authority. As NHTSA explained in the proposal, such statements cannot expand the scope of the savings clause or clarify it. Individual Members, even those who may have played a lead role in drafting a particular bill, cannot speak for the body of Congress as a whole.¹³² NHTSA interprets the statutory language based on the words actually adopted by both Houses and signed by the President.

NHTSA likewise does not find persuasive the argument that Congress did not enact additional statutory language in EISA preempting California from regulating tailpipe greenhouse gas

¹³⁰ One commenter pointed out that the proposal did not include the clause before the first comma when it quoted the language of the savings provision. South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813. However, NHTSA disagrees with the commenter that the introductory clause has a substantive impact on this issue. That clause states: “Except to the extent expressly provided in this Act or an amendment made by this Act . . .” But, EISA did not expressly authorize States to regulate or prohibit tailpipe greenhouse gas emissions from automobiles.

¹³¹ South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813.

¹³² *N.L.R.B. v. SW Gen., Inc.*, 137 S. Ct. 929, 942–43 (2017) (“Passing a law often requires compromise, where even the most firm public demands bend to competing interests. What Congress ultimately agrees on is the text that it enacts, not the preferences expressed by certain legislators. . . . [F]loor statements by individual legislators rank among the least illuminating forms of legislative history.” (citations omitted)).

¹²² Alliance of Automobile Manufacturers, Docket No. NHTSA–2018–0067–12073.

¹²³ South Coast asserts that ZEV mandates are performance based because any vehicle meeting the requirements can be certified as a ZEV. South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813. But, it is inherent that the requirements—ZEV means zero-emissions vehicle—dictate a particular design. In any event, for the reasons described above, ZEV mandates are related to fuel economy standards however framed.

¹²⁴ South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813.

¹²⁵ 83 FR 42986, 43239 (Aug. 24, 2018); see Competitive Enterprise Institute, Docket No. NHTSA–2018–0067–12015.

¹²⁶ California Air Resources Board (CARB), Docket No. NHTSA–2018–0067–11873.

¹²⁷ See 83 FR 42986, 43238–39 (Aug. 24, 2018).

¹²⁸ National Coalition for Advanced Transportation (NCAT), Docket No. NHTSA–2018–0067–11969; Union of Concerned Scientists, Docket No. NHTSA–2018–0067–12039.

¹²⁹ Certain incentives are preempted by EPCA. See *Metro. Taxicab Bd. of Trade v. City of New York*, 615 F.3d 152 (2d Cir. 2010) (holding that New York City rule that incentivized hybrid taxis by allowing taxi owners to charge more for the lease of hybrid vehicles were “based expressly on the fuel economy of a leased vehicle, [and] plainly fall within the scope of the EPCA preemption provision.”).

emissions from automobiles. A comment from three Senators provides documents related to potential proposals to do so.¹³³ There are many reasons for Congress not to adopt proposals set forward by one interest group or another, including, of course, because they were unnecessary. That is the case here where EPCA’s preemption provision already prevented States from adopting and enforcing requirements related to fuel economy standards.

Given the words of the savings clause, NHTSA rejects the argument made by South Coast that the “EISA saving provision designedly narrows EPCA’s express preemption provision, and Congress intended this result.”¹³⁴ The savings clause did not amend the preemption provision in EPCA.

Moreover, what the savings clause actually says is that it does *not* limit authority. If a regulation is preempted by EPCA, a State has no authority to enforce it, and EISA did not change that status quo. If Congress wanted to amend the broad and clear express preemption provision in EPCA, it could have and would have done so. It did not.

Because NHTSA disagrees that States could permissibly regulate tailpipe greenhouse gas emissions from automobiles prior to EISA, it also disagrees with comments that argue that Congress “preserved” the ability of States to do so through the savings clause (or, alternatively, that efforts to “revoke” such preexisting authority failed).¹³⁵

NHTSA also disagrees with a comment by South Coast that argues that EISA’s savings provision forecloses implied preemption.¹³⁶ The specific words that South Coast points to are the opening clause: “Except to the extent expressly provided in this Act or an amendment made by this Act.” This language does not address preemption under EPCA. That introductory clause merely modifies the remainder of the savings provision, which goes on to say that “nothing in this Act or an amendment made by this Act . . . limits the authority provided . . . or authorizes any violation of any provision of law” This statutory language prevents EISA from limiting preexisting authority or responsibility conferred by any law or from

authorizing violation of any law. States and local governments had no preexisting authority or responsibility to set requirements related to fuel economy standards. Such requirements are void *ab initio*. The savings provision also does not purport to expand pre-existing authority or responsibility, nor did Congress amend in any way the broad express preemption provision in EPCA when it enacted EISA. Moreover, implied preemption as applied here is not a limitation based in EISA or the Clean Air Act. Implied preemption is instead based on the Secretary of Transportation’s preexisting responsibility under EPCA to balance statutory factors in setting nationwide fuel economy standards for automobiles.

The provision in EISA concerning minimum requirements for Federal government vehicles also does not change NHTSA’s view. Several comments referenced this provision, which states that the EPA “Administrator shall take into account the most stringent standards for vehicle greenhouse gas emissions applicable to and enforceable against motor vehicle manufacturers for vehicles sold anywhere in the United States” in identifying vehicles for the Federal government fleet. 42 U.S.C. 13212(f)(3)(B).¹³⁷ Commenters argued that the phrase “the most stringent standards” would be superfluous if only EPA were allowed to set standards and, in addition, if EPA had not set any such standards at the time EISA was enacted. On the contrary, this provision is fully consistent with NHTSA’s view of preemption, based on the plain text of EPCA’s express preemption provision. The language in the EISA provision specifically indicates that it applies only to “the most stringent standards . . . enforceable against motor vehicle manufacturers.”¹³⁸ This means that EPA could consider only otherwise lawful standards. States and local governments are not permitted to enforce standards preempted by EPCA. 49 U.S.C. 32919(a).

However, EPCA *does* specifically permit a State or local government to “prescribe requirements for fuel economy for automobiles obtained for its own use.” 49 U.S.C. 32919(c). It is logical that the Federal government would consider the requirements for States and local government vehicle fleets in evaluating vehicles for its own Federal government fleet. Such

requirements would be applicable to and could be enforced against manufacturers in contractual procurement relationships with States or local governments. In any event, this provision concerning a limited set of vehicles (Federal government vehicles) is not grounds for undoing the uniform national fuel economy standards applicable to all light vehicles as prescribed by Congress in EPCA.

In enacting this provision in EISA, Congress required the EPA Administrator to “issue guidance identifying the makes and model number of vehicles that are low greenhouse gas emitting vehicles” to aid in identifying vehicles for the Federal government’s own fleet. 42 U.S.C. 13212(f)(3)(A). The provision requiring the Administrator to “take into account the most stringent standards for vehicles greenhouse gas emissions” provides a consideration for that guidance. *Id.* 13212(f)(3)(B). It is not plausible that Congress intended this limited provision concerning guidance on Federal government procurement to disrupt the longstanding express preemption provision in EPCA.

Further, to read this procurement-related provision as somehow showing that Congress intended to allow California to establish laws related to fuel economy standards is unreasonable, as doing so would put California in an unequal setting vis-a-vis other states, and that would not make sense in this context. “The Act also differentiates between the States, despite our historic tradition that all the States enjoy ‘equal sovereignty.’” *Northwest Austin Municipal Utility District Number One v. Holder*, 557 U.S. 193, 203 (2009). A “departure from the fundamental principal of equal sovereignty requires a showing that a statute’s disparate geographic coverage is sufficiently related to the problem that it targets.” *Id.* Congress rejected any such prospect in the area of fuel economy by adding an unwaivable preemption clause in EPCA. NHTSA does not presume that Congress, when adopting EISA, impliedly discarded the equal application of EPCA to the States without a clear statement of intent to do so and a recitation of the “extraordinary conditions” permitting California special authority related to fuel economy. *Id.* at 211. “Congress . . . does not alter the fundamental details of a regulatory scheme in vague terms or ancillary provisions—it does not, one might say, hide elephants in mouseholes.”¹³⁹

¹³⁹ *Whitman v. Am. Trucking Ass’ns*, 531 U.S. 457, 468 (2001).

¹³³ U.S. Senators Tom Carper, Diane Feinstein and Edward J. Markey, Docket No. NHTSA–2018–0067–11938

¹³⁴ South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813.

¹³⁵ Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA–2018–0067–11735.

¹³⁶ South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813.

¹³⁷ California Air Resources Board (CARB), Docket No. NHTSA–2018–0067–11873; Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA–2018–0067–11735.

¹³⁸ 42 U.S.C. 13212(f)(3)(B) (emphasis added).

G. Prior Case Law Does Not Preclude Preemption

Certain comments opposed to NHTSA's proposal rely upon the Supreme Court's decision in *Massachusetts v. EPA* to argue that regulation of tailpipe emissions is separate and distinct from regulation of fuel economy.¹⁴⁰ NHTSA disagrees with attempts to stretch the holding of this decision well beyond the issues addressed by the Court. The Court did not address EPCA preemption in *Massachusetts v. EPA*, or State regulations pursuant to a Clean Air Act waiver. The Court addressed only EPA's own statutory obligations, which have no bearing on EPCA preemption.

Moreover, as discussed above, NHTSA and EPA conduct joint rulemaking consistent with the Supreme Court's decision. The Court acknowledged that NHTSA and EPA's statutory obligations may overlap, but that the agencies may both administer those obligations while avoiding inconsistency.¹⁴¹ NHTSA therefore disagrees with the comment's assertion that regulations of tailpipe greenhouse gas emissions and fuel economy are truly separate and distinct. The agencies issue joint rules precisely because of the unavoidable scientific relationship between the two.

A number of comments also rely on the prior district court decisions in California and Vermont in opposing NHTSA's proposal on preemption.¹⁴² As NHTSA discussed in the proposal, those courts previously concluded that State tailpipe greenhouse gas emissions standards were not preempted by EPCA.¹⁴³ NHTSA continues to disagree with both of these district court decisions, as described in detail in the proposal.¹⁴⁴ This includes the California district court's erroneous view of the requirement in EPCA for NHTSA to consider "other standards" in setting fuel economy standards.¹⁴⁵ In reaching its conclusion, the court misconstrued a separate provision of EPCA that, by its explicit terms, has had no effect for decades. Importantly, neither district court considered NHTSA's views on

preemption in construing the statute NHTSA administers.¹⁴⁶ Although the United States filed an amicus brief opposing the Vermont court's decision in the Second Circuit, that appeal was not decided on the merits due to the automotive industry's withdrawal of the appeal as a part of a negotiated agreement connected to the national framework. In its brief, the United States specifically raised the district court's failure to consider NHTSA's views concerning preemption, let alone give them weight.¹⁴⁷ Withdrawal of appeals was expressly part of the agreement to establish the national framework.

The Vermont district court also attempted to reconcile EPCA and the Clean Air Act by asserting that a Clean Air Act waiver converts State requirements to "other motor vehicle standards" that NHTSA must consider in setting fuel economy standards. As NHTSA noted in the proposal, even the California district court found that there was no legal foundation for the view that a State regulation pursuant to a Clean Air Act waiver becomes the equivalent of a Federal regulation.¹⁴⁸ This is an erroneous finding not based on precedent and is unsupported by applicable law.

As described in the proposal, NHTSA also disagrees with the California and Vermont district courts' implied preemption analyses.¹⁴⁹ NHTSA does not believe those courts fully considered the conflict posed by State regulations and, in one case, even went so far as to assert erroneously that NHTSA could simply defer to California in revising its standards.¹⁵⁰ Those decisions are not binding on NHTSA.

Given NHTSA's previously stated views on those decisions, arguments that rely on the decisions are not

persuasive. Commenters did not provide any new information or analysis of those district court decisions that caused the agency to change its view on the decisions.¹⁵¹ NHTSA incorporates the prior discussion of those decisions from the proposal here.

While NHTSA need not belabor its views again here, it is worth emphasizing, as did commenters, that both district courts ignored NHTSA's published prior statements on preemption in rendering their decisions.¹⁵² Some comments seem to suggest that this failure to address NHTSA's views represents a substantive rejection of those views.¹⁵³ NHTSA disagrees. The district courts simply entirely failed to consider the agency's views; they did not consider and reject them or even find that they were not due any weight. This is among the reasons that NHTSA is formalizing its views in a regulation. As the expert agency charged with administering EPCA, NHTSA is tasked with balancing the four statutory factors in determining the "maximum feasible average fuel economy standards" for each model year.¹⁵⁴ In doing so, NHTSA has the unique ability to determine whether State or local regulations would undermine this balancing.¹⁵⁵ NHTSA's views on preemption certainly should be considered by any court evaluating this issue. This is particularly true given that the relationship between fuel economy standards and greenhouse gas emissions is a matter of science.

One commenter also erroneously asserts that collateral estoppel will bar the Department of Justice from defending a final rule that asserts State greenhouse gas emissions regulations are preempted by EPCA.¹⁵⁶ Nonmutual offensive collateral estoppel does not apply to the United States. *United States v. Mendoza*, 464 U.S. 154, 162 (1984). Moreover, the Federal government was not even a party to the prior litigation involving EPCA preemption. The assertion that the Department of Justice would be barred from defending this final rule lacks merit.

¹⁴⁰ California Air Resources Board (CARB), Docket No. NHTSA-2018-0067-11873; see Northeast States for Coordinated Air Use Management (NESCAUM), Docket No. NHTSA-2018-0067-11691.

¹⁴¹ *Massachusetts v. EPA*, 549 U.S. 497, 532 (2007).

¹⁴² Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA-2018-0067-11735; South Coast Air Quality Management District, Docket No. NHTSA-2018-0067-11813.

¹⁴³ 83 FR 42986, 43235 (Aug. 24, 2018).

¹⁴⁴ *Id.* at 43235-38.

¹⁴⁵ *Id.* at 43236-37.

¹⁴⁶ *Id.* at 43236; Proof Brief for the United States as Amicus Curiae, 07-4342-cv (2d Cir. filed Apr. 16, 2008).

¹⁴⁷ See Proof Brief for the United States as Amicus Curiae, 07-4342-cv (2d Cir. filed Apr. 16, 2008). NHTSA also was not a litigant in the district court cases and, therefore, did not have a full opportunity to raise its views.

¹⁴⁸ 83 FR 42986, 43236 (Aug. 24, 2018).

¹⁴⁹ *Id.* at 43238.

¹⁵⁰ *Cent. Valley Chrysler-Jeep, Inc.*, 529 F. Supp. 2d at 1179. NHTSA has a statutory obligation to set standards at "the maximum feasible average fuel economy level that the Secretary decides the manufacturers can achieve in that model year," in accordance with the statutory considerations. 49 U.S.C. 32902(a), (f). Thus, NHTSA cannot simply defer to a State. For example, the only standards that California would permit to satisfy California requirements for model years 2021 through 2025 are the augural standards. See Cal. Code Regs. tit. 13, § 1961.3(c). If NHTSA finalizes a determination that the augural standards are not "maximum feasible," as discussed in the proposal, then it would be contrary to law for NHTSA to nevertheless adopt them in deference to California.

¹⁵¹ As noted by a commenter, the appeals were dismissed before decision as a practical matter, and despite strong arguments on the merits. Fiat Chrysler Automobiles (FCA), Docket No. NHTSA-2018-0067-11943.

¹⁵² 83 FR 42986, 43236 (Aug. 24, 2018).

¹⁵³ See California Air Resources Board (CARB), Docket No. NHTSA-2018-0067-11873.

¹⁵⁴ 49 U.S.C. 32902(f).

¹⁵⁵ See *id.*

¹⁵⁶ See South Coast Air Quality Management District, Docket No. NHTSA-2018-0067-11813.

H. A Clean Air Act Waiver and SIP Approvals Do Not Foreclose EPCA Preemption

Both agencies are finalizing their tentative conclusion from the proposal that a Clean Air Act waiver does not also foreclose EPCA preemption. EPCA does not provide for a waiver of preemption, either by NHTSA or by another Federal agency. EPA, like NHTSA, does not have the authority to waive EPCA preemption. Therefore, its grant of a Clean Air Act waiver cannot operate to waive EPCA preemption. NHTSA discussed the basis for its view that a Clean Air Act waiver does not “federalize” EPCA-preempted State requirements in detail in its proposal. NHTSA reaffirms that discussion.

Several comments recited the district court’s holding in *Green Mountain Chrysler* that it need not consider EPCA preemption due to the EPA waiver.¹⁵⁷ NHTSA discussed in detail in the proposal its reasons for disagreeing with that decision and commenters did not identify any new information that caused NHTSA to change its view. NHTSA agrees with commenters that reject the flawed reasoning of the district court.¹⁵⁸ As one commenter explained, the argument that an EPA waiver federalizes State requirements renders the EPCA preemption provision a nullity.¹⁵⁹ As the commenter noted, this incorrect interpretation would enable States to even issue explicit fuel economy requirements so long as they were under cover of a waiver from EPA. EPA does not have authority to waive any aspect of EPCA preemption, nor does NHTSA.

NHTSA also finalizes its view that preempted standards are void *ab initio*. No commenters presented information that altered NHTSA’s view, which is based on longstanding Supreme Court case law, as cited by the proposal.

NHTSA agrees with South Coast, which suggested in its comments that EPCA does not outweigh the Clean Air Act.¹⁶⁰ Likewise, the Clean Air Act does not outweigh EPCA. Just as manufacturers must comply with requirements under both statutes, both statutes apply to State and local

governments as well. Moreover, EPCA’s preemption provision is fully consistent with the Clean Air Act. EPCA’s preemption provision does not implicitly repeal parts of Section 209(b), contrary to the assertion in one comment.¹⁶¹ States must simply act in accordance with both statutes. *Cf. Massachusetts v. EPA*, 549 U.S. 497, 532 (2007) (finding no inconsistency between obligations of EPA under Clean Air Act and NHTSA under EPCA).

NHTSA has rejected the argument that a Clean Air Act waiver renders EPCA preemption inapplicable, and likewise rejects the even more attenuated argument concerning EPA’s approval of preempted State requirements as a part of a State Implementation Plan (SIP) submission for areas that do not meet National Ambient Air Quality Standards (NAAQS). A State has no authority to adopt or enforce a requirement that falls within the scope of EPCA preemption. 49 U.S.C. 32919(a). This is true even if adopting the unlawfully enacted requirement would assist the State in coming into compliance with the NAAQS. The inclusion of an invalid fuel economy requirement in an air quality SIP does not render the requirement suddenly valid.¹⁶² NHTSA therefore disagrees with comments that suggest that EPCA preemption no longer applies simply because an unauthorized requirement is included in a SIP that is subsequently approved.¹⁶³ It is inappropriate for a State to take action unauthorized and rendered void by one statutory scheme to meet the requirements of a different statutory scheme.

Moreover, EPCA preemption applies directly to States and local governments which are obliged to adhere to the constraints of the Supremacy Clause. EPCA explicitly prohibits States and local governments from adopting or enforcing a law or regulation related to fuel economy standards. It is unreasonable for States to expect a Federal agency (EPA) acting under one statutory scheme (the Clean Air Act) to analyze whether the State has adopted preempted regulations in contravention of an entirely separate statute (EPCA) administered by a different Federal agency (NHTSA). In fact, as noted above, historically EPA has declined to

address questions unrelated to CAA section 209, such as preemption analysis, in its waiver decisions. NHTSA strongly disagrees with the assertion that EPA’s approval of a SIP silently acts as an implied waiver of EPCA preemption. This suggestion is particularly hollow given that neither EPA nor NHTSA has the authority to waive EPCA preemption.

NHTSA agrees with the general principle that an approved SIP is enforceable as a matter of Federal law.¹⁶⁴ However, the case law does not support the argument made by CARB and South Coast’s comments. The case law explains that a SIP approved by EPA creates binding obligations, pursuant to the Clean Air Act.¹⁶⁵ There is no indication that Congress intended to permit one agency to legitimize an otherwise EPCA-preempted State provision by “federalizing” it. As an analogy, the IRS requires individuals to report and pay taxes on money earned from illegal activity, such as dealing drugs.¹⁶⁶ A drug dealer who complies with Federal tax law is not relieved of the prohibitions on possessing and selling drugs that apply under other Federal laws.

Since SIPs are binding on States, the agencies recognize that certain States may need to work with EPA to revise their SIPs in light of this final action.¹⁶⁷ As stated in the proposal, EPA may subsequently consider whether to employ the appropriate provisions of the Clean Air Act to identify provisions of States’ SIPs that may need review because they include preempted ZEV mandates or greenhouse gas emissions standards.¹⁶⁸ However, this practical consideration is not grounds for ignoring EPCA’s limitations on State action. SIPs are not written in stone. They are subject to revision, including based on changed circumstances. The Clean Air Act allows SIPs to be revised for various reasons, including that part of the plan was approved in error, that the plan is “substantially inadequate,” or that the State is suspending or

¹⁵⁷ See, e.g., California Air Resources Board (CARB), Docket No. NHTSA–2018–0067–11873; Class of 85 Regulatory Response Group, Docket No. NHTSA–2018–0067–12070; Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA–2018–0067–11735.

¹⁵⁸ See, e.g., American Fuel & Petrochemical Manufacturers, Docket No. NHTSA–2018–0067–12078.

¹⁵⁹ Competitive Enterprise Institute, Docket No. NHTSA–2018–0067–12015.

¹⁶⁰ See South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813.

¹⁶¹ Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA–2018–0067–11735.

¹⁶² SIPs must include “enforceable emission limitations.” 42 U.S.C. 7410(a)(2)(A). An EPCA preempted requirement is not enforceable. 49 U.S.C. 32919(a).

¹⁶³ See South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813.

¹⁶⁴ See California Air Resources Board (CARB), Docket No. NHTSA–2018–0067–11873; South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813.

¹⁶⁵ See, e.g., *Safe Air for Everyone v. United States Env’t Prot. Agency*, 488 F.3d 1088, 1091 (9th Cir. 2007).

¹⁶⁶ Internal Revenue Service, Publication 525: Taxable and Nontaxable Income 32 (Mar. 8, 2019), <https://www.irs.gov/pub/irs-pdf/p525.pdf>.

¹⁶⁷ EPA explains below that it will consider whether and how to address SIP implications of this action, to the extent that they exist, in separate actions; EPA believes that it is not necessary to resolve those implications in the course of this action.

¹⁶⁸ 83 FR 42986, 43244 (Aug. 24, 2018).

revoking a program included in a plan. 42 U.S.C. 7410(a)(5)(iii), (k)(5)–(6).

I. NHTSA Has Appropriately Considered the Views of States and Local Governments Consistent With Law

NHTSA considers the views of all interested stakeholders—including States and local governments—in carrying out its statutory obligation to set nationally applicable fuel economy standards. However, EPCA does not permit States or local governments to act as co-regulators with NHTSA in the process of setting fuel economy standards. Indeed, EPCA precludes them from doing so, with the sole exception of information disclosure requirements identical to Federal requirements, and for requirements for fuel economy for automobiles obtained for a State or local governments’ own use. A number of commenters urged NHTSA to work cooperatively with California, and to negotiate with and reach a compromise with California.¹⁶⁹ NHTSA appreciates such comments, and seeks to foster a collaborative regulatory approach to the extent possible. That said, California is not permitted by Federal law to have its own separate laws or regulations relating to fuel economy standards. 49 U.S.C. 32902 makes clear that NHTSA sets nationally applicable fuel economy standards, and NHTSA is implementing its authority to do so through this regulation clarifying the preemptive effect of its standards consistent with the express preemption provision in 49 U.S.C. 32919.

The very limited exceptions to preemption set forth in EPCA—covering vehicles for a government’s own use, and for disclosure requirements that are identical to Federal requirements—only confirm the breadth of preemption. See 49 U.S.C. 32919(b)–(c). States or localities cannot adopt or enforce requirements related to fuel economy standards unless they fall into one of these two discrete exceptions. This means requirements related to fuel economy standards for automobiles for use by a State’s citizens, and not merely the State itself, are not permitted. Since States are not permitted to adopt or enforce requirements related to fuel

economy standards for vehicles sold or delivered to the public, Federal law does not allow California (or any other State or local government) to regulate in this area.

For California, or any other State or local government, to regulate in this area would require NHTSA to waive EPCA preemption, but commenters did not and cannot identify any statutory authorization for NHTSA to do so and no such authority exists, either expressly or impliedly. The Clean Air Act requires EPA to waive Clean Air Act preemption under a specific section of that statute unless it makes certain findings. But because EPCA does not enable NHTSA to issue a waiver of preemption, it also does not set forth terms upon which a waiver would be appropriate.¹⁷⁰ Thus, NHTSA lacks a legal basis for approving of or consenting to State or local requirements related to fuel economy standards.

Absent the affirmative authority to approve of or consent to State or locality’s requirements related to fuel economy standards, commenters appear to ask NHTSA to simply to look aside. That is inconsistent with NHTSA’s legal responsibility to set nationally applicable standards. It is also inconsistent with the self-executing nature of EPCA preemption, meaning that State or local requirements related to fuel economy standards are void *ab initio*. Even if NHTSA wanted to do so, it cannot breathe life into an expressly preempted State law. And doing so would effectively result in NHTSA’s purporting to rewrite a statute, which is beyond the power of a regulatory agency.

NHTSA also disagrees that it is appropriate to ignore EPCA preemption as a strategy to avoid litigation over this issue, a strategy strongly suggested by a large number of commenters. NHTSA understands the concerns of such commenters who hope to avoid prolonged litigation.¹⁷¹ However, NHTSA believes that long-term certainty is best achieved by applying the law as written. NHTSA agrees with commenters who acknowledge the disruption to the automotive marketplace that would come if preempted standards remained in place.¹⁷² Addressing preemption directly, as NHTSA has done through its

adoption of regulatory text in this document, will ultimately provide the needed regulatory certainty into the future.

Those commenters that ask NHTSA to negotiate with California demonstrate the nature of the problem.¹⁷³ The underlying reason commenters are concerned about the absence of a compromise resolution is because of the conflict that will result if States proceed with regulations that are inconsistent with Federal requirements.¹⁷⁴ Such commenters, appropriately, have recognized the disruptive effect of continuing to tolerate multiple regulators in this area. Moreover, as discussed in additional detail below, a negotiated resolution is inconsistent with the APA’s notice and comment rulemaking process. NHTSA has no basis in law to ignore the substantive comments received on its proposal from many stakeholders and instead determine an outcome through negotiation with a regulatory agency in California. NHTSA is a safety agency with different priorities than CARB, with a different set of factors to balance, including safety implications.

As discussed above, many comments emphasized a desire for maintaining a National Program. Neither California nor any other State, of course, has the authority to set national standards in any area. If California were to adopt and enforce requirements related to fuel economy standards, there could only be uniform standards applicable throughout the country if California agrees with the standards set by NHTSA or vice versa. But EPCA requires that “[e]ach standard shall be the maximum feasible average fuel economy level that the Secretary”—not a regulatory agency in the State of California—“decides that the manufacturers can achieve in that model year.”¹⁷⁵ 49 U.S.C. 32902(a).

¹⁷³ See, e.g., American Honda Motor Company, Inc., Docket No. NHTSA–2018–0067–11818; Sen. T. Carper, United States Senate, Docket No. NHTSA–2018–0067–11910; Manufacturers of Emission Controls Association, Docket No. NHTSA–2018–0067–11994.

¹⁷⁴ See Cal. Code Regs. tit. 13, section 1961.3(c).

¹⁷⁵ As NHTSA explained in the proposal, it disagrees with the implication of the district court’s statement in *Central Valley* that “NHTSA is empowered to revise its standards” to take into account California’s regulations. 83 FR 42986, 43238 (Aug. 24, 2018); see *Cent. Valley Chrysler-Jeep, Inc.*, 529 F. Supp. 2d at 1179. NHTSA’s duty under EPCA is to balance the statutory factors, not to acquiesce to the views of one State (which by its own assertion is attempting to address State-specific concerns, including the geography of its population centers). See, e.g., California Air Resources Board (CARB), Docket No. NHTSA–2018–0067–11873 (stating that California’s “population continues to live predominantly in basins bounded by mountains, in which air quality is poor”).

¹⁷⁰ EPA also does not have authority to waive EPCA preemption, under the Clean Air Act or otherwise.

¹⁷¹ American Honda Motor Company, Inc., Docket No. NHTSA–2018–0067–11818; Ford Motor Company, Docket No. NHTSA–2018–0067–11928.

¹⁷² Fiat Chrysler Automobiles (FCA), Docket No. NHTSA–2018–0067–11943.

¹⁶⁹ See, e.g., American Honda Motor Company, Inc., Docket No. NHTSA–2018–0067–11818; Sen. T. Carper, United States Senate, Docket No. NHTSA–2018–0067–11910; Maryland Department of the Environment, Docket No. NHTSA–2018–0067–12044; Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA–2018–0067–11735; Manufacturers of Emission Controls Association, Docket No. NHTSA–2018–0067–11994; North Carolina Department of Environmental Quality, Docket No. NHTSA–2018–0067–12025.

Moreover, a faithful application of EPCA requires more than just avoiding inconsistency. For that reason, it is unavailing that CARB has previously implemented its program purportedly consistent with the Federal government.¹⁷⁶ EPCA requires NHTSA to set nationally applicable standards. EPCA does not permit States or local governments to adopt or enforce even identical or equivalent standards.¹⁷⁷ EPCA allows for only a single regulator—NHTSA—to set fuel economy standards. Moreover, it is now clear it does not intend to do so for model year 2021 through 2026 vehicles, should the forthcoming final SAFE rule finalize standards other than the no action alternative as described in the NPRM.¹⁷⁸ And even consistent programs subject manufacturers to duplicative enforcement regimes, in conflict with EPCA.¹⁷⁹ State standards that are identical or equivalent standards to the Federal standards manufacturers nevertheless obligate manufacturers to meet more onerous requirements. That is because States, of course, lack authority to set nationwide requirements. Therefore, manufacturers must meet State standards within *each* State that has adopted them. Since fuel economy standards are *fleetwide average* standards, it is more difficult to achieve a standard in a particular State, averaged across a smaller pool of vehicles, than it is to achieve the Federal standard, averaged across the pool of vehicles for all States.

In addition, there is no legal basis in EPCA or the APA for California or any other State to receive preferential treatment for their views in this statutory scheme or rulemaking process.¹⁸⁰ Nor is California, or any other State, entitled to negotiate the

appropriate standards with NHTSA. Commenters appear to suggest closed-door negotiations, and not an alternative rulemaking process (such as negotiated rulemaking), that would ensure procedural fairness.¹⁸¹ NHTSA disagrees that negotiation is the appropriate mechanism to set nationally applicable policy with billions of dollars of impacts. The notice-and-comment rulemaking process used by the agencies is the appropriate mechanism for setting standards under EPCA and the Clean Air Act, with due consideration to the views of all interested parties and transparency. NHTSA certainly would prefer a result that is satisfactory to all interested stakeholders, but it may not set aside its own considered views on the appropriate standards to reach a negotiated resolution, nor may it set aside Congress's commands in EPCA.

While States or local governments may not adopt or enforce requirements related to fuel economy standards, NHTSA, of course, is considering their views in setting appropriate standards. Many State and local governments commented at great length on both the preemption and standard setting portions of NHTSA's proposal.¹⁸² NHTSA has taken their views into account in finalizing this rule, along with those of other commenters. States and local governments have had and will continue to have a say in the adoption of fuel economy standards, consistent with the APA. Indeed, many of the technical comments provided by California and other State and local governments and agencies are being considered to improve the analysis regarding the appropriate standards. In an area with express preemption, this APA process is the appropriate means by which the Federal government

should consider the views of States and local governments.

NHTSA also disagrees with the view expressed by some commenters that there is not a direct conflict between State regulation of tailpipe carbon dioxide emissions from automobiles issued pursuant to a Clean Air Act waiver and NHTSA's ability to set fuel economy standards under EPCA. South Coast argues that when there are inconsistent standards, automakers can avoid a conflict by complying with the more stringent standard.¹⁸³

NHTSA disagrees that this situation does not pose a conflict. Higher standards than those NHTSA has determined are "maximum feasible" after balancing the statutory factors negates the agency's judgment in setting national standards, including traffic safety. NHTSA addressed this conflict in detail in the proposal and reiterates that discussion here.¹⁸⁴ NHTSA also disagrees that all manufacturers should simply comply with a higher standard than the standards set by the Federal government based on statutory considerations. It may not be technically feasible for manufacturers to comply with higher standards or the higher standards may not be economically practicable. These are factors that NHTSA must carefully assess and balance in setting standards under EPCA, and the notion that a State has the unilateral ability to veto or undermine NHTSA's determination by setting higher standards directly conflicts with EPCA.

South Coast also asserted in its comments that there is no direct conflict between the purpose of EPCA to reduce fuel consumption by increasing fuel economy and the purpose of the Clean Air Act to protect public health from air pollution, including by allowing California to establish motor vehicle standards if it meets the criteria for a waiver.¹⁸⁵ While it is true that there need not be a conflict between EPCA and the Clean Air Act, this statement is irrelevant to the determination of whether State standards are preempted by EPCA. NHTSA and EPA conduct joint rulemaking in this area *because* EPA's greenhouse gas emissions standards are inherently related to NHTSA's fuel economy standards. This inherent linkage was recognized by the Supreme Court in *Massachusetts v.*

¹⁷⁶ California Air Resources Board (CARB), Docket No. NHTSA-2018-0067-11873.

¹⁷⁷ EPCA does allow States or local governments to adopt identical requirements for disclosure of fuel economy or fuel operating costs, but did not allow identical requirements in other areas related to fuel economy. See 49 U.S.C. 32919(b).

¹⁷⁸ See Cal. Code Regs. tit. 13, section 1961.3(c).

¹⁷⁹ EPCA has an unusual civil penalty provision for violations of fuel economy standards that enables various compliance flexibilities, including use of banked credits, credit plans, credit transfers, and credit trades. See 49 U.S.C. 32912. EPCA also requires specific procedures and findings before the Secretary of Transportation may increase the civil penalty rate applicable to violations of fuel economy standards. 49 U.S.C. 32912(c). State and local enforcement of even identical or equivalent requirements interferes with this enforcement structure.

¹⁸⁰ See *Nw. Austin Mun. Util. Dist. No. One v. Holder*, 557 U.S. 193, 203 (2009) (stating that "a departure from the fundamental principle of equal sovereignty requires a showing that a statute's disparate geographic coverage is sufficiently related to the problem that it targets").

¹⁸¹ One comment noted that prior negotiations were "closed-door, 'put nothing in writing, ever' negotiations." Competitive Enterprise Institute, Docket No. NHTSA-2018-0067-12015; see also Sen. Phil Berger & Rep. Tim Moore, North Carolina General Assembly, Docket No. NHTSA-2018-0067-11961.

¹⁸² See, e.g., California Air Resources Board (CARB), Docket No. NHTSA-2018-0067-11873; Joint Submission from Governors of Texas, et al., Docket No. NHTSA-2018-0067-11935; Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA-2018-0067-11735; Maryland Department of the Environment, Docket No. NHTSA-2018-0067-12044; Minnesota Pollution Control Agency (MPCA), the Minnesota Department of Transportation (MnDOT), and the Minnesota Department of Health (MDH), Docket No. NHTSA-2018-0067-11706; North Carolina Department of Environmental Quality, Docket No. NHTSA-2018-0067-12025; Pennsylvania Department of Environmental Protection, Docket No. NHTSA-2018-0067-11956; Washington State Department of Ecology, Docket No. NHTSA-2018-0067-11926.

¹⁸³ South Coast Air Quality Management District, Docket No. NHTSA-2018-0067-11813.

¹⁸⁴ See section f of the proposal's preemption discussion. 83 FR 42986, 43237-38 (Aug. 24, 2018).

¹⁸⁵ South Coast Air Quality Management District, Docket No. NHTSA-2018-0067-11813.

EPA.¹⁸⁶ California and other States have, for many years, regulated ozone-forming emissions from vehicles pursuant to a Clean Air Act waiver without posing a conflict with NHTSA's regulation of fuel economy. It is when States regulate the emission of greenhouse gases, especially carbon dioxide, that the conflict arises because of the direct and substantial relationship between tailpipe emissions of carbon dioxide and fuel economy. Regulation in this area is related to NHTSA's fuel economy standards and impedes NHTSA's ability to set nationally applicable fuel economy standards.

NHTSA also disagrees with comments that assert it did not properly consider federalism concerns. Specifically, South Coast claimed that NHTSA violated the executive order on federalism, Executive Order 13132, although South Coast acknowledges the Executive Order does not create an enforceable right or benefit.¹⁸⁷ Setting aside the Executive Order's non-justiciability for the moment, NHTSA's action complies with Executive Order 13132. Contrary to South Coast's assertion, the executive order recognizes both express preemption and conflict preemption, and it does not bar the application of conflict preemption where a statute contains an express preemption provision.¹⁸⁸ The provisions concerning express preemption and conflict preemption are in separate paragraphs, which are not mutually exclusive. See E.O. 13132 section 4(a)–(b).

Moreover, the executive order supports NHTSA's action in construing preemption through rulemaking. See *id.* The executive order explicitly supports the process NHTSA used here to consider the views of States and local governments, stating that: "When an agency proposes to act through adjudication or rulemaking to preempt State law, the agency shall provide all affected State and local officials notice and an opportunity for appropriate participation in the proceedings." E.O. 13132 section 4(e). NHTSA cited to Executive Order 13132 in the preemption portion of its proposal,¹⁸⁹

and specifically solicited comments from State and local officials, as well as other members of the public. As discussed above, NHTSA has considered the extensive comments from State and local governments.

EPCA preemption also does not improperly impinge on the rights of States. Several commenters argued for allowing States to regulate in this area due to asserted benefits of State regulation.¹⁹⁰ CARB's comments went into extensive detail on its history of regulating vehicles.¹⁹¹ It also asserted that there is industry support for its regulation in this area,¹⁹² and argued that it has reliance interests in its regulations.¹⁹³ CARB also argued that NHTSA's proposal would adversely impact its police power and ability to protect its citizens.¹⁹⁴ In addition, it claimed that NHTSA's proposal would impact its State-imposed mandate for emissions reductions by 2030, given the transportation sector's contributions to California's greenhouse gas emissions.¹⁹⁵

Notwithstanding these asserted interests of policy, Congress determined that NHTSA should have exclusive authority to set fuel economy standards and that States are not authorized to adopt or enforce regulations related to those standards, with limited exceptions described above. No commenter argued that EPCA's preemption provision is unconstitutional. Some commenters, however, have argued that special treatment afforded to the California is problematic.¹⁹⁶ Just as States have no valid police power to set fuel economy standards directly, neither are they permitted under EPCA and the Supremacy Clause to set standards related to fuel economy standards. States do have input into the Federal fuel economy standards established by NHTSA (as well as EPA's related greenhouse gas emissions standards) through the notice-and-comment process, and the interests of California's citizens as well as the citizens of the

other 49 States are protected by the standards set by the Federal agencies.

NHTSA recognizes that California may have different policy views, as do many interested parties, including both those who expressed views in favor of and in opposition to the proposal. However, Congress gave NHTSA the duty to balance competing considerations. NHTSA also rejects the notion that California has valid reliance interests in regulations that are void *ab initio*. Indeed, even in the run-up to the 2012 rulemaking, California itself reserved its rights to go in a different direction and recognized that the Federal Government may assert preemption at a later date.¹⁹⁷ The extent to which all or part of industry does or does not support California's ability to regulate in this area is also not a relevant consideration to whether California is legally authorized to do so. NHTSA also notes that industry has expressed a strong preference for one national standard, which is the purpose of EPCA's preemption provision.¹⁹⁸ California has now made clear that it will not accept manufacturers' compliance with Federal standards, unless the agencies adopt the no action alternative from the proposal.¹⁹⁹ EPCA preemption ensures that such State regulations are unenforceable and that one set of national standards (the Federal standards) will control. Not even identical standards are permissible.

J. Clarifying Changes to Final Rule Text

No commenter offered alternative regulatory text for consideration by the

¹⁹⁷ See Letter from M. Nichols, CARB to R. LaHood, DOT & L. Jackson, EPA (July 28, 2011), available at <https://www.epa.gov/sites/production/files/2016-10/documents/carb-commitment-ltr.pdf> (last visited Sept. 15, 2019) (making certain commitments for a National Program, conditioned on certain events including EPA's grant of a waiver of Clean Air Act preemption, vehicle manufacturers not challenging California's standards on the basis of EPCA preemption, and indicating that "California reserves all rights to contest final actions taken or not taken by EPA or NHTSA as part of or in response to the mid-term evaluation").

¹⁹⁸ See Alliance of Automobile Manufacturers, Docket No. NHTSA–2018–0067–12073; American Honda Motor Company, Inc., Docket No. NHTSA–2018–0067–11818; Association of Global Automakers, Docket No. NHTSA–2018–0067–12032; Fiat Chrysler Automobiles (FCA), Docket No. NHTSA–2018–0067–11943; Ford Motor Company, Docket No. NHTSA–2018–0067–11928; General Motors LLC, Docket No. NHTSA–2018–0067–11858; Jaguar Land Rover, Docket No. NHTSA–2018–0067–11916; Mazda Motor Company, Docket No. NHTSA–2018–0067–11727; Mitsubishi Motors RD of America, Inc. (MRDA), Docket No. NHTSA–2018–0067–12056; Subaru, Docket No. NHTSA–2018–0067–12020; Toyota Motor North America, Docket No. NHTSA–2018–0067–12150; Volkswagen Group of America, Docket No. NHTSA–2017–0069–0583.

¹⁹⁹ See Cal. Code Regs. tit. 13, section 1961.3(c).

¹⁸⁶ See *Massachusetts v. EPA*, 549 U.S. 497, 532 (2007).

¹⁸⁷ E.O. 13132 section 11; South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813. South Coast also states that NHTSA did not mention the Tenth Amendment in its proposal. South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813. However, South Coast does not assert that this action violates the Tenth Amendment, which is fully consistent with Federal preemption. See Constitution, Article VI.

¹⁸⁸ South Coast Air Quality Management District, Docket No. NHTSA–2018–0067–11813.

¹⁸⁹ 83 FR 42986, 43233 n.496 (Aug. 24, 2018).

¹⁹⁰ See, e.g., California Air Resources Board (CARB), Docket No. NHTSA–2018–0067–11873.

¹⁹¹ California Air Resources Board (CARB), Docket No. NHTSA–2018–0067–11873.

¹⁹² *Id.*

¹⁹³ *Id.*

¹⁹⁴ *Id.*; see also Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA–2018–0067–11735.

¹⁹⁵ California Air Resources Board (CARB), Docket No. NHTSA–2018–0067–11873.

¹⁹⁶ E.g., Sen. Phil Berger & Rep. Tim Moore, North Carolina General Assembly, Docket No. NHTSA–2018–0067–11961; Rep. M. Turzai, Pennsylvania House of Representatives, Docket No. NHTSA–2018–0067–11839.

agency on preemption. Because NHTSA is finalizing its views on preemption, it is adopting the proposed regulatory text, including an appendix. However, based on its review of comments, NHTSA is adopting a few minor, clarifying changes.

While not advocating for a change to the regulatory text, comments from South Coast and CARB persuaded us to make changes to ensure consistency with EPCA's express preemption provision, as was NHTSA's intention.²⁰⁰ South Coast specifically pointed out that two provisions of the proposed regulatory text (appendix B, sections (a)(3) and (b)(3)) did not include the word "automobiles."²⁰¹ Contrary to South Coast's suggestion, NHTSA's intention was not to reach beyond the statutory text. Most of the proposed regulatory text explicitly addressed automobiles. In the two provisions identified by South Coast as omitting that term, NHTSA addressed tailpipe carbon dioxide emissions and fuel economy. In context, these references address automobile emissions and automobile fuel economy. However, for clarity and consistency, NHTSA has added explicit reference to automobiles to these two provisions.

CARB also pointed out in its comments that the statute preempts laws or regulations "related to fuel economy standards," not simply those related to fuel economy.²⁰² While other provisions of the proposed rule used the phrases "relates to fuel economy standards" or "related to fuel economy standards," the word "standards" was inadvertently omitted from section (a)(3) of the appendix. In the final rule, NHTSA has added that word for clarity.

In addition, to ensure consistency throughout the regulatory text and with the preamble discussion, NHTSA is clarifying that a State law or regulations having either a direct or substantial effect of regulating or prohibiting tailpipe carbon dioxide emissions or fuel economy is a law or regulation related to fuel economy. The proposal included this statement in the proposed regulatory text: "Automobile fuel

economy is directly and substantially related to automobile tailpipe emissions of carbon dioxide." This provides the foundation for NHTSA's express and implied preemption analysis. NHTSA is therefore clarifying that requirements directly or substantially related to fuel economy are preempted by adding "or substantially" to two places in the regulatory text. This is consistent with the proposal, which explained that requirements with no bearing on fuel economy or those with only an incidental impact on fuel economy are not preempted.²⁰³ Requirements with more than an incidental impact, *i.e.* those requirements that directly or substantially affect fuel economy are related to fuel economy and thus preempted. Therefore, this change in the regulatory text of the final rule provides additional clarity on the scope of preemption.

In addition, several references throughout the proposed regulatory text addressed a "state law or regulation." Consistent with EPCA and the discussion in the notice of proposed rulemaking, NHTSA intended to address laws and regulations of States and their political subdivisions. For clarity, NHTSA revised all references in its regulatory text to cover States and their political subdivisions.

Specifically, in the rule NHTSA is finalizing in this document, appendix B, section (a)(3) reads: "A law or regulation of a State or political subdivision of a State having the direct or substantial effect of regulating or prohibiting tailpipe carbon dioxide emissions from automobiles or automobile fuel economy is a law or regulation related to fuel economy standards and expressly preempted under 49 U.S.C. 32919."²⁰⁴ Appendix B, section (b)(3) reads: "A law or regulation of a State or political subdivision of a State having the direct or substantial effect of regulating or prohibiting tailpipe carbon dioxide emissions from automobiles or automobile fuel economy is impliedly preempted under 49 U.S.C. Chapter 329."²⁰⁵

Finally, NHTSA also added clarifying language to 49 CFR 531.7(b) and 533.7(b) to indicate that the references to "section 32908" are to section 32908 of title 49 of the United States Code.

These clarifying changes are consistent with the discussion in the preamble to NHTSA's proposed rule.

III. EPA's Withdrawal of Aspects of the January 2013 Waiver of CAA section 209(b) Preemption of the State of California's Advanced Clean Car Program

In this section of this joint action, EPA is finalizing its August 2018 proposal to withdraw aspects of its January 2013 waiver of Clean Air Act (CAA) section 209 preemption of the State of California's Advanced Clean Car (ACC) program. *First*, subsection A provides background regarding the ACC program. *Second*, subsection B finalizes EPA's proposed determination that it has the authority to reconsider and withdraw previously granted waivers. *Third*, subsection C finalizes EPA's proposed determination that, in light of NHTSA's determinations finalized elsewhere in this joint action regarding the preemptive effect of EPCA on state GHG and ZEV programs, EPA's January 2013 grant of a waiver of CAA preemption for those provisions of California's program was invalid, null, and void; that waiver is hereby withdrawn on that basis, effective on the effective date of this joint action. *Fourth*, subsection D, separate and apart from the determinations in subsection C with regard to the effect of EPCA preemption on the January 2013 waiver, finalizes EPA's reconsideration of, and its proposed determination that it is appropriate to withdraw, its January 2013 grant of a waiver of CAA preemption for the GHG and ZEV standards in California's ACC program for model years 2021 through 2025, based on a determination that California "does not need [those] standards to meet compelling and extraordinary conditions" within the meaning of CAA section 209(b)(1)(B). *Fifth*, subsection E sets forth and specifies the terms of the waiver withdrawal. *Sixth*, subsection F finalizes EPA's proposed determination that, separate and apart from the findings and determinations described above, states other than California cannot use CAA section 177 to adopt California's GHG standards. *Seventh and finally*, subsection G sets forth EPA's understanding and intention with regard to severability of, and the appropriate venue for judicial review of, this action.

A. Background

On January 9, 2013, EPA granted California's request for a waiver of preemption to enforce its Advanced Clean Car (ACC) program regulations under CAA section 209(b)(1).²⁰⁶ 78 FR

²⁰⁰ South Coast and CARB asked NHTSA to withdraw its proposal on preemption, rather than to change the text of the proposed rule. California Air Resources Board (CARB), Docket No. NHTSA-2018-0067-11873; South Coast Air Quality Management District, Docket No. NHTSA-2018-0067-11813. NHTSA declines to do so for the reasons discussed in this final rule.

²⁰¹ South Coast Air Quality Management District, Docket No. NHTSA-2018-0067-11813.

²⁰² California Air Resources Board (CARB), Docket No. NHTSA-2018-0067-11873; *see also* Joint Submission from the States of California et al. and the Cities of Oakland et al., Docket No. NHTSA-2018-0067-11735.

²⁰³ 83 FR 42986, 43235 (Aug. 24, 2018). It is also consistent with the Supreme Court case law interpreting "related to" in preemption provisions, as discussed both in the proposal and this final rule. *See, e.g., Rowe*, 552 U.S. at 375.

²⁰⁴ Emphases added.

²⁰⁵ Emphases added.

²⁰⁶ As in the proposal, this final action uses "California" and "California Air Resources Board" (or "CARB") interchangeably.

2112. On August 24, 2018, EPA proposed to withdraw this waiver of preemption with regard to the GHG and ZEV standards of its Advanced Clean Car (ACC) program for MY 2021–2025. 83 FR 43240. In the SAFE proposal, EPA provided extensive background on the history of CAA section 209 and waivers granted thereunder, as well as on the specific waiver which California sought for the ACC program which is at issue here, in the SAFE proposal.²⁰⁷ 83 FR 43240–43242.

Since publication of the SAFE proposal, California has clarified its “deemed to comply” provision, under which manufacturers are afforded the option of complying with CARB’s GHG standards by showing that they comply with the applicable federal GHG standards. As amended, CARB’s “deemed to comply” provision now provides that compliance with CARB’s GHG standards can be satisfied only by complying with the federal standards as those standards were promulgated in 2012. In other words, while the content of CARB’s GHG standards has never been identical to the corresponding Federal standards, the “deemed to comply” provision as originally designed, and as it existed when EPA issued the January 2013 waiver, would have shielded automobile manufacturers from having to comply with two conflicting sets of standards unless they chose to do so. After the December 2018 amendment, however, CARB’s regulations now contain within them a mechanism which will automatically impose that state of affairs the moment that the Federal government should exercise its authority to revise its standards. California has further recently announced a “voluntary agreement” with four automobile manufacturers that, among other things, requires the automobile manufacturers to refrain from challenging California’s GHG and ZEV programs. This “voluntary agreement” further provides that California will accept automobile manufacturer compliance with a less stringent standard (and one that extends the phase-in of the GHG standard from 2025 to 2026) than either the California program that was the subject of the 2013 waiver or the Federal standards as promulgated in 2012. Neither California’s amendment of its “deemed to comply” provision, nor its more recent announcement of the new

“voluntary agreement,” constitute a necessary part of the basis for the waiver withdrawal and other actions that EPA finalizes in this document, and EPA would be taking the same actions that it takes in this document even in their absence. Nevertheless, EPA does not believe it appropriate to ignore these recent actions and announcements on the State’s part, and, as discussed below, believes that they confirm that this action is appropriate.²⁰⁸

On January 9, 2013, EPA granted CARB’s request for a waiver of preemption to enforce its ACC program regulations pursuant to CAA section 209(b). 78 FR 2112. The ACC program comprises regulations for ZEV, tailpipe GHG emissions standards, and low-emission vehicles (LEV) regulations²⁰⁹ for new passenger cars, light-duty trucks, medium-duty passenger vehicles, and certain heavy-duty vehicles, for MY 2015 through 2025. Thus, in terms of the scope of coverage of the respective state and federal programs, the ACC program is comparable to the combined Federal Tier 3 Motor Vehicle Emissions Standards and the 2017 and later MY Light-duty Vehicle GHG Standards, with an additional mandate to force the development and deployment of non-internal-combustion-engine technology. According to CARB, the ACC program was intended to address California’s near and long-term ozone issues as well as certain specific GHG emission reduction goals.²¹⁰ 78 FR 2114. See also 78 FR 2122, 2130–2131. The ACC

²⁰⁸ EPA does not take any position at this point on what effect California’s December 2018 amendment to its “deemed to comply” provision, or its July 2019 “framework” announcement, may of their own force have had on the continued validity of the January 2013 waiver. EPA may address that issue in a separate, future action.

²⁰⁹ The LEV regulations in question include standards for both GHG and criteria pollutants (including ozone and PM).

²¹⁰ “The Advanced Clean Cars program . . . will reduce criteria pollutants . . . and . . . help achieve attainment of air quality standards; The Advanced Clean Cars Program will also reduce greenhouse gases emissions as follows: by 2025, CO₂ equivalent emissions will be reduced by 13 million metric tons (MMT) per year, which is 12 percent from base line levels; the reduction increases in 2035 to 31 MMT/year, a 27 percent reduction from baseline levels; by 2050, the proposed regulation would reduce emissions by more than 40 MMT/year, a reduction of 33 percent from baseline levels; and viewed cumulatively over the life of the regulation (2017–2050), the proposed Advanced Clean Cars regulation will reduce by more than 850 MMT CO₂-equivalent, which will help achieve the State’s climate change goals to reduce the threat that climate change poses to California’s public health, water resources, agriculture industry, ecology and economy.” 78 FR 2114. CARB Resolution 12–11, at 19, (January 26, 2012), available in the docket for the January 2013 waiver action, Document No. EPA–HQ–OAR–2012–0562, the docket for the ACC program waiver.

program regulations impose multiple and varying complex compliance obligations that have simultaneous, and sometimes overlapping, deadlines with each standard. These deadlines began in 2015 and are scheduled to be phased in through 2025. For example, compliance with the GHG requirements began in 2017 and will be phased in through 2025.²¹¹ The implementation schedule and the interrelationship of regulatory provisions with each of the three standards together demonstrates that CARB intended that at least the GHG and ZEV standards, if not also the LEV standards, would be implemented as a cohesive program. For example, in its ACC waiver request, CARB stated that the “ZEV regulation must be considered in conjunction with the proposed LEV III amendments. Vehicles produced as a result of the ZEV regulation are part of a manufacturer’s light-duty fleet and are therefore included when calculating fleet averages for compliance with the LEV III GHG amendments.” CARB’s Initial Statement of Reasons at 62–63.²¹² CARB also noted “[b]ecause the ZEVs have ultra-low GHG emission levels that are far lower than non-ZEV technology, they are a critical component of automakers’ LEV III GHG standard compliance strategies.” *Id.* CARB further explained that “the ultra-low GHG ZEV technology is a major component of compliance with the LEV III GHG fleet standards for the overall light duty fleet.” *Id.* CARB’s request also repeatedly touted the GHG emissions benefits of the ACC program. Up until the ACC program waiver request, CARB had relied on the ZEV requirements as a compliance option for reducing criteria pollutants. Specifically, California first included the ZEV requirement as part of its first LEV program, which was then known as LEV I, that mandated a ZEV sales requirement that phased-in starting with the 1998 MY through 2003 MY. EPA issued a waiver of preemption for these regulations on January 13, 1993 (58 FR 4166 (January 13, 1993)). Since this initial waiver of preemption, California has amended the ZEV requirements multiple times and EPA has

²¹¹ As discussed above, California has further entered into a voluntary agreement with four automobile manufacturers that amongst other things, purports to allow compliance with a less stringent program than either the program that was the subject of the 2013 waiver or the Federal standards promulgated in 2012. See <https://www.gov.ca.gov/2019/07/25/california-and-major-automakers-reach-groundbreaking-framework-agreement-on-clean-emission-standards/> (last visited Aug. 30, 2019).

²¹² Available in the docket for the January 2013 waiver decision, Docket No. EPA–HQ–OAR–2012–0562.

²⁰⁷ A complete description of the ACC program, as it existed at the time that CARB applied for the 2013 waiver, can be found in CARB’s waiver request, located in the docket for the January 2013 waiver action, Docket No. EPA–HQ–OAR–2012–0562.

subsequently granted waivers for those amendments. Notably, however, in the ACC program waiver request, California also included a waiver of preemption request for ZEV amendments that related to 2012 MY through 2017 MY and new requirements for 2018 MY through 2025 MY (78 FR 2118–9). Regarding the ACC program ZEV requirements, CARB’s waiver request noted that there was no criteria emissions benefit in terms of vehicle (tank-to-wheel—TTW) emissions because its LEV III criteria pollutant fleet standard was responsible for those emission reductions.²¹³ CARB further noted that its ZEV regulation was intended to focus primarily on zero emission drive—that is, battery electric (BEVs), plug-in hybrid electric vehicles (PHEVs), and hydrogen fuel cell vehicles (FCVs)—in order to move advanced, low GHG vehicles from demonstration phase to commercialization (78 FR 2122, 2130–31). Specifically, for 2018 MY through 2025 MY, the ACC program ZEV requirements mandate use of technologies such as BEVs, PHEVs and FCVs, in up to 15% of a manufacturer’s California fleet by MY 2025 (78 FR 2114). Additionally, the ACC program regulations provide various compliance flexibilities allowing for substitution of compliance with one program requirement for another. For instance, manufacturers may opt to over-comply with the GHG fleet standard in order to offset a portion of their ZEV compliance requirement for MY 2018 through 2021. Further, until MY 2018, sales of BEVs (since MY 2018, limited to FCVs)²¹⁴ in California count toward a manufacturer’s ZEV credit requirement in CAA section 177 States. This is known as the “travel provision” (78 FR 2120).²¹⁵ For their part, the GHG

emission regulations include an optional compliance provision that allows manufacturers to demonstrate compliance with CARB’s GHG standards by complying with applicable Federal GHG standards. This is known as the “deemed to comply” provision. Since proposal, California has amended its regulations to provide that the “deemed to comply” provision only applies to the standards originally agreed to by California, the federal government, and automakers in 2012. In other words, automobile manufacturers would not be able to rely on the “deemed to comply” provision for any revision to those 2012 standards. California has further entered into a voluntary agreement with four automobile manufacturers that amongst other things, requires the automobile manufacturers to refrain from challenging California’s GHG and ZEV programs, and provides that California will accept automobile manufacturer compliance with a less stringent standard than either the California program that was the subject of the 2013 waiver or the Federal standards as promulgated in 2012.

As explained in the SAFE proposal (83 FR 83 FR 23245–46), up until the 2008 GHG waiver denial, EPA had interpreted CAA section 209(b)(1)(B) as requiring a consideration of California’s need for a separate motor vehicle program designed to address local or regional air pollution problems and not whether the specific standard that is the subject of the waiver request is necessary to meet such conditions (73 FR 12156; March 6, 2008). We also explained that California would typically seek a waiver of particular aspects of its new motor vehicle program up until the ACC program waiver request. We further explained that in the 2008 GHG waiver denial, which was a waiver request for only GHG emissions standards, EPA had determined that its interpretation of CAA section 209(b)(1)(B) as calling for a consideration of California’s need for a separate motor vehicle program was not appropriate for GHG standards because such standards are designed to address global air pollution problems in contrast to local or regional air pollution problems specific to and caused by conditions specific to California (73 FR 12156–60). In the 2008 GHG waiver

denial, EPA further explained that its previous reviews of California’s waiver request under CAA section 209(b)(1)(B) had usually been cursory and undisputed, as the fundamental factors leading to California’s air pollution problems—geography, local climate conditions (like thermal inversions), significance of the motor vehicle population—had not changed over time and over different local and regional air pollutants. These fundamental factors applied similarly for all of California’s air pollution problems that are local or regional in nature. In the 2008 GHG waiver denial, EPA noted that atmospheric concentrations of GHG are substantially uniform across the globe, based on their long atmospheric life and the resulting mixing in the atmosphere. EPA therefore posited that with regard to atmospheric GHG concentrations and their environmental effects, the California specific causal factors that EPA had considered when reviewing previous waiver applications under CAA section 209(b)(1)(B)—the geography and climate of California, and the large motor vehicle population in California, which were considered the fundamental causes of the air pollution in California—do not have the same relevance to the question at hand. EPA explained that the atmospheric concentration of GHG in California is not affected by the geography and climate of California. The long duration of these gases in the atmosphere means they are well-mixed throughout the global atmosphere, such that their concentrations over California and the U.S. are substantially the same as the global average. The number of motor vehicles in California, while still a notable percentage of the national total and still a notable source of GHG emissions in the State, is not a significant percentage of the global vehicle fleet and bears no closer relation to the levels of GHG in the atmosphere over California than any other comparable source or group of sources of GHG anywhere in the world. Emissions of greenhouse gases from California cars do not generally remain confined within California’s local environment but instead become one part of the global pool of GHG emissions, with this global pool of emissions leading to a relatively homogenous concentration of GHG over the globe. Thus, the emissions of motor vehicles in California do not affect California’s air pollution problem in any way that is different from how emissions from vehicles and other pollution sources all around the U.S. (and, for that matter, the world) do.

²¹³ “There is no criteria emissions benefit from including the ZEV proposal in terms of vehicle (tank-to-wheel or TTW) emissions.” CARB ACC waiver request at 15 (May 2012), EPA–HQ–OAR–2012–0562–0004.

²¹⁴ This kind of ZEV technology continues to present technological challenges and in 2006, for instance, EPA granted California a waiver of its ZEV standards through the 2011MY but due to feasibility challenges declined to grant a waiver for MY 2012 and subsequent model years. See 71 FR 78190; EPA, EPA ZEV Waiver Decision Document, EPA–HQ–OAR–2004–0437 (Dec. 21, 2006).

²¹⁵ On March 11, 2013, the Association of Global Automakers and Alliance of Automobile Manufacturers filed a petition for reconsideration of the January 2013 waiver grant, requesting that EPA reconsider the decision to grant a waiver for MYs 2018 through 2025 ZEV standards on technological feasibility grounds. Petitioners also asked for consideration of the impact of the travel provision, which they argue raise technological feasibility issues in CAA section 177 States, as part of the agency’s review under the third waiver prong, CAA section 209(b)(1)(C). EPA continues to evaluate the

petition. As explained below, in this action EPA is not taking final action with regard to the proposed determinations under the third waiver prong. Whether and how EPA will respond to the March 2013 petition will be considered in connection with a potential future final action with respect to the proposed third prong determinations set forth in the SAFE proposal.

Similarly, the emissions from California's cars do not only affect the atmosphere in California but in fact become one part of the global pool of GHG emissions that affect the atmosphere globally and are distributed throughout the world, resulting in basically a uniform global atmospheric concentration. EPA then applied this reasoning to the GHG standards at issue in the 2008 GHG waiver denial. Having limited the meaning of this provision to situations where the air pollution problem was local or regional in nature, EPA found that California's GHG standards did not meet this criterion. Additionally, in the 2008 GHG waiver denial, EPA also applied an alternative interpretation where EPA would consider effects of the global air pollution problem in California in comparison to the effects on the rest of the country and again addressed the GHG standards separately from the rest of California's motor vehicle program. Under this alternative interpretation, EPA considered whether impacts of global climate change in California were sufficiently different from impacts on the rest of the country such that California could be considered to need its GHG standards to meet compelling and extraordinary conditions. EPA determined that the waiver should be denied under this alternative interpretation as well. 83 FR 23245–46.

In 2009, EPA reversed its previous denial and granted California's preemption waiver request for its GHG emission standards "for 2009 and later model years." 74 FR 32744. EPA announced that it was returning to what it styled as the traditional interpretation of CAA section 209(b)(1)(B), under which it would only consider whether California had a "need for its new motor vehicle emissions program as a whole," *id.* at 32761. It determined that California did, based on ongoing NAAQS attainment issues. *Id.* at 32762–32763. In the alternative, while not adopting either of the 2008 waiver denial's alternative approaches, EPA also determined that California needed its GHG standards as part of its NAAQS attainment strategy due to the indirect effects of climate change on ground-level ozone formation, *id.* at 32763, and that waiver opponents had not met their burden of proof to demonstrate that California climate impacts "are not sufficiently different" to nationwide impacts, *id.* at 32765. EPA also determined that there were no grounds to deny the waiver under CAA section 209(b)(1)(A) (whether the State's determination that its standards in the aggregate are at least as protective as

federal standards) or CAA section 209(b)(1)(C) (whether "such state standards" and accompanying enforcement procedures are inconsistent with CAA section 202(a)). *Id.* at 32759, 32780.

B. EPA's Authority To Reconsider and Withdraw a Previously Granted Waiver Under CAA Section 209(b)

In this action, EPA finalizes its proposed determination that it has the authority to withdraw a waiver in appropriate circumstances. EPA explains below (in this subsection, III.B) the basis for its conclusions that it has authority to withdraw a waiver in appropriate circumstances, and (in subsections III.C and III.D) that it is appropriate for EPA to exercise that authority at this time.²¹⁶

Agencies generally have inherent authority to reconsider their prior actions. Nothing in CAA section 209(b) indicates Congressional intent to remove that authority with respect to waivers that it has previously granted. The text, structure, and context of CAA section 209(b) support EPA's interpretation that it has this authority. And no cognizable reliance interests have accrued sufficient to foreclose EPA's ability to exercise this authority here.

In considering EPA's authority to withdraw a waiver, it is clear that EPA has authority to review and grant California's applications for a waiver based on its evaluation of the enumerated criteria in CAA section 209(b). In this action, we affirm the Agency's proposed view that the absence of explicit language with regard to withdrawal of a waiver does not foreclose agency reconsideration and withdrawal of a waiver.

As explained at proposal, California's ability to obtain a waiver under CAA section 209(b)(1) in the first instance is not unlimited. Specifically, CAA section

²¹⁶ As a general matter, for purposes of determining if withdrawal is appropriate, EPA may initiate reconsideration *sua sponte* where CARB amends either a previously waived standard or accompanying enforcement procedure. 47 FR 7306, 7309 (Feb. 18, 1982). See also 43 FR 998 (January 5, 1978) (Grant of reconsideration to address portions of waived California's motorcycle program that California substantially amended). Additionally, if California acts to amend either a previously waived standard or accompanying enforcement procedure, the amendment may be considered to be within-the-scope of a previously granted waiver provided that it does not undermine California's determination that its standards, in the aggregate, are as at least as protective of public health and welfare as applicable Federal standards, does not affect its consistency with section 202(a) of the Act, and raises no new issues affecting EPA's previous waiver decisions. See, e.g., 51 FR 12391 (April 10, 1986) and 65 FR 69673, 69674 (November 20, 2000).

209(b)(1) provides that "no such waiver will be granted" if the Administrator finds *any* of the following: "(A) [California's] determination [that its standards in the aggregate will be at least as protective] is arbitrary and capricious, (B) [California] does not need such State standards to meet compelling and extraordinary conditions, or (C) such State standards and accompanying enforcement procedures are not consistent with section [202(a)]." CAA section 209(b)(1)(A)–(C), 42 U.S.C. 7543(b)(1)(A)–(C) (emphasis added). CAA Section 209(b)(1) is therefore, premised on EPA review and grant of a waiver prior to California's enforcement of vehicle and engine standards unless certain enumerated criteria are met.

Congress could have simply carved out an exemption from preemption under CAA section 209(b)(1), similar to the exemption it created in CAA section 211(c)(4)(B) for California fuel controls and prohibitions. Under CAA section 211(c)(4)(A), states and political subdivisions are preempted from prescribing or attempting "to enforce, for purposes of motor vehicle emission control, any control or prohibition, respecting any characteristic or component of a fuel or fuel additive in a motor vehicle or motor vehicle engine" if EPA has prescribed a control or prohibition applicable to such characteristic or component of the fuel or fuel additive under CAA section 211(c)(1). EPA may waive preemption for states other than California to prescribe and enforce nonidentical fuel controls or prohibitions subject to certain conditions. Further, waivers are not required where states adopt state fuel controls or prohibitions that are identical to federal controls or for California to adopt fuel controls and prohibitions. CAA sections 211(c)(4)(A)(ii) and 211(c)(4)(B). This stands in stark contrast to CAA section 209(b), which requires EPA to make a judgment about California's request for a waiver of preemption.²¹⁷ Notably, CAA section 211(c)(4)(B) also cross-references CAA section 209(b)(1): "(B) Any State for which application of section 7543(a) of this title has at any time been waived under section 7543(b)²¹⁸ of this title may at any time

²¹⁷ "Noteworthy is the fact that under the terms of the Act, EPA approval of California fuel regulations is not required. See Act section 211(c)(4)(B), 42 U.S.C. 7545(c)(4)(B)." (Emphasis in original.) *Motor Vehicle Mfrs. Ass'n v. NYS Dep. of Env't'l Conservation*, 17 F.3d 521, 527 (2d Cir. 1994).

²¹⁸ CAA section 211(c)(4)(B), 42 U.S.C. 7545(c)(4)(B). This provision does not identify California by name. Rather, it references CAA

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prescribe and enforce, for the purpose of motor vehicle emission control, a control or prohibition respecting any fuel or fuel additive.” CAA section 211(c)(4)(B).

Under the third waiver prong, CAA section 209(b)(1)(C), for example, EPA is to review the consistency of California’s standards with CAA section 202(a), a provision of the Clean Air Act that EPA solely implements.²¹⁹ CAA Section 202(a) provides in relevant part that standards promulgated under this section “shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period.”

In tying the third waiver prong to CAA section 202(a), Congress gave a clear indication that, in determining whether to grant a waiver request, EPA is to engage in a review that involves a considerable degree of future prediction, due to the expressly future-oriented terms and function of CAA section 202(a).²²⁰ In turn, where circumstances

section 209(b), which applies on its face to “any State which has adopted standards (other than crankcase emission standards) for the control of emissions from new motor vehicles or new motor vehicle engines prior to March 30, 1966.” California is the only State that meets this requirement. See S. Rep. No. 90–403 at 632 (1967).

²¹⁹ EPA has explained that California’s standards are not consistent with CAA section 202(a) if there is inadequate lead time to permit the development of technology necessary to meet those requirements, given appropriate consideration to the cost of compliance within that time. California’s accompanying enforcement procedures would also be inconsistent with CAA section 202(a) if the Federal and California test procedures were inconsistent. Legislative history indicates that under CAA section 209(b)(1)(C), EPA is not to grant a waiver if it finds that there is: “Inadequate time to permit the development of the necessary technology given the cost of compliance within that time period.” H. Rep. No. 728, 90th Cong., 1st Sess. 21 (1967); “That California standards are not consistent with the intent of section 202(a) of the Act, including economic practicability and technological feasibility.” S. Rep. No. 403, 90th Cong. 1st Sess. 32 (1967).

²²⁰ There is another textual indication that EPA’s grant of a waiver is not limited to a snapshot in time, with the Agency having no authority to ever revisit, reconsider, and, where appropriate, modify or withdraw waivers that it has previously granted. CAA section 209(b) provides authority to waive the preemptive provision of CAA section 209(a). CAA section 209(a) forbids states from “adopt[ing] or attempt[ing] to enforce” vehicle emission standards; so states cannot do so without or beyond the scope of a waiver. EPA must presume that “attempt to enforce” is not surplusage; it must mean something, and its potential meanings all suggest some ability on EPA’s part to consider actions on the state’s part separate from the state’s “adopt[ion]” of statutory or regulatory provisions and submission to EPA of a waiver request for those provisions. An “attempt to enforce” could potentially mean either a state’s attempt to *de facto* control emissions without having *de jure* codified emissions control requirements, or it could refer to a state’s

arise that suggest that such predictions may have been inaccurate, it necessarily follows that EPA has authority to revisit those predictions with regard to rules promulgated under CAA section 202(a), the requirements of that section, and their relation to the California standards at issue in a waiver request, and, on review, withdraw a previously granted waiver where those predictions proved to be inaccurate.

Under CAA section 202(a), standards are often technology-forcing and thus involve predictions on the part of EPA with regard to future trends in technological and economic factors. This calls for “substantial room for deference to the EPA’s expertise in projecting the likely course of development.” *Natural Resources Defense Council v. EPA (NRDC)*, 655 F.2d 318, 331 (D.C. Cir. 1981) (upholding EPA’s lead time projections for emerging technologies as reasonable). The D.C. Circuit has recognized that EPA might modify standards “if the actual future course of technology diverges from expectation.” *Id.* at 329. It cannot be that EPA has the inherent authority to revisit and revise its own determinations under CAA section 202(a), but it lacks authority to revisit those same determinations under CAA section 209(b).²²¹

Thus, the structure of the statute—where State standards may only be granted a waiver under CAA section 209(b) to the extent that they are consistent with CAA section 202(a)—confirms that EPA has inherent authority to reconsider its prior determination that a request for a waiver for California standards met the criteria of CAA section 209(b). This renders untenable the stance taken by some commenters that EPA is somehow precluded from conducting a subsequent review and withdrawing a waiver even when it becomes aware that its initial predictions in this regard have proven inaccurate.

enforcement actions under a program that it has already “adopt[ed].” Under either scenario, the prohibition on “attempt[ing] to enforce” envisions state activity outside the scope of what can be determined by EPA from the face of a waiver submission. The prohibited activity is not limited to that which can be subject to a snapshot, one-time-only waiver application, which is further support for the conclusion that EPA has authority to reconsider its action on such applications in light of activity later in time than or outside the authorized scope of a waiver once granted.

²²¹ According to one commenter, “it would be very odd if § 209(b) waivers were a one-way ratchet that could be granted but never rescinded. . . . For example, it would run contrary to the statutory scheme to require EPA to leave a waiver in place even after the compelling and extraordinary conditions that justified the waiver are fully addressed.” Comments of the Alliance of Automobile Manufacturers at 182. EPA agrees.

Further, as discussed in the SAFE proposal, the legislative history of CAA section 209(b) confirms that Congress intended EPA’s authority under CAA section 209(b) to include the authority to withdraw a previously granted waiver under appropriate circumstances. 83 FR 43242–43243. See S. Rep. No. 50–403, at 34 (1967) (“Implicit in this provision is the right of the [Administrator] to withdraw the waiver at any time [if] after notice and an opportunity for public hearing he finds that the State of California no longer complies with the conditions of the waiver.”).

Some commenters that oppose the proposed withdrawal of the waiver concede that the agency may review California’s waiver applications under the third waiver prong but then argue that such agency review is a “narrow one.”²²² Under CAA Section 209, they contend, grants California “maximum authority” to set engine and vehicle standards. Commenters’ objection to the instant withdrawal therefore appears to be grounded in some belief that CAA section 209(b) calls for complete deference to California. This view is erroneous. EPA has in fact previously initiated reconsideration under the third waiver prong, CAA section 209(b)(1)(C), in order to “vacate that portion of the waiver previously granted under section 209(b)” in response to CARB’s post waiver modification for previously waived standards. 47 FR 7309. In that reconsideration action, EPA affirmed the grant of a waiver in the absence of “findings necessary to revoke California’s waiver of Federal preemption for its motorcycle fill-pipe and fuel tank opening regulations.” 43 FR 7310. Additionally, EPA has explained that reconsideration will be initiated where leadtime concerns arise after the grant of an initial waiver. “If California’s leadtime projections later prove to have been overly optimistic, the manufacturer can ask that California reconsider its standard, if they are unsuccessful in securing such relief, the

²²² According to several commenters, CAA section 209(b) contains no express delegation of authority to EPA to withdraw a waiver, and in proposing to revoke a previous waiver “EPA has arrogated to itself power only Congress can exercise.” Comments of the Center for Biological Diversity, Conservation Law Foundation, EarthJustice, Environmental Defense Fund, Environmental Law and Policy Center, Natural Resources Defense Council, Public Citizen, Inc., Sierra Club, and Union of Concerned Scientists at 68. One commenter also argued that either EPA lacks authority to revoke a previously granted waiver or that any authority to do so is “limited.” “The unique text and structure of this section *limits* EPA’s authority, contrary to EPA’s assertion of open-ended revocation authority in the proposal.” Comments of the California Air Resources Board at 340.

manufacturers could petition EPA to reconsider the waiver.” 49 FR 18895, 18896 n.104. Further, EPA has in the past repeatedly denied portions of several waiver requests.²²³ EPA has also historically deferred or limited the terms of its grant of aspects of some waiver requests as a means of ensuring consistency with CAA section 202(a).²²⁴ It is precisely these kinds of EPA actions that have forestalled withdrawal of any waiver to date—not any lack of authority on EPA’s part to withdraw. None of the commenters, however, provided explanations as to why their apparent view of maximum deference to California is not implicated by EPA’s authority to either deny a waiver request or to modify the terms of a waiver request in the course of granting one. And EPA’s 2009 reversal of its 2008 denial supports, and demonstrates the long-held nature of, its position that EPA has authority to reconsider and reverse its actions on waiver applications.²²⁵

At least one commenter argued that this legislative history did not support the position that EPA has authority to withdraw a previously granted waiver because the legislative history relates to the original creation of the waiver provision in the Air Quality Act of 1967, whereas the Clean Air Act Amendments of 1977 revised language in the root text of CAA section 209(b)(1). Specifically, Congress in 1977 amended CAA section 209(b)(1) to establish as a prerequisite for the grant of a waiver that the State determine that its standards “will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards” for EPA to issue a waiver, rather than the original requirement that State standards be “more stringent” than corresponding federal standards.²²⁶ EPA disagrees that

this amendment was either intended to deprive EPA of authority to withdraw a previously granted waiver when the Administrator finds applicable one or more of the three criteria in CAA section 209(b)(1) under which a waiver is inappropriate, or that the amendment can be reasonably construed to have had such effect. There is no indication that the amendment was intended to alter EPA’s authority under the original provision. Nor did the amendment alter the language of the criteria enumerated in CAA section 209(b). In any event, as previously discussed above, EPA has initiated reconsideration for purposes of revoking a waiver since the 1977 CAA amendments. See for example, 47 FR 7306 (Feb. 18, 1982) (Agency reconsideration of grant of waiver for purposes of withdrawal in response to CARB’s post waiver modification for previously waived standards).

Some commenters question whether EPA has any authority at all to reconsider a previously granted waiver. It is well-settled, however, that EPA has inherent authority to reconsider, revise, or repeal past decisions to the extent permitted by law. At proposal, EPA explained that, although CAA section 209(b)(1) may not expressly communicate that EPA has authority to reconsider and withdraw a waiver, both the legislative history of the waiver provision and fundamental principles of administrative law establish that EPA necessarily possesses that authority. The authority to reconsider prior agency decisions need not be rooted in any particular “magic words” in statutory text. Subject to certain limitations, administrative agencies possess inherent authority to reconsider their decisions. See *ConocoPhillips Co. v. EPA*, 612 F.3d 822, 832 (5th Cir. 2010) (“Embedded in an agency’s power to make a decision is its power to reconsider that decision.”); *Dun & Bradstreet Corp. Found. v. U.S. Postal Serv.*, 946 F.2d 189, 193 (2d Cir. 1991) (“It is widely accepted that an agency may, on its own initiative, reconsider its interim or even its final decisions, regardless of whether the applicable statute and agency regulations expressly

provide for such review.”); *Mazaleski v. Treusdell*, 562 F.2d 701, 720 (D.C. Cir. 1977) (“[A]n agency has the inherent power to reconsider and change a decision if it does so within a reasonable period of time.”); *Belville Min. Co. v. United States*, 999 F.2d 989, 997 (6th Cir. 1993) (“Even where there is no express reconsideration authority for an agency, however, the general rule is that an agency has inherent authority to reconsider its decision, provided that reconsideration occurs within a reasonable time after the first decision.”).

The commenters’ position that EPA does not have any authority to reconsider either a grant or a denial of a waiver founders in light of these principles. As explained in the SAFE proposal, 83 FR 43242–43243, EPA does have that authority, in part because its interpretations of the statutes it administers “are not carved in stone.” *Chevron U.S.A. v. NRDC*, 467 U.S. 837, 863 (1984). An agency “must consider varying interpretations and the wisdom of its policy on a continuing basis.” *Id.* at 863–64. Notably, in response to CARB’s request, EPA has previously reconsidered and reversed a previous waiver denial.²²⁷ Similarly, in keeping with agency CAA section 209(b)(1) practice, EPA has reconsidered its previous decision to grant a waiver for portions of California’s motorcycle program in response to a petition for reconsideration from the motorcycle industry.²²⁸

Other commenters assert that EPA’s proposal to withdraw the waiver is solely based on a change in Presidential administration. There is no basis for this claim. While EPA noted in the SAFE proposal that the agency can review and reconsider a prior decision “in response to . . . a change in administration,” *National Cable & Telecommunications Ass’n v. Brand X Internet Services*, 545 U.S. 967, 981 (2005), we further acknowledged that “the EPA must also be cognizant where it is changing a prior position and articulate a reasoned basis for the change.” *FGC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009). 83 FR 43242–43243, 43248. In keeping with the proposed waiver withdrawal, under the second waiver prong, CAA section 209(b)(1)(B), as discussed below, EPA in this document finalizes a determination that California does not

²²³ 38 FR 30136 (November 1, 1973) (denial of waiver for MY 1975 HC and CO standards “because costs of compliance within the lead time remaining is excessive.”); 43 FR 998 (January 5, 1978) (denial of waiver for MY 1978 test procedures due to insufficient lead time); 40 FR 30311 (July 18, 1975) (denial of waiver due to insufficient lead time for MY 1977).

²²⁴ 58 FR 4166 (January 13, 1993) (deferring consideration of portions of waiver request); 67 FR 54180, 81 n.1 (August 21, 2002) (granting waiver with certain exceptions).

²²⁵ In seeking reconsideration of the March 8, 2008 waiver denial, CARB also noted that “EPA has the inherent authority to reconsider its previous waiver denial” 74 FR 32747.

²²⁶ The intent of the 1977 amendment was to accommodate California’s particular concern with NO_x, which the State regarded as a more serious threat to public health and welfare than carbon monoxide. California was eager to establish oxides of nitrogen standards considerably more stringent than applicable Federal standards, but technological developments posed the possibility that emission control devices could not be

constructed to meet both the stringent California oxides of nitrogen standard and the stringent federal carbon monoxide standard. *Motor & Equip. Mfrs. Ass’n, Inc. v. EPA*, 627 F.2d at 1110 n.32. EPA has explained that the phrase “in the aggregate” was specifically aimed at allowing California to adopt CO standards less stringent than the corresponding federal standards, while at the same time adopting more stringent NO_x standards, as part of California’s strategy to address ozone problems. California reasoned that a relaxed CO standard would facilitate the technological feasibility of more stringent NO_x standards. 78 FR 43247.

²²⁷ EPA reconsidered the 2008 GHG waiver denial in response to CARB’s request and granted it upon reconsideration. 72 FR 32744 (July 9, 2009). See also 43 FR 998 (January 5, 1978) (Grant of reconsideration to address portions of waived California’s motorcycle program that California substantially amended).

²²⁸ 43 FR 998 (January 5, 1978).

need its GHG and ZEV standards to meet compelling and extraordinary conditions, within the meaning of those terms as they are used in the statute, that differs from its determination on the same question made in the course of granting the ACC program waiver. Additionally, the agency, in response to a request by automobile manufacturers, who have consistently expressed reservations over their ability to comply with MY 2022–2025 GHG standards, is reconsidering standards that are the compliance mechanism for CARB’s MY 2022–2025 GHG standards. This is the compliance mechanism that California had provided in response to automobile manufacturers request and support for the waiver of preemption.

At proposal, EPA noted that California had given public notice that it was considering amending its “deemed to comply” provision to provide that that provision would be applicable only to vehicles that meet the standards originally agreed to by California, the federal government, and automakers in 2012. *See* 83 FR 43252 n.589. California finalized that amendment to its regulations after the close of the SAFE comment period, in late 2018. California more recently, in July 2019, announced a “framework” agreement with certain automakers that purported to establish a “nationwide” standards program different from both the 2012 Federal standards and from the California program for which EPA granted the January 2013 waiver. These actions on California’s part, while not proposed as bases for waiver withdrawal in the August 2018 SAFE proposal, as those actions had not yet transpired at the time of proposal, and while not necessary for the finalization of this action, do provide further support for this action (although EPA does not view them as necessary predicates for this action and would be taking this action even in their absence).

Thus, contrary to some commenters’ assertions, reconsideration of the grant of the waiver, and EPA’s proposal to withdraw the waiver, was not solely motivated by a change in Presidential administration. The policy, technical, and legal considerations discussed in the proposal and in this final action provide the rationale for EPA’s actions here. It is therefore distinguishable from the instance where, for example, an agency undertook reconsideration subsequent to a change in administration because “the withdrawn decision was doubtful in light of changing policies.” *Coteau Properties Co. v. DOI*, 53 F.3d 1466, 1479 (8th Cir. 1995).

Further, as earlier noted, California has now entered into a voluntary agreement with at least four automobile manufacturers that amongst other things, requires the automobile manufacturers to refrain from challenging California’s GHG and ZEV programs, and provides that California will accept automobile manufacturer compliance with a less stringent standard than either the California program that was the subject of the 2013 waiver or the Federal standards as promulgated in 2012.²²⁹ This agreement appears to materially depart from the existing grant of waiver for MY 2021–2025 GHG standards, is in tension with California’s above-mentioned amendment of the “deemed to comply” provision, and raises an additional reason to question whether California “needs” their existing standards within the meaning of CAA section 209(b)(1)(B), given that California has announced it is proceeding to create a new “voluntary” program that would relax the stringency of some aspects of those standards. That is to say, California’s apparent weakening of its program as it was originally submitted for waiver calls into question whether it needs that program. EPA believes that this provides additional support for its conclusion, as set forth in subsections III.B and III.D, both that it has authority to withdraw its grant of the waiver and that California does not in fact need these waived standards to meet “compelling and extraordinary conditions,” CAA section 209(b)(1)(B), if the State is itself already proceeding to allow departures from those waived standards.²³⁰ EPA further believes that California cannot claim reliance interests when it is undertaking steps to alter the *status quo*.

In short, the text, structure, and history of CAA section 209(b)(1) support EPA’s authority to withdraw previously granted waivers.²³¹ At the same time, nothing in CAA section 209(b)(1) can reasonably be read to preclude the agency from withdrawing a previously issued waiver under appropriate

²²⁹ <https://www.gov.ca.gov/2019/07/25/california-and-major-automakers-reach-groundbreaking-framework-agreement-on-clean-emission-standards/>.

²³⁰ Again, neither California’s late 2018 amendment to its “deemed to comply” provision, nor its July 2019 announcement of a new “framework,” are necessary bases for the action EPA takes in this document; instead, they provide further support for that action.

²³¹ In 2009, EPA reconsidered the 2008 GHG waiver denial at CARB’s request and granted it upon reconsideration. 74 FR 32744. EPA noted the authority to “withdraw a waiver in the future if circumstances make such action appropriate.” *See* 74 FR 32780 n.222; *see also id.* at 32752–32753 n.50 (citing 50 S. Rep. No. 403, at 33–34).

circumstances. EPA is not persuaded by commenters’ assertions to the contrary. In this action, EPA affirms the position that the scope of review for California waivers under CAA section 209(b)(1) includes both a pre-grant review and, where appropriate, post-grant review of an approved waiver; that post-grant review may, in appropriate circumstances, result in a withdrawal of a prior waiver. A withdrawal action could be premised on any one of the three findings in CAA section 209(b)(1)(A)–(C) that render a waiver unavailable.

EPA also disagrees with some commenters’ assertions that ostensible reliance interests foreclose withdrawal of the waiver for MY 2021–2025 GHG and ZEV standards. According to these commenters, “California, and the section 177 states that have elected to adopt those standards as their own have incurred reliance interests ultimately flowing from those standards. For instance, California has incurred reliance interests because it is mandated to achieve an aggressive GHG emissions reduction target for 2030.”²³² They further state: “[b]ut EPA provides no justification for applying that change in policy *retroactively* to upend a five-year-old decision to which substantial reliance interests have attached.” (Emphasis in original).²³³

The federal GHG standards that EPA promulgated in 2012 included a commitment to conduct and complete a Mid-Term Evaluation (MTE) of the GHG standards for MY 2022–2025, given the lengthy phase-in compliance period, EPA projections of control technology availability or feasibility for MY 2021–2025, and the fact that EPA promulgated those standards in a joint action with NHTSA, where NHTSA was acting under a statute which limited its promulgation of fuel economy standards to periods of five years.²³⁴ *See NRDC*,

²³² Comments of CARB at 83.

²³³ Comments of States of California, Connecticut, Delaware, Hawaii, Iowa, Illinois, Maine, Maryland, Minnesota, New Jersey, New Mexico, New York, North Carolina, Oregon, Rhode Island, Vermont and Washington, the Commonwealth of Massachusetts, Pennsylvania and Virginia, the District of Columbia, and the Cities of Los Angeles, New York, Oakland, San Francisco and San Jose at 123; Comments of CARB at 352.

²³⁴ 40 CFR 86.1818–12(h). 77 FR 62624 (October 15, 2012). EPA notes in this regard that the Supreme Court in *Massachusetts v. EPA*, in rejecting the position that greenhouse gases are not air pollutants under the general definition of that term in CAA section 302 because, if they were, EPA’s regulations of GHG emissions from the motor vehicle fleet could intrude on DOT’s fuel economy authority, opined that “[t]he two obligations may overlap, but there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency.” 549 U.S. 497, 532 (2007). In order for the two agencies to do so, they

655 F.2d at 329 (upholding EPA’s lead time projections for emerging technologies as reasonable, noting a longer lead time tends to “give[] the agency greater leeway to modify its standards if the actual future course of technology diverges from expectation.”). The 2012 rulemaking also established the GHG standards for MY 2021–2025 that are the subject of the “deemed to comply” provision. (*i.e.*, California allowed automobile manufacturers to demonstrate compliance with California’s GHG standards by complying with EPA’s GHG standards). The MTE construct required EPA to issue a Final Determination by April 1, 2018 regarding whether the GHG standards for MY 2022–2025 remained appropriate under CAA section 202(a).²³⁵ Specifically, the MTE would, amongst other things, assess the relevant factors pertinent to setting standards under CAA section 202(a), such as the feasibility and practicability of the standards, costs to vehicle manufacturers and consumers, impacts on the automobile industry, emissions impacts, and safety impacts. In comments during the 2012 national GHG rulemaking, automakers supported the MTE, and several expressly predicated their support of the GHG standards for MY 2022–2025 on the MTE.²³⁶ In the waiver action, EPA reiterated its commitment to the MTE in light of these considerations.²³⁷

In these circumstances, where GHG standards were being set far into the future with an explicit commitment to revisit them, where California agreed to deem compliance with certain federal GHG standards to constitute compliance with California standards, and where all parties were provided ample notice that

needed to take account of the fact that DOT’s fuel-economy authority faces temporal constraints that EPA’s emissions authority does not. They did so through the MTE, and the MTE mechanism provided notice to all interested parties that EPA’s 2012 federal standards under CAA section 202(a), and EPA’s January 2013 waiver grounded in part on a finding that the State provisions subject to the waiver were compatible with CAA section 202(a), would be subject to review and possibly revision within a few years of the waiver grant. Under these circumstances, no reliance interests accrued sufficient to foreclose EPA’s authority to reconsider and withdraw the waiver.

²³⁵ The MTE process also called for a “draft Technical Assessment Report” (to be prepared no later than November 15, 2017), public comments on that draft report, and public comments on whether the model year 2022–2025 standards are “appropriate” under CAA section 202(a).

²³⁶ 77 FR at 62636, 62652, 62785.

²³⁷ “EPA is committed to conducting a mid-term evaluation for MYs 2022–2025 in close coordination with NHTSA and CARB given the long-time frame in implementing standards out to MY 2025 and given NHTSA’s obligation to conduct a separate rulemaking in order to establish final standards for vehicles for those years.” 78 FR 2137.

EPA would be revisiting federal standards and, accordingly, the waiver granted for a program that acceded to those standards through the “deemed to comply” provision, neither the State of California nor other parties (such as automakers) have reasonable reliance interests sufficient to foreclose the extension of federal standards to California. Likewise, under CAA section 177, even though States other than California, under certain circumstances and conditions, may “adopt and enforce” standards that are “identical to the California standards for which EPA has granted a waiver for such model year,” given that Title I²³⁸ does not call for NAAQs attainment planning as it relates to GHG standards, those States that may have adopted California’s GHG standards and ZEV standards for certain MYs would also not have any reliance interests as a result of the grant of the ACC program waiver. As previously noted, CAA section 177 States also lack reliance interests sufficient to preclude reconsideration and withdrawal of the waiver both because they were on notice of the commitment to review the federal standards, as discussed above.²³⁹ Relatedly, with the revocation of these standards in this action there will be no “standards identical to the California standards for which a waiver has been granted” that any state may adopt and enforce, under CAA section 177(1).²⁴⁰ (States may not “tak[e] any action that has the effect of creating a car different from those produced to meet either federal or California emission standards, a so-called ‘third vehicle.’” *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. New York State Dep’t of Env’tl. Conservation*, 17 F.3d 521, 528 (2d Cir. 1994)). California also did not seek approval for MY 2021–2025 GHG standards in its 2016 SIP approval request. 81 FR 39424, 27–28 (June 16, 2016).

As a general matter, “[w]henver a question concerning administrative, or judicial, reconsideration arises, two opposing policies immediately demand recognition: The desirability of finality, on the one hand, and the public interest

²³⁸ Under title I of the Clean Air Act, EPA establishes national ambient air quality standards (NAAQS) to protect public health and welfare, and has established such ambient standards for ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, and particulate matter.

²³⁹ “This new State authority should not place an undue burden on vehicle manufacturers who will be required, in any event, to produce vehicles meeting the California standards for sale in California.” H.R. Conf. Rep. No. 95–294, 95th Cong., 1st Sess. 337 (1977).

²⁴⁰ A State may not “make attempt[s] to enforce” California standards for which EPA has not waived preemption. *Motor Vehicle Mfrs. Ass’n v. NYS Dep. of Env’tl. Conservation*, 17 F.3d 521, 534 (2d Cir. 1994).

in reaching what, ultimately, appears to be the right result on the other.” *Civil Aeronautics Bd. v. Delta Air Lines, Inc.*, 367 U.S. 316, 321–22 (1961). *See also ConocoPhillips*, 612 F.3d at 832 (5th Cir. 2010) (“Furthermore, reconsideration also must occur within a reasonable time after the decision being reconsidered was made, and notice of the agency’s intent to reconsider must be given to the parties.”); *Belville Min. Co. v. United States*, 999 F.2d 989, 997 (6th Cir. 1993) (“Even where there is no express reconsideration authority for an agency, however, the general rule is that an agency has inherent authority to reconsider its decision, provided that reconsideration occurs within a reasonable time after the first decision.”); *Bookman v. United States*, 453 F.2d 1263, 1265 (Fed. Cir. 1972) (“[A]bsent contrary legislative intent or other affirmative evidence, this court will sustain the reconsidered decision of an agency, as long as the administrative action is conducted within a short and reasonable time period.”).

For the reasons stated above, there was no “finality” in the federal MY 2021–2025 GHG standards that EPA promulgated in 2012 in the sense required for cognizable reliance to accrue sufficient to foreclose EPA’s exercise of authority to reconsider and, if appropriate, withdraw the waiver. Nor is such “finality” to be found in the January 2013 grant of the waiver for California’s MY 2021–2025 GHG and ZEV standards. As explained at proposal, in granting the waiver for the ACC program GHG and ZEV standards, EPA had evaluated certain compliance flexibilities allowed by California under the third waiver prong, CAA section 209(b)(1)(C) (consistency with CAA section 202(a)). Specifically, EPA evaluated California regulations that included an optional compliance provision (the “deemed to comply” provision) that would allow automobile and engine manufacturers to demonstrate compliance with CARB’s GHG standards for MY 2017–2025 by complying with applicable national or federal GHG standards. 78 FR 2136. During the waiver proceedings, most automobile manufacturers either opposed the grant of the waiver for MY 2021–2025 GHG and ZEV standards as not consistent with CAA section 202(a)²⁴¹ or premised their support for

²⁴¹ 78 FR 2132 (manufacturers suggested that EPA should grant California’s waiver request after CARB finalized its regulatory amendments to allow for a national compliance option; manufacturers oppose granting the waiver for the ZEV program past the 2017 MY, asserting that those standards will not be feasible either in California or in the individual

Continued

those standards on California's permitting compliance through the "deemed to comply" provision.²⁴² In comments on the proposed withdrawal, California did not contest this aspect of the waiver proceedings. For example, California in its comments on the SAFE proposal, at page 57, states "[b]ecause the federal program was expected to achieve GHG emission reductions that are equivalent to the California program, CARB modified its LEV III GHG regulation to continue to allow the 'deemed to comply' option beyond model year 2016, by accepting federal compliance with the EPA standards as sufficient to demonstrate compliance with California's standards for the 2017 through 2025 model years." Additionally, most automobile manufacturers indicated that they would comply with California's GHG standards through the "deemed to comply" provision. Both California and some automobile manufacturers also alluded to their expectations that standards would be revised in the future in light of technological feasibility and cost considerations surrounding MY 2022–2025 GHG standards.^{243 244}

CAA section 177 States given the status of the infrastructure and the level of consumer demand for ZEVs; dealers suggest that EPA should not grant California a waiver for its ZEV and GHG emission standards past MY 2018 and 2021, respectively, asserting that technical capabilities after that time are uncertain.).

²⁴² "[T]his national compliance option is integral to the commitment letters the industry and California signed in July 2011 and to the single national GHG/fuel economy program all stakeholders sought to achieve." 78 FR 2138.

²⁴³ 78 FR 2128. A waiver "will remain an important backstop in the event the national program is weakened or terminated;" manufacturers note that both the federal and the California GHG emission standards provide for a comprehensive mid-term evaluation of the MYs 2022–2025; manufacturers clearly state that "[a]ny amendments to California's GHG emission standards made as a result of the mid-term evaluation will require analysis to determine whether the amendments fall within the scope of this waiver, or, if not, whether they qualify for a separate waiver under Section 209(b) of the Clean Air Act." 78 FR 2132. *See also*, e.g., comments of the National Automobile Dealers Association, n.43. On March 11, 2013, the Association of Global Automakers and Alliance of Automobile Manufacturers filed a petition for reconsideration of the January 2013 waiver grant, requesting that EPA reconsider the decision to grant a waiver for MYs 2018 through 2025 ZEV standards on technological feasibility grounds. Petitioners also asked for consideration of the impact of the travel provision, which they argue raise technological feasibility issues in CAA section 177 States, as part of the agency's review under the third waiver prong, CAA section 209(b)(1)(C). EPA continues to evaluate the petition. As explained below, in this action EPA is not taking final action with regard to the proposed determinations under the third waiver prong. Whether and how EPA will respond to the March 2013 petition will be considered in connection with a potential future final action with respect to the proposed third prong determinations set forth in the SAFE proposal.

Regarding whether EPA is foreclosed from reconsidering its January 2013 waiver grant due to the passage of time, on January 12, 2017, well in advance of the April 2018 deadline that it had set for itself, EPA completed the Mid-Term Evaluation called for under the 2012 national GHG standards, determining that the MY 2017–2025 GHG standards promulgated in that rulemaking were appropriate. Automobile manufacturers, however, petitioned EPA for reconsideration of that January 2017 determination. In March 2017, EPA granted this petition for reconsideration. 82 FR 14671 (Mar. 22, 2017). In March 2017 California completed its own Mid-Term Evaluation review, in which it arrived at different conclusions on technological feasibility and costs for these standards than those that EPA would later reach. Subsequently, in April 2018, consistent with the timing specified in its regulations, EPA revised its finding on the appropriateness of the federal MY 2022–2025 GHG standards, concluding that those standards "are not appropriate and, therefore, should be revised."²⁴⁵ This finding provided notice of a reasonable possibility that these federal GHG standards would likely be changing.²⁴⁶ In the April 2018 action, EPA also withdrew the January 2017 finding. 83 FR at 16077. Since then California has challenged this revised finding; that challenge is pending in the United States Court of Appeals for the District of Columbia. *California v. EPA*, No. 18–1114 (D.C. Cir. argued Sept. 6, 2019). Moreover, California in December 2018 amended the "deemed to comply" provision in its regulations after the publication of the SAFE proposal, and in July 2019 announced a putative nationwide framework for vehicle standards, as discussed above.

These procedural aspects of the federal GHG standards and the grant of a waiver for California's ACC program are indicative of the absence of the possibility of reasonable reliance in the "finality" of the waiver, contrary to commenters' assertion of reliance interests. For instance, as shown above, the engine and vehicle manufacturers have not only complained about the

stringency of MY 2021–2025 GHG and ZEV standards, but also requested reconsideration of both the waiver as it relates to the ZEV standards, and the 2017 Mid-Term Evaluation that addresses the "deemed to comply" provision, which California provided in response to their request. EPA has also initiated joint rulemaking with NHTSA that proposes amended EPA GHG standards and fuel economy standards for MY 2021–2026. *See*, the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks. 83 FR 42986 (Aug. 24, 2018). As also previously noted, automobile and engine manufacturers operated under the assumption that both California and national standards would, or at least could, be revised.²⁴⁷ These circumstances are sufficient to put California and others on notice that standards were in flux such that they could not give rise to reasonable reliance interests. Further, CAA section 177 States do not have any reliance interests that are engendered by the withdrawal of the waiver for the MY 2021–2025 GHG and ZEV standards. As previously explained, although CAA section 177 allows States other than California to adopt standards that are promulgated by California and for which a waiver of preemption is granted by EPA pursuant to CAA section 209, CAA section 177 States may do so only subject to certain conditions and circumstances. None of these conditions and circumstances, however, are at issue in this waiver decision, in light of EPA's determination that CAA section 177 does not apply to states seeking to adopt and enforce CARB's GHG standards. As also previously noted, with the revocation of these standards in this action, there will be no "standards identical to the California standards for which a waiver has been granted" that any state may adopt and enforce, under CAA section 177(1).²⁴⁸ States may not "tak[e] any action that has the effect of creating a car different from those produced to meet either federal or California emission standards, a so-called 'third vehicle.'" *Motor*

²⁴⁴ Since the grant of the ACC waiver program, engine and vehicle manufacturers who voiced concerns about the stringency of MY 2021–2025 GHG and ZEV standards during the waiver proceedings have requested both reconsideration of the grant of the waiver for the ZEV standards (which is a compliance mechanism for the GHG standards) and aspects of the national GHG program.

²⁴⁵ Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022–2025 Light-Duty Vehicles: Notice; Withdrawal. 83 FR 16077 (Apr. 13, 2018).

²⁴⁶ 82 FR 14671 (Mar. 22, 2017).

²⁴⁷ "The manufacture of automobiles is a complex matter, requiring decisions to be made far in advance of their actual execution. The ability of those engaged in the manufacture of automobiles to obtain clear and consistent answers concerning emission controls and standards is of considerable importance so as to permit economies in production." S. Rep. No. 403, 90th Cong., at 730 1st Sess. (1967).

²⁴⁸ A State may not "make attempt[s] to enforce" California standards for which EPA has not waived preemption. *Motor Vehicle Mfrs. Ass'n v. NYS Dep. of Envtl Conservation*, 17 F.3d 521, 534 (2d Cir. 1994).

Vehicle Mfrs. Ass'n of U.S., Inc. v. New York State Dep't of Env'tl Conservation, 17 F.3d 521, 528 (2d Cir. 1994).

California's comments argue that EPA cannot revisit its waiver with respect to the ZEV standards in particular because EPA, in a SIP approval action, approved ZEV provisions into the State's SIP. Final CARB Detailed Comments, at 351. But in so doing, EPA noted that California's GHG provisions were *not* part of California's SIP submission.²⁴⁹ At the time, EPA explained that "CARB has expressly excluded from the August 14, 2015 SIP submittal certain sections or subsections of California code that have been authorized or waived by EPA under CAA section 209."²⁵⁰ Further, in the SAFE proposal, EPA explained that the proposed withdrawal of the waiver for MY 2021–2025 ZEV standards was premised in part on California's explicit indications that compliance with those standards formed part of the compliance mechanism for MY 2021–2025 GHG standards. For instance, at proposal, we explained "because the ZEV and GHG standards are closely interrelated, as demonstrated by the description above of their complex, overlapping compliance regimes, EPA is proposing to withdraw the waiver of preemption for ZEV standards under the second and third prongs of section 209(b)(1)." 83 FR 43243. California's responses to the SAFE proposal do not rebut the Agency's views that the ZEV standards for MY 2021–2025 are inextricably interconnected with the design and purpose of California's overall GHG reduction strategy.²⁵¹ According to California, for example, CARB's GHG standards for the 2017 through 2025 MYs are designed to respond to California's identified goals of reducing GHG emissions to 80 percent below 1990 levels by 2050 and in the near term

to reduce GHG levels to 1990 levels by 2020;" "In 2009, CARB staff analyzed pathways to meeting California's long-term 2050 GHG reduction goals in the light duty vehicle subsector and determined that ZEVs would need to comprise nearly 100 percent of new vehicle sales between 2040 and 2050, and commercial markets for ZEVs would need to launch in the 2015 to 2020 time frame." Analysis in support of comments of the California Air Resources Board on the SAFE proposal, pg. 54, 59 & 83. EPA reviewed California's SIP submission, including ZEV measures, as a matter of NAAQS compliance strategy. But in the 2012–2013 CAA section 209(b) waiver proceeding, CARB presented its ZEV program to EPA solely as a GHG compliance strategy—indeed, CARB expressly stated that the ZEV program *did not confer NAAQS pollutant benefits*. "There is no criteria emissions benefit from including the ZEV proposal in terms of vehicle (tank-to-wheel or TTW) emissions." CARB ACC waiver request at 15, EPA–HQ–OAR– 2012–0562–0004.²⁵²

Similarly, some commenters argued that EPA reconsideration would constitute impermissible retroactive action, citing *Bowen v. Georgetown Univ. Hosp.*, 488 U.S. 204 (1988). However, the rulemaking which the Supreme Court held was impermissibly retroactive in that case had been proposed in February 1984 and had purported to establish reimbursement rates effective July 1, 1981. By contrast, here EPA is reconsidering a previous grant of a waiver of preemption for *future* model years 2021–2025.²⁵³

²⁵² CARB in its SAFE proposal comments refers to this as an "alleged[]" statement, Final Carb Detailed Comments at 351. The SAFE proposal cited the Waiver Support Document in which CARB made this statement, 83 FR at 43248 n.580. The statement is directly quoted above. California's comments on the SAFE proposal do not contest that California's ACC waiver request expressly disclaimed criteria pollutant benefits from the ZEV program, nor do they establish that EPA is foreclosed from revisiting the grant of the waiver in light of the interpretation of 209(b)(1)(B) adopted below. EPA notes in this regard that California's approach in its ACC waiver request differed from the state's approach in its waiver request for MY 2011 and subsequent heavy-duty tractor-trailer GHG standards, where California quantified NO_x emissions reductions attributed to GHG standards and explained that they would contribute to PM and ozone NAAQS attainment. 79 FR 46256, 46257 n.15, 46261, 46262 n.75 (August 7, 2014).

²⁵³ As explained above, to the extent that NHTSA's final determination that EPCA preempts State GHG and ZEV programs, the implications of that determination for prior EPA waivers of such programs are effective upon the effective date of this joint action. Separate and apart from that analysis, to the extent that EPA is withdrawing the waiver based on its determination that the waiver does not meet the CAA section 209(b)(1)(B)

Reconsideration of aspects of a prior adjudication whose effects have not yet ripened is not barred by *Bowen's* proscription on retroactive rulemaking—otherwise any reconsideration of agency action would likewise be barred.

For all these reasons, EPA concludes it has authority under CAA section 209 to reconsider its prior grant of the ACC waiver and to withdraw the waiver for MY 2021–2025 GHG and ZEV standards, consistent with the SAFE proposal.

C. The Effect of Preemption Under the Energy Policy and Conservation Act (EPCA) on EPA's Previously Granted Waiver Under CAA Section 209(b) With Regard to California's GHG and ZEV Standards

In the SAFE proposal, EPA explained its historical practice of reviewing waiver requests under the prism of CAA section 209. Specifically, EPA has "historically declined to consider as part of the waiver process whether California standards are constitutional or otherwise legal under other Federal statutes apart from the Clean Air Act." 83 FR 42340. *See also Motor & Equip. Mfrs. Ass'n, Inc. v. EPA*, 627 F.2d 1095, 1115 (D.C. Cir. 1979) (*MEMA I*) "[T]he Administrator operates in a narrowly circumscribed proceeding requiring no broad policy judgments on constitutionally sensitive matters. Nothing in CAA section 209 requires him to consider the constitutional ramifications of the regulations for which California requests a waiver." This historic position was reflected in granting the initial ACC program waiver where EPA explained: "Evaluation of whether California's GHG standards are preempted, either explicitly or implicitly, under [the Energy Policy and Conservation Act] EPCA, is not among the criteria listed under section 209(b). EPA may only deny waiver requests based on the criteria in section 209(b), and inconsistency with EPCA is not one of those criteria." 78 FR 2145. But EPA, in the past, has also solicited comments on "whether the Energy Policy and Conservation Act (EPCA) fuel economy provisions are relevant to EPA's consideration of the request and to California's authority to implement its vehicle GHG regulations" and in response to comments opted to "take[] no position regarding whether or not California's GHG standards are preempted under EPCA." 74 FR 32744, 32782–83 (July 8, 2008).

criticism, that withdrawal is for model years 2021–2025, as proposed in the SAFE proposal.

²⁴⁹ 81 FR 39424, 27–28 (June 16, 2016).

²⁵⁰ 81 FR 29427–28. "The excluded provisions pertain to: Greenhouse Gas (GHG) exhaust emission standards 2009 through 2016 Model Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles, and 2017 and subsequent Model Passenger Cars, Light-Duty Trucks, and Medium Duty Vehicles."

²⁵¹ Analysis in support of comments of the California Air Resources Board on the SAFE proposal, at 342. "For example, and relevant here, California's Legislature has established an aggressive GHG emissions reduction target for 2030." "The ZEV mandate is a crucial part of this strategy; it 'act[s] as the technology forcing piece of the 2016 Draft TAR program' which is necessary because 'the new vehicle fleet [in California] will need to be primarily composed of advanced technology vehicles . . . by 2035' in order to meet the State's 2050 GHG goal." *Id.* at 369–70 (Internal citations omitted). "This increasing ZEV deployment is critical to achieving the statewide 2030 and 2045 GHG requirements and 2031 South Coast SIP commitments (the 2016 State SIP Strategy identified the need for light-duty vehicles to reduce NO_x emissions by over 85 percent by 2031 to meet federal standards)." *Id.* at 373.

In the January 2013 waiver, EPA stated: “Evaluation of whether California’s GHG standards are preempted, either explicitly or implicitly, under EPCA, is not among the criteria listed under section 209(b). EPA may only deny waiver requests based on the criteria in section 209(b), and inconsistency with EPCA is not one of those criteria. In considering California’s request for a waiver, [EPA] therefore [has] not considered whether California’s standards are preempted under EPCA.” 78 FR at 2145.

EPA believes that this January 2013 statement was inappropriately broad, to the extent it suggested that EPA is categorically *forbidden* from ever determining that a waiver is inappropriate due to consideration of anything other than the “criteria” or “prongs” at CAA section 209(b)(1)(B)(A)–(C). The statements quoted above, and EPA’s historical practice of disregarding issues of “[c]onsistency with EPCA” in the context of evaluating California’s waiver applications, were made in the context of EPA acting on its own to administer CAA section 209(b) in considering such applications. The context here is different: EPA is undertaking a joint action with NHTSA. In the SAFE proposal, EPA noted that NHTSA had proposed and could well finalize a determination that California’s GHG and ZEV standards are both explicitly and implicitly preempted under EPCA.²⁵⁴ EPA explained that such a determination would present a threshold question as to California’s ability to enforce these standards and proposed to conclude that standards preempted under EPCA cannot be afforded a waiver of preemption under CAA section 209(b). Unlike the Clean Air Act, EPCA does not allow for any waiver of its express preemption provision. EPCA contains no language that can be read to allow States to either prescribe or enforce regulations related to fuel economy standards. Consistent with this view, at SAFE proposal, NHTSA explained that, “when a State establishes a standard related to fuel economy, it does so in violation of EPCA’s preemption statute(sic) and the standard is therefore void *ab initio*.” 83 FR 43235. At the same time, NHTSA explained that certain other GHG requirements that do not relate to fuel economy, such as regulations addressing leaking refrigerants, would likely not be preempted under EPCA. 83 FR 4324–35.

EPA does not intend in future waiver proceedings concerning submissions of

California programs in other subject areas to consider factors outside the statutory criteria in CAA section 209(b)(1)(A)–(C). But the unique situation in which EPA and NHTSA, coordinating their actions to avoid inconsistency between their administration of their respective statutory tasks, address in a joint administrative action the issues of the preemptive effect of EPCA and its implications for EPA’s waivers, has no readily evident analogue.²⁵⁵ EPA will not dodge this question here.

Consistent with the SAFE proposal, NHTSA is finalizing a determination that EPCA preempts State GHG and ZEV standards. EPA agrees with commenters that EPA is not the agency that Congress has tasked with administering and interpreting EPCA. This is especially so because “[t]he waiver proceeding produces a forum ill-suited to the resolution of constitutional claims.” *MEMA I*, 627 F.2d at 1115. In the SAFE proposal, EPA took the position that it is, at a minimum, reasonable to consider NHTSA’s conclusions about the preemptive effect of EPCA. To the extent that NHTSA has determined that these standards are void *ab initio* because EPCA preempts standards that relate to fuel economy, that determination presents an independent basis for EPA to consider the validity of the initial grant of a waiver for these standards, separate and apart from EPA’s analysis under the criteria that invalidate a waiver request. In the context of a joint action in which our sister agency is determining, and codifying regulatory text to reflect, that a statute Congress has entrusted it to administer preempts certain State law, EPA will not disregard that conclusion, which would place the United States Government in the untenable position of arguing that one federal agency can resurrect a State provision that, as another federal agency has concluded and codified, Congress has expressly preempted and therefore rendered void *ab initio*.

This conclusion is consistent with the Supreme Court’s holding in *Massachusetts v. EPA*, 549 U.S. 497 (2007). While this case did not address EPCA preemption, the Supreme Court anticipated that EPA and NHTSA would administer their respective authorities in a consistent manner. (“The two obligations [for NHTSA to set fuel economy standards under EPCA and for EPA to regulate motor vehicle GHG emissions under CAA section 202] may overlap, but there is no reason to think the two agencies cannot both administer

their obligations and yet avoid inconsistency.” *Id.* at 532.) Considering that California cannot enforce standards that are void *ab initio*, even assuming *arguendo* that there existed a valid grant of waiver under CAA section 209(b), NHTSA’s determination renders EPA’s prior grant of a waiver for those aspects of California’s regulations that EPCA preempts invalid, null, and void, and, to the extent that administrative action is necessary on EPA’s part to reflect that state of affairs, EPA hereby withdraws that prior grant of a waiver on this basis.

EPA’s finding that California’s GHG and ZEV standards are preempted as a result of NHTSA’s finalized determinations, issued in this joint action, with respect to EPCA’s preemptive effect on State GHG and ZEV standards, is effective upon the effective date of this joint action. This finding is separate and apart from findings with respect to EPA’s 2013 waiver for CARB’s Advanced Clean Car Program as it pertains to its 2021 through 2025 MY relating to GHG and ZEV standards and accompanying withdrawal of the waiver, pursuant to CAA section 209(b)(1), as set forth in subsection D below; as a matter of EPA’s administration of CAA section 209(b), without reference to EPCA’s preemptive effect as determined by NHTSA, that withdrawal applies to 2021 through 2025 MY GHG and ZEV standards, as proposed in the SAFE proposal.^{256 257}

²⁵⁶ EPA acknowledges that its action in this document may have implications for certain prior and potential future EPA reviews of and actions on state SIPs that may incorporate certain aspects of California’s state program, either California’s own SIPs or SIPs from states that have adopted one or more aspects of California’s state program pursuant to CAA section 177. EPA will consider whether and how to address those implications, to the extent that they exist, in separate actions. But EPA believes that it is not necessary to resolve those implications in the course of this action because the effects of EPCA preemption, as set forth in subsection III.C, and the proper interpretation and application of CAA section 209(b)(1)(B) to California’s GHG and ZEV program, as set forth in subsection III.D, provide sufficient reason to take this final action and that the potential implications for prior and future SIP actions are not a sufficient basis to alter the rationale for or terms of this final action. The questions of what EPCA means and what its preemptive effect on certain state regulations is, and what CAA section 209(b)(1)(B) means and what its limitations on California’s ability to obtain a waiver for its state programs are, do not depend on whether one or more SIP actions pertaining to NAAQS attainment and maintenance strategies may directly or indirectly be affected by the agencies’ resolution of those questions.

²⁵⁷ In the August 2018 SAFE proposal, EPA solicited comment on whether one or more of the grounds supporting the proposed withdrawal of this waiver would also support withdrawing other waivers that it has previously granted. 83 FR at 43240 n.550. At this time, EPA does not intend to take action with respect to any prior waiver grants other than those specified above.

²⁵⁴ 49 U.S.C. 32919(a). See 83 FR 43233.

²⁵⁵ See *Massachusetts v. EPA*.

D. Reconsideration of January 2013 Waiver and Determination That It Is Appropriate To Withdraw EPA's January 2013 Waiver of CAA Section 209 Preemption for California's GHG and ZEV Standards for Model Years 2021–2025, Pursuant to CAA Section 209(b)(1)(B)

1. Interpretation of CAA Section 209(b)(1)(B)

Under CAA section 209(b)(1)(B), EPA cannot grant a waiver request if EPA finds that California “does not need such State standards to meet compelling and extraordinary conditions.”²⁵⁸ In the August 2018 SAFE Proposal, EPA proposed to determine: (1) That it was reasonable and appropriate to interpret the scope of “such State standards” to authorize a consideration of whether California needs to have its own GHG vehicle emissions program *specifically*, rather than whether California needs any separate vehicle emissions program *at all*; and (2) that California did not “need” its own GHG and ZEV programs “to meet compelling and extraordinary conditions” within the meaning of the statute. EPA finalizes those determinations in this document.

EPA notes in this regard that regulation of emissions from new motor vehicles and new motor vehicle engines under CAA section 202(a) is triggered by a determination that “the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines . . . cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.” This “endangerment finding,” which triggers EPA’s ability to use the CAA section 202(a) regulatory authority which CAA section 209(a) preempts the states from exercising (subject to the availability of a CAA section 209(b) preemption waiver), links (1) emission of pollutants from sources; to (2) air pollution; and (3) resulting endangerment to health and welfare.²⁵⁹

Congress enacted waiver authority for California under CAA section 209(b)

against the backdrop of traditional, criteria pollutant environmental problems, under which all three links in this chain bear a particularized nexus to specific local California features: (1) Criteria pollutants are emitted from the tailpipes of the California motor vehicle fleet; (2) those emissions of criteria pollutants contribute to air pollution by concentrating locally in elevated ambient levels, which concentration, in turn; (3) results in health and welfare effects (e.g., from ozone) that are extraordinarily aggravated in California as compared to other parts of the country, with this extraordinary situation being attributable to a confluence of California’s peculiar characteristics, e.g., population density, transportation patterns, wind and ocean currents, temperature inversions, and topography. In the case of GHG emissions from motor vehicles, however, this particularized nexus to California’s specific characteristics is missing: (1) The GHG emissions from California cars are no more relevant to the pollution problem at issue (*i.e.*, climate change) as it impacts California than are the GHG emissions from cars being driven in New York, London, Johannesburg, or Tokyo; (2) the resulting air pollution, *i.e.*, elevated concentrations of GHG in the upper atmosphere, is globally mixed; (3) the health and welfare effects of climate change impacts on California are not extraordinary to that state and to its particular characteristics. Although EPA concludes that all three of these aspects are lacking in the case of GHG, EPA further concludes that it is the *connection* between all the three which is the original motivation for Congress’s creation of the waiver. It is that original motivation that informs the proper understanding of what CAA section 209(b)(1)(B) requires.

It is important to note that, while this interpretation of CAA section 209(b)(1)(B) departs in major respects from the interpretation applied in the 2009 waiver denial reversal (74 FR 32744) and the 2013 waiver grant (78 FR 2112), it does not simply constitute a re-adoption of the interpretation applied in the 2008 waiver denial (73 FR 12156). The 2008 waiver denial applied what it styled as two alternative approaches to determining whether California “need[ed]” its own vehicle GHG emissions program to address global climate change “to meet compelling and extraordinary conditions”: One that looked at the *causal* link between California emissions and elevated GHG concentrations, 73 FR at 12160 (styled as “the distinct nature of global

pollution as it relates to section 209(b)(1)(B)”), and an “alternative” approach that looked at the magnitude of California climate *effects* compared to the rest of the nation, 73 FR at 12163–12164 (“whether the potential impact of climate change resulting from these emissions and concentrations will differ across geographic areas and if so whether the likely effects in California amount to compelling and extraordinary conditions”). The 2009 waiver denial reversal, and the 2013 waiver grant, in contrast, applied an interpretation which EPA styled as a return to the “traditional” interpretation. Under that approach, EPA determined that California “needs” its own vehicle GHG emissions program “to meet compelling and extraordinary conditions,” a determination that was predicated on what was then EPA’s view that, in the case of such later-adopted programs, satisfaction of the “need” criterion of CAA section 209(b)(1)(B) was effectively automatic, being derivative as it were of the State’s having long ago established a “need” to have *some form* of its own vehicle emissions program (*i.e.*, its criteria pollutant program for which it had already received many waivers). In conjunction with this, EPA also pointed to the effects of climate change on certain criteria pollutant impacts. *See* 74 FR at 32746; 78 FR at 2125 *et seq.*

In this action, EPA adopts an interpretation of CAA section 209(b)(1)(B) that it concludes is more in accord with the text, structure, purpose, and legislative history of that provision than were either the position in the 2008 denial (because it does not separate causal issues and effects issues into alternatives) or the position the 2009 and 2013 grants (because it considers application of CAA section 209(b)(1)(B) to California’s need for a GHG/climate program, rather than subordinating that consideration to California’s need for a criteria pollutant program). Under this interpretation, EPA begins by noting that only one state, California, is entitled to apply under CAA section 209(b) for a waiver of the preemptive effect of CAA section 209(a). CAA section 209(a), in turn, provides that (unless a waiver is issued) no state may regulate new motor vehicle or new motor vehicle engine emissions. That authority instead is conferred on EPA under CAA section 202(a), subject to an “endangerment finding.” That finding requires EPA to consider the relationship between [1] sources and their emissions of *pollutants*; [2] the *pollution* to which those emissions contribute; and [3] resulting *impacts* on health and welfare. Congress has

²⁵⁸ EPA notes that Congress provided no definition of the phrase “compelling and extraordinary conditions,” and that the phrase appears to be entirely unique, not found anywhere else in the United States Code.

²⁵⁹ We therefore, also disagree with CARB’s argument that EPA’s reading of CAA section 209(b)(1)(B) “ignores the statutory structure—improperly reading Section 209(b) without consideration of the relationship between Sections 202(a), 209(a) and 209(b). Specifically, EPA proposes to read Section 209(b) as excluding GHGs at the same time that it proposes to continue regulating GHGs under Section 202(a) and presumes, albeit implicitly, that Section 209(a) preempts other States from regulating GHGs.” CARB comments at 359.

therefore, in the elements of the endangerment finding, laid out the terms of what constitutes a pollution problem to provide the appropriate and requisite predicate for federal regulation. Because CAA section 209(a) expresses Congress's judgment that vehicle emission pollution problems are presumptively appropriate only for federal regulation, with one state afforded the extraordinary treatment under CAA section 209(b) of being able to apply for a waiver from that preemption, the best, if not the only, reading of the waiver criterion under CAA section 209(b)(1)(B) is that it requires a pollution problem at the local level that corresponds in a state-specific particularized manner to the type of pollution problem that Congress required as the predicate for federal regulation.

It is against this backdrop that EPA believes the text of CAA section 209(b)(1)(B) is best interpreted. Informed by the criteria-pollutant context in which California's pre-1970 program was enacted, the legislative history, and the principle, as discussed elsewhere in this action, that differential treatment of the states by Congress in a geographically disparate way is extraordinary and is justified only by a sufficient link between that differential treatment and particularized local facts, EPA interprets Congress's command in CAA section 209(b)(1)(B), that it may not grant a preemption waiver for a California state vehicle emissions program if California does not "need" that program "to meet compelling and extraordinary conditions," to condition the issuance of a waiver on a *state-specific* pollution problem that maps on to the elements as laid out in CAA section 202(a): [1] Emissions of pollutants; [2] resulting air pollution; [3] health and welfare effects from that resulting air pollution. EPA concludes that the interpretation of CAA section 209(b)(1)(B) it adopts in this document is the best, if not the only, reading of that provision.

The Supreme Court's opinion in *UARG*, 134 S. Ct. 2427 (2014), instructs that Clean Air Act provisions cannot necessarily rationally be applied identically to GHG as they are to traditional pollutants.²⁶⁰ For the reasons

²⁶⁰ CARB is wrong to suggest in its comments that EPA's interpretation in this action of CAA section 209(b)(1)(B) is inconsistent with the Supreme Court's opinion in *Massachusetts v. EPA*. CARB comments at 360. *Massachusetts* held that the general, CAA-wide definition of "air pollutant" at CAA section 302(g) encompasses carbon dioxide, and that the text of CAA section 202(a)(1), which provides that EPA shall regulate standards for emissions of "any air pollutant" from new motor vehicles if EPA makes certain predicate findings

set forth in this subsection, it is appropriate to consider the application of the second waiver prong, CAA section 209(b)(1)(B), to California's "need" *vel non* for its own GHG and ZEV programs, separate and apart from its "need" for its own criteria pollutant program. EPA determines, based on the application of the second waiver prong, that California does not "need" its own GHG and ZEV programs "to meet compelling and extraordinary conditions," notwithstanding EPA's historical determinations that California does so "need" its own criteria pollutant programs.

Furthermore, the fact that GHG emissions may affect criteria pollutant concentrations (*e.g.*, increases in ambient temperature are conducive to ground-level ozone formation) does not satisfy this requirement for a particularized nexus, because to allow such attenuated effects to fill in the gaps would eliminate the function of requiring such a nexus in the first place and would elide the distinction between national and local pollution problems which EPA discerns as underlying the text, structure, and purpose of the waiver provision. EPA departs in this regard from the position it took in the 2009 reversal of the 2008 waiver denial, 74 FR at 32763, where it determined that "[t]here is a logical link between the local air pollution problem of ozone

(referred to colloquially as "endangerment findings"), also encompasses carbon dioxide. 549 U.S. at 528. But CAA section 209, as a whole, in its preemption provision in 209(a), in the waiver provision in 209(b), and most specifically in the second waiver prong under CAA 209(b)(1)(B), does not contain the term "pollutant," and EPA does not in this document interpret section 209 as simply establishing a distinction between criteria and GHG pollutants. Rather, for the reasons stated in this document, EPA interprets CAA section 209(b), and its extraordinary treatment afforded to one state, as requiring, in its provision in CAA section 209(b)(1)(B) that no waiver shall issue where a state does not need its own standards "to meet compelling and extraordinary conditions," as requiring a state-specific, particularized nexus between the elements of a pollution problem—*i.e.*, pollutants, pollution, and impacts—as set forth in CAA section 202(a). CARB asserts that "[t]here is no reason Section 209(b)(1)(B) should be interpreted more narrowly than Section 202(a)." CARB comments at 360. One such reason is perfectly evident: They have different text. Another, as discussed in this action, is that CAA 209(b)(1)(B) must be read against the principle that extraordinary treatment afforded one state must be justified by "extraordinary conditions" in that state. Here, CARB misses the mark when it invokes *Massachusetts's* observation that "without regulatory flexibility, changing circumstances and scientific developments would soon render the Clean Air Act obsolete," quoting 549 U.S. at 532. CARB comments at 360. The Supreme Court there was discussing evolution of scientific understanding of what pollutants may pose harm. Nothing in *Massachusetts* suggests that scientific developments can alter the fundamental relationship between the States among themselves and vis-à-vis the federal government.

and California's desire to reduce GHGs as one way to address the adverse impact that climate change may have on local ozone conditions."

EPA further notes that elsewhere in the 2009 waiver denial reversal, EPA took the position that *Massachusetts v. EPA* supports the view that, because "every small reduction is helpful in reducing [climate] concerns. . . . [A] reduction in domestic automobile emissions would slow the pace of global emissions increase no matter what happens with regard to other emissions," and therefore "opponents [of the waiver] have not met their burden of demonstrating that California's motor vehicle program, or its GHG standards, does not have a *rational relationship* to contributing to amelioration of the air pollution problems in California." *Id.* at 32766 (emphasis added). EPA now departs from this prior position in several important respects.

First, to the extent that its 2009 waiver denial reversal was guided by an interpretation of the teachings of *Massachusetts* under which any reduction in GHG gives warrant for regulatory action (to include EPA's waiver approvals), that must now be weighed against the Supreme Court's subsequent 2014 *UARG* opinion, which stands for the proposition that particular CAA provisions will not necessarily apply identically in the case of GHG emissions as they do to criteria pollutant emissions.

Second, to the extent that EPA's 2009 waiver denial reversal framed the question under CAA section 209(b)(1)(B) as whether there is a "rational relationship" between California's programs and California's air pollution problems, that conflated the "arbitrary and capricious" test in CAA section 209(b)(1)(A) with the unique and distinct term "need[ed] to meet compelling and extraordinary conditions" in CAA section 209(b)(1)(B); EPA's position in this document gives that term a distinct and appropriate meaning and application.

Third, whereas the 2009 waiver denial reversal also noted in this passage that "there is some evidence in the record that proffers a specific level of reduction in temperature resulting from California's regulations," this action notes elsewhere that the 2012 joint rule record reflected that even standards much more stringent than either the 2012 Federal standards or California's ACC program would only reduce global temperature by 0.02 degrees Celsius in 2100. As discussed elsewhere in this action, EPA concludes that this does not constitute a showing

that California “needs” its standards to “meet” climate change, separate from the question whether climate change and its impacts on California constitute “compelling and extraordinary conditions” within the meaning of the statute. Further, the claim by some commenters that “incremental progress is progress nonetheless” does not meaningfully address the reality that the waiver would result in an indistinguishable change in global temperatures and, based on geographic variability and measurement sensitivity, likely no change in temperatures or physical impacts resulting from anthropogenic climate change in California.

EPA proposed to determine that the balance of textual, contextual, structural, and legislative history evidence supports the conclusion that the statute is ambiguous in one particular respect: Whether CAA section 209(b)(1)(B) refers to an individual standard or the California standards as a whole when referring to the Administrator’s review of state standards submitted for a waiver, to determine whether the state “needs such State standards to meet compelling and extraordinary conditions.” We explained that “such State standards” in CAA section 209(b)(1)(B) is ambiguous with respect to the scope of EPA’s analysis. For example, it is unclear whether EPA is meant to evaluate either the standard or standards at issue in the waiver request or all of California’s standards in the aggregate. We also explained that CAA section 209(b)(1)(B) does not specifically employ terms that could only be construed as calling for a standard-by-standard analysis or each individual standard. For example, it does not contain phrases such as “each State standard” or “the State standard.” Nor does the use of the plural term “standards” definitively answer the question of the proper scope of EPA’s analysis, given that the variation in the use of singular and plural form of a word in the same law is often insignificant and a given waiver request typically encompasses multiple “standards.” Thus, we explained that while it is clear that “such State standards” refers at least to all of the standards that are the subject of the particular waiver request before the Administrator, that phrase could reasonably be considered as referring either to the standards in the entire California program, the program for similar vehicles, or the particular standards for which California is

requesting a waiver under the pending request.²⁶¹

We did explain, however, that there are reasons to doubt that “such State standards” is intended to refer to all standards in California’s program, including all standards that it has previously adopted and obtained waivers for, because this would limit EPA’s ability to consider and act on standards that are the subject of particular waiver applications, even where that individualized consideration is reasonable or the only rational approach. Specifically, given that the term “extraordinary” should refer to circumstances that are specific to California, such as thermal inversions resulting from local geography and wind patterns, and primarily responsible for causing the air pollution problems that the standards are designed to address, standards which address pollution problems that lack that type of particularized nexus to California are particularly appropriate candidates for an individualized consideration. EPA affirms this view as it relates to the review of GHG standards, given that GHG emissions from in California cars, and their consequences for California, bear no particular relation to these California-specific circumstances—*i.e.*, *global* GHG emissions in the aggregate are what present problems for California, not California-specific ones.

The waiver under CAA section 209(b) is a waiver of, and is logically

²⁶¹ California suggests in its comments that EPA is “logically inconsistent” in that it said at proposal, 83 FR at 43246, that the CAA section 209(b)(1)(B) phrase “such State standards” “refers at least to all of the standards that are the subject of the particular waiver request before the Administrator,” while at the same time proposing to reconsider and withdraw the January 2013 grant of a waiver with respect to some, but not all, of the components of the ACC program (*i.e.*, with respect to GHG and ZEV, but not LEV). EPA disagrees that this is inconsistent. The question of how to interpret “such state standards” refers to the determination of what the total set of standards is with regard to which EPA will consider whether California “needs” those standards “to meet compelling and extraordinary conditions.” It is reasonable to assign that total set at the level of the waiver-request package before the Agency, rather than all the state-specific emission standards that California has ever adopted. If the consideration reveals that, within that set, California does not need *particular* subsets “to meet compelling and extraordinary conditions”—here, because the GHG and ZEV programs lack a particularized, California-specific nexus between pollutant, pollution, and impacts, a rationale that does not apply to the LEV program, for which EPA did not propose to withdraw the waiver and is not in this document withdrawing the waiver—that is nothing unusual. And it is consistent with EPA’s prior practice, as discussed in subsection III.B, of only partially granting aspects of, in combination with denial or deferral of action on other aspects of, some previous waivers. The ultimate analysis whether a waiver is appropriate is not limited to a binary, all-or-nothing determination.

dependent on and presupposes the existence of, the prohibition under CAA section 209(a), which forbids (absent a waiver) any State to “adopt or attempt to enforce any *standard* [singular] relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to this part.” States are forbidden from adopting a standard, singular; California requests waivers seriatim by submitting a standard or package of standards to EPA; it follows that EPA considers those submissions as it receives them, individually, not in the aggregate with all standards for which it has previously granted waivers. Further, reading the phrase “such State standards” as requiring EPA always and only to consider California’s entire program in the aggregate would limit the application of this waiver prong in a way that EPA does not believe Congress intended. We explained that, under the interpretation where EPA is constrained to the aggregate approach, once EPA had determined that California needed its very first set of submitted standards to meet extraordinary and compelling conditions, EPA would never have the discretion to determine that California did not need any subsequent standards for which it sought a successive waiver—unless EPA is authorized to consider a later submission separate from its earlier finding. Moreover, as also explained at proposal, up until the ACC program waiver request, California’s waiver request involved individual standards or particular aspects of California’s new motor vehicle program. For example, only GHG standards were at issue in the 2008 GHG waiver request denial.^{262 263}

Several commenters disagreed with our view of ambiguity and the proposal to construe “such state standards,” in the context of our reconsideration and proposal to withdraw the January 2013 waiver for California’s GHG and ZEV provisions, as applying to those provisions themselves, rather than California’s entire, aggregate program consisting of *all* California’s motor vehicle emission standards, when considering whether California needs its

²⁶² 73 FR 12156 (March 6, 2008).

²⁶³ EPA determines in this document that GHG emissions, with regard to the lack of a nexus between their State-specific sources and their State-specific impacts, and California’s GHG standard program, are sufficiently distinct from criteria pollutants and traditional, criteria pollutant standards, that it is appropriate for EPA to consider whether California needs its own GHG vehicle emissions program. EPA does not determine in this document and does not need to determine today how this determination may affect subsequent reviews of waiver applications with regard to criteria pollutant control programs.

GHG and ZEV provisions to meet compelling and extraordinary conditions within the meaning of CAA section 209(b)(1)(B). One commenter argued that this reading would require EPA to consider the protectiveness of California’s standards by looking at them in the aggregate while also allowing EPA to consider California’s “need” on an individual, standard-by-standard basis. Commenters also argued that EPA’s historical or traditional interpretation was correct. They argued that EPA could not apply a different interpretation of “such State standards” given that “such State standards” in CAA section 209(b)(1)(B) does not relate back to the singular “any standard” in CAA section 209(a). They cast this reading as “implausible,” given that under the rule of last antecedent “such” should properly refer to standards in (b)(1) and not 209(a). We disagree. As explained earlier above, reading the phrase “such State standards” as requiring EPA always and only to consider California’s entire program in the aggregate would limit the application of this waiver criterion. Specifically, it would mean that once EPA determines that California needed its very first set of submitted standards to meet extraordinary and compelling conditions, EPA would never have the discretion to determine that California did not need any subsequent standards for which it sought a successive waiver—unless EPA is authorized to consider a later submission separate from its earlier finding. Instead, it is reasonable to read CAA section 209(b) as articulating, first, that EPA shall consider the standards in the aggregate to determine if the State’s determination that they are sufficiently protective is arbitrary and capricious (CAA section 209(b)(1)(A)). But, even if this first criterion for denying a waiver is not triggered, nevertheless, such a waiver shall not be granted as to such standards that are not needed to meet compelling and extraordinary conditions, under the second waiver denial criterion (CAA section 209(b)(1)(B)). Commenters’ argument, in effect, inserts the word “every” (or “all”) into CAA section 209(b)(1)(B) in between the words “need” and “such.”

Additionally, as shown in further detail in section D.2., below, the term “extraordinary” refers to circumstances that are specific to California, such as thermal inversions resulting from local geography and wind patterns, and that are primarily responsible for causing the air pollution problems that the standard under waiver review is designed to address. EPA affirms the view that the

term “extraordinary” refers primarily to factors that tend to produce higher levels of pollution: Geographical and climatic conditions (like thermal inversions) that in combination with large numbers and high concentrations of automobiles, create serious air pollution problems in California (73 FR 12156, 12159–60).

The text, context, and structure of CAA section 209(b) support EPA’s reasoning that the relevant “conditions” are those conditions present in a particular state and that have a particularized nexus to emissions in that state. The statute calls for an examination of whether the “State” needs such “state standards” in the context of a prohibition in CAA section 209(a) of a “state or other political subdivision” adopting or attempting to enforce alternative standards. It would be inconsistent with the overall structure for a state’s own preferred policy approach to addressing national or global—rather than local and state-specific—“conditions” to permit a waiver from a scheme that otherwise establishes a uniform, national policy.²⁶⁴

Notably, pertinent legislative history supports this view of the text and structure of 209(b), insofar as it refers to California’s “peculiar local conditions” and “unique problems.” S. Rep. No. 403, 90th Cong. 1st Sess., at 32 (1967). This legislative history also indicates that California is to demonstrate “compelling and extraordinary circumstances sufficiently different from the nation as a whole to justify standards on automobile emissions which may, from time to time, need to be more stringent than national standards.” *Id.* EPA views this as evidence of Congressional intent that separate standards in California are to be justified by a showing of circumstances in California that are different from circumstances in the country at large. Additionally, EPA views this legislative history as demonstrating that Congress did not intend for CAA section 209(b)(1)(B) to be based on the need for California to

²⁶⁴ Cf. *Ford Motor Co. v. EPA*, 606 F.2d 1293, 1301–02 (D.C. Cir. 1979) (“Ford is asking this court to declare that Congress intended to make standards adopted by California for its own particular problems, and never substantively reviewed for stringency or national protectiveness by federal officials, an option which auto manufacturers can choose in the rest of the country as an alternative to compliance with the federal standards which Congress determined are in the best interests of the nation. We find this reading to be wholly implausible.”). See also *id.* at 1303 (“It was clearly the intent of the Act that that determination focus on local air quality problems . . . that may differ substantially from those in other parts of the nation.”).

enact separate standards that address pollution problems of a more national or global nature. Relevant legislative history also “indicates that Congress allowed waivers of preemption for California motor vehicle standards based on the particular effects of local conditions in California on the air pollution problems in California.” Congress discussed “the unique problems faced in California as a result of its climate and topography.” H.R. Rep. No. 728, 90th Cong. 1st Sess., at 21 (1967). See also Statement of Cong. Holifield (CA), 113 Cong. Rec. 30942–43 (1967). Congress also noted the large effect of local vehicle pollution on such local problems. See, e.g., Statement of Cong. Bell (CA) 113 Cong. Rec. 30946. As explained at proposal, Congress focus was on California’s ozone problem, which is especially affected by local conditions and local pollution. See Statement of Cong. Smith (CA) 113 Cong. Rec. 30940–41 (1967); Statement of Cong. Holifield (CA), *id.*, at 30942. See also, *MEMA I*, 627 F.2d at 1109 (noting the discussion of California’s “peculiar local conditions” in the legislative history). In sum and as explained at proposal, conditions that are similar on a global scale are not “extraordinary,” especially where “extraordinary” conditions are a predicate for a local deviation from national standards, under CAA section 209(b). 83 FR 43247.

As further explained in section D2., below, GHG is a globally distributed pollutant with environmental effects that are different from emissions of criteria pollutants. For example, GHG emissions from the California vehicle fleet bear no more relation to GHG emissions in California than fleet in other parts of the country. As also explained in the SAFE proposal, EPA believes that the GHG and ZEV standards are standards that would not meaningfully address global air pollution problems posed by GHG emissions, in contrast to local or regional air pollution problem with causal ties to conditions in California. Additionally, the impacts of California vehicles’ GHG emissions on California are mediated through the context of the global mixture of elevated levels of GHG in the upper atmosphere. As also shown below, EPA finds that while potential conditions in California related to global climate change could be substantial, they are not sufficiently different from the potential conditions in the nation as a whole to justify separate state standards under CAA section

209(b)(1)(B).²⁶⁵ In this action, EPA is reviewing a waiver for motor vehicle standards designed to address a global air pollution problem and its effects, as compared to a local or regional air pollution problem that has causal ties to conditions in California. EPA must therefore, review California's GHG standards in light of the fact that GHG emissions impacts are different from criteria pollutants themselves, and California must address their need for them as it relates to conditions in California. In sum, as explained at proposal, under our reading of "such state standards" and "extraordinary and compelling conditions," EPA will examine California's need for GHG standards by considering levels of GHG emissions emitted from motor vehicles in California to determine if they are specific to California and contribute primarily to environmental effects that are specific to California. This review, which calls for a showing of a particularized causal link between the standards under review, emissions in California, and conditions in California, is similar to agency review of California's need for standards designed to address criteria pollutants and is further discussed in section D.2.d, below.²⁶⁶

CARB argues that what it characterizes as EPA's reading of "compelling and extraordinary" as equivalent to "unique" or "sufficiently different from" the rest of the country "is inconsistent with Section 209(b)(1)(B), other provisions of the Clean Air Act, and the legislative history." CARB also asserts that EPA "cites no case" to support this reading. At the same time, CARB claims that EPA has either interpreted legislative history incorrectly or relies entirely on legislative history for the 1967 CAA, which does note California's "unique problems," instead of legislative history for the 1977 amendments; CARB asserts that the latter legislative history is more relevant, given that the addition of section 177 in the 1977 CAA meant that Congress did not intend that Section

209(b)(1)(B) be construed as requiring "California's problems to be entirely unique or sufficiently different from those in other States." CARB also contends that EPA is limiting application of CAA section 209(b)(1)(B) to smog, even though EPA has granted waivers for pollutants that do not contribute to smog, such as particulate matter. In addition, CARB maintains that what it characterizes as EPA's reading "compelling and extraordinary conditions" as restricted to "local" or "regional" pollutants would weaken Congress's intent that California retain its own regulatory program and continue to lead the nation as a "laboratory of innovation." CARB further argues that EPA provides no support for this "geographic distinction," while also casting the reading as "illusory." According to CARB, both local and global pollution cause compelling and extraordinary conditions, as evidenced by provisions of the CAA that address long-range transport of emissions (beyond the state level). In sum, CARB argues that "compelling and extraordinary conditions" is expansive enough to be read as including GHG emissions and that EPA's "exacting and unrealistic" reading can only be met by "a rare air pollution problem." CARB comments at 360–365.

EPA disagrees. First, as explained at proposal, the 1977 Amendments revised CAA section 209(b)(1) in only one material aspect. Specifically, California is required to determine that standards it seeks a waiver for will be "in the aggregate, at least as protective of public health and welfare than applicable Federal standards," rather than the "more stringent" standard under 1967 Clean Air Act. 83 FR 43247 n.579. Second, there is relevant legislative history from the 1977 amendments, which describes EPA's role in reviewing California's protectiveness determination, under CAA section 209(b)(1)(A), as whether "the State acted unreasonably in evaluating the relative risks of various pollutants in light of air quality, topography, photochemistry and climate in that State." This 1977 legislative history further supports a reading requiring a particularized nexus. H. Rep. No. 294, 95th Cong., 1st Sess. 302 (1977), U.S. C.C.A.N. 1977, p. 1381. Third, in support of the proposed reading, EPA cited *MEMA I* as noting the Senate Committee discussion of California's "peculiar local conditions" in 1967 legislative history for this provision in upholding the grant of a waiver subsequent to the 1977 CAA amendments. . 627 F.2d at 1109, citing

S.Rep. No. 403, 90th Cong., 1st Sess. 33 (1967); see also *Ford Motor Co. v. EPA*, 606 F.2d 1293,1303 (D.C. Cir. 1979) ("It was clearly the intent of the Act that that determination focus on local air quality problems . . . that may differ substantially from those in other parts of the nation."). Fourth, EPA's reading of CAA section 209(b)(1)(B) has never been and is not limited to "smog"-causing pollutants. Here, CARB's comment glosses over extensive discussion in the SAFE proposal of the phrase "compelling and extraordinary" including, for example, legislative history indicating that California is to demonstrate "compelling and extraordinary circumstances sufficiently different from the nation as a whole to justify standards on automobile emissions which may, from time to time, need to be more stringent than national standards." 83 FR 23427, citing S. Rep. No. 403, 90th Cong. 1st Sess., at 32 (1967). Fifth, as shown in greater detail in section III.D, the phrase "compelling and extraordinary conditions" qualifies the "need" for California's standards. And in a statute designed to address public health and welfare, it certainly cannot mean standards that allow a state to be "a laboratory for innovation" in the abstract, without any connection to a need to address pollution problems. Most notably, legislative history explains that CAA section 209(b)(1) was is intended to recognize California's "unique problems." For example, in originally adopting the provision, the Senate Committee on Public Works explained that "California's *unique* problems and pioneering efforts justified a waiver of the preemption section to the State of California." S. Rep. No. 403, 90th Cong., 1st Sess. 33 (1967) (emphasis added); see also 113 Cong. Rec. 30948 (bound ed. Nov. 2, 1967), Statement of Representative Harley Staggers, chairman of the House Interstate and Foreign Commerce Committee (explaining that "overall national interest required administration of controls on motor vehicle emissions, with special recognition given by the Secretary to the unique problems facing California as a result of numerous thermal inversions that occur within that state because of its geography and prevailing wind patterns), ; *id.* at 30950, Remarks of Rep. Corman ("The uniqueness and the seriousness of California's problem is evident—more than 90 percent of the smog in our urban area is caused by automobiles, and in the next 15 years the number of automobiles in the state will almost double."). Sixth, while it is

²⁶⁵ See Fourth National Climate Assessment, Chapter 25: Southwest, available at <https://nca2018.globalchange.gov/chapter/25/>. See also Intergovernmental Panel on Climate Change (IPCC) Observed Climate Change Impacts Database, available at http://sedac.ipcc-data.org/ddc/observed_ar5/index.html.

²⁶⁶ California argues in its comments that EPA has inappropriately reduced the scope of waiver ability under CAA section 209(b) to be narrower than the scope of express preemption under CAA section 209(a). EPA disagrees. To the extent that CAA section 209(b)(1)(B), as interpreted and applied here, precludes a waiver for California's GHG vehicle emissions and ZEV programs, that effect flows from the text and structure of this statutory section.

true that local and regional pollutants can be transported at greater geographic scales than the state level, the Clean Air Act sets out a comprehensive scheme for addressing air pollution transported to other regions; *see, e.g.*, CAA sections 126 and 110(a)(2)(D)(i). The fact that the Act addresses pollutant transport elsewhere does not expand the scope of the waiver provision. In contrast, in CAA section 209(b), Congress set out a waiver of preemption for California to address automotive pollution that give rise to local and regional air quality problems. Finally, to the extent CARB casts EPA reading as “exacting and unrealistic,” it mischaracterizes CAA section 209(a) and (b), which preempts states from adopting and enforcing standards for new motor vehicles and engines, with CAA section 209(b) allowing for a waiver of the preemption in 209(a) only if certain enumerated conditions are met. It is not “a rare air pollution problem” that satisfies the particularized nexus interpretation of CAA section 209(b)(1)(B) that EPA adopts in this document. Rather, it is the all-too-well understood and longstanding air pollution problem that California continues to face: Aggravated criteria pollution at the state and local level.

2. It Is Appropriate To Apply This Criterion to California’s GHG Standards Separately, Rather Than to California’s Motor Vehicle Program as a Whole

Under CAA section 209(b)(1)(B) of the Clean Air Act, the Administrator may not grant a waiver if he finds that the “State does not need such State standards to meet compelling and extraordinary conditions.” EPA proposed to find that CARB does not need its own GHG and ZEV standards to meet compelling and extraordinary conditions in California, on the grounds that “compelling and extraordinary conditions” mean environmental conditions with causes and effects particular or unique to, California whereas GHG emissions present global air pollution problems. Specifically, EPA proposed to determine that the GHG-related standards are designed to address global air pollution and its consequences, in contrast to local or regional air pollution problems with causal ties to conditions in California. EPA also proposed to find that, while effects related to climate change in California could be substantial, they are not sufficiently different from the conditions in the nation as a whole to justify separate State standards under CAA section 209(b)(1)(B). 83 FR 43248–43250. Lastly, EPA proposed to find that the State’s GHG-related standards would

not have a meaningful impact on the potential conditions related to global climate change. Because EPA has traditionally interpreted and applied CAA section 209(b)(1)(B) in a manner that examines whether the conditions that Congress identified (*e.g.*, topography number of vehicles, etc.)²⁶⁷ still give rise to serious air quality problems in California, and thus a need for California’s own motor vehicle emission control program, EPA concludes that this causal-link test is the appropriate basis on which to evaluate California’s GHG emission standards under the second waiver prong, CAA section 209(b)(1)(B).²⁶⁸

In general, EPA has in the past recognized California’s unique

²⁶⁷ *See, e.g.*, 49 FR 18887, 18890 (May 3, 1984) (waiver decision discussing legislative history of CAA section 209).

²⁶⁸ It is not appropriate for EPA to defer to California and other outside parties when EPA is interpreting its own statute. By contrast, EPA does defer to California’s policy choices when it comes to choosing emissions standards that will best address the serious air quality problems and impacts on public health and welfare in California—to the extent that the State standards at issue will actually address pollution and its consequences that are particular to California. But the question whether the State regulations at issue actually do meet the statutory criterion of being necessary “to meet compelling and extraordinary conditions” in the meaning of the statute, CAA section 209(b)(1)(B), is one which EPA must answer. In this regard, EPA notes that it has previously taken the position that “the burden of proof [lies] on the party opposing a waiver,” and that “the burden [is] on those who allege, in effect, that EPA’s GHG emission standards are adequate to California’s needs.” 78 FR at 2117 (Jan. 2013 waiver grant). EPA notes that this previous discussion is distinguishable from the current context in two key regards. First, EPA was in 2013 analyzing third parties’ opposition to a waiver, rather than conducting its own analysis of whether a previously granted waiver was appropriately granted. Second, EPA’s change in position in this document does not constitute an assertion that “EPA’s GHG emission standards are [or are not] adequate to California’s needs” as a matter of policy. Rather, EPA is adopting an interpretation of CAA section 209(b)(1)(B), specifically its provision that no waiver is appropriate if California does not need standards “to meet compelling and extraordinary conditions,” similar to the interpretation that it adopted in the 2008 waiver denial but abandoned in the 2009 and 2013 waiver grants, and applying that interpretation to determine to withdraw the January 2013 waiver for California’s GHG and ZEV program for model years 2021 through 2025. Under that interpretation, the question is not whether existing federal standards are “adequate to California’s needs,” but whether California’s standards are needed under the meaning of CAA section 209(b)(1)(B), which, as set forth in this document, requires a particularized nexus between California-specific pollutant sources, California-specific pollution contributed to thereby, and California-specific pollutants impacts caused thereby. Furthermore, we took comment on burden of proof in the proposal, *see* 83 FR at 43244 n.567. EPA believes it is not necessary to resolve that issue in this action as regardless of whether a preponderance of the evidence or clear and compelling evidence standard is applied, the Agency concludes that withdrawal of the waiver is appropriate.

underlying conditions and serious air pollution problems when reviewing waiver requests.²⁶⁹ California, and others that oppose the withdrawal of the waiver, assert that the relevant inquiry is merely whether California needs to have some form of a separate State motor vehicle emissions control program to meet compelling and extraordinary conditions, not whether any given standard is needed to meet compelling and extraordinary conditions related to that air pollution problem. On the other hand, several commenters that support a withdrawal of the waiver suggest EPA’s determination should be based on whether California needs greenhouse gas standards in particular to meet compelling and extraordinary conditions, asserting that a proposed set of standards must be linked to compelling and extraordinary conditions. These commenters suggest that the Act requires EPA to look at the particular “standards” at issue, not the entire State program.

EPA determines that it in this context it is appropriate to review whether California needs its GHG standards to meet compelling and extraordinary conditions separately from the need for the remainder of California’s new motor vehicle program, which has historically addressed criteria pollutants with a particular causal link to local and regional conditions both in the nature and quantity of emissions and in the particularized local and regional impacts of the pollution to which those emissions contribute. EPA bases this decision on the fact that California’s GHG standards are designed to address global climate change problems that are different from the local pollution conditions and problems that California has addressed previously in its new motor vehicle program. The climate change problems are different in terms of the distribution of the pollutants and the effect of local California factors, including the local effect of motor vehicle emissions as differentiated from other GHG emissions worldwide on the GHG concentrations in California. In

²⁶⁹ *See American Trucking Associations, Inc. v. Environmental Protection Agency*, 600 F.3d 624, 627 (D.C. Cir. 2010) (“With respect to the statutory language, EPA concluded that ‘compelling and extraordinary conditions’ refers to the factors that tend to cause pollution—the ‘geographical and climate conditions that, when combined with large numbers and high concentrations of automobiles, create serious air pollution problems.’ The expansive and statutory language gives California (and in turn EPA) a good deal of flexibility in assessing California’s regulatory needs. We therefore find no basis to disturb EPA’s reasonable interpretation of the second criterion. *See Chevron, USA Inc v. Natural Res. Def. Council*, 467 U.S. 837, 842–43.”) (citation omitted).

addition, EPA notes that under its traditional interpretation of CAA section 209(b)(1)(B), where EPA evaluates the need for a separate California new motor vehicle program, conditions such as the nature of the air quality problem may change whereby a particular motor vehicle regulation designed for a specific criteria pollutant is no longer needed to address a serious air quality problem (e.g., the underlying air quality problem no longer exists). Therefore, EPA concludes that it is appropriate to examine the need for GHG standards within California's mobile source program to ensure that such standard is linked to local conditions that giving rise to the air pollution problem, that the air pollution problem is serious and of a local nature, and that the State standards at issue will meaningfully redress that local problem.²⁷⁰

This waiver decision falls within the context of a few instances of EPA applying the CAA section 209(b)(1)(B) criterion to a California waiver request for a fundamentally global air pollution problem.²⁷¹ Although EPA's review of

²⁷⁰ EPA notes in this regard that the position that GHG and climate are no different from criteria pollutants and criteria air pollution in terms of applicability of the CAA section 209(b) waiver regime, and specifically that no particularized nexus between in-state emissions and in-state impacts is necessary in order to meet the CAA section 209(b)(1)(B) "need[ed] . . . to meet compelling and extraordinary conditions," would effectively read the term "extraordinary" out of the statute, or reduce it to surplusage with the term "compelling." Whether GHG emissions and attendant climate impacts are, in the colloquial sense, compelling or not is not the relevant question. It is whether they are "compelling and extraordinary" within the reasonably interpreted meaning of that term in its context here. Inasmuch as that term in its context requires a particularized nexus between California emissions, California pollution, and California impacts, they are not.

²⁷¹ See generally California State Motor Vehicle Pollution Control Standards; Advanced Clean Car Program; Notice of Decision, January 9, 2013 Volume 78, Number 6 pp. 2211–2145; California State Motor Vehicle Pollution Control Standards; Greenhouse Gas Emissions from 2014 and Subsequent Model Year Medium- and Heavy-Duty Engines and Vehicles; Notice of Decision; December 29, 2016 Volume 81, Number 250, pp. 95982–95987; California State Motor Vehicle Pollution Control Standards; Heavy-Duty Tractor-Trailer Greenhouse Gas Regulations; Notice of Decision; August 7, 2014 Volume 79, Number 152 pp. 46256–46265; California State Motor Vehicle Pollution Control Standards; Within-the-Scope Determination for Amendments to California's Motor Vehicle Greenhouse Gas Regulations; Notice of Decision; June 14, 2011 Volume 76, Number 114 pp. 34693–34700; California State Motor Vehicle Pollution Control Standards; Notice of Decision Granting a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles; July 8, 2009 Volume 74, Number 129 pp. 32744–32784; California State Motor Vehicle Pollution Control Standards; Notice of Decision Denying a Waiver of Clean Air Act Preemption for California's 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles; March 6, 2008 Volume 73, Number 45 pp. 12156–12169.

this criterion has typically been cursory due to California needing its motor vehicle emission program due to fundamental factors leading to local and regional air pollution problems that were well established at the time of creation of the waiver provision (as discussed below), it is appropriate in this case to carefully review the purpose of CAA section 209(b)(1)(B) when applying it to the unique circumstance of California's regulation of greenhouse gases. By doing so, EPA gives meaning to Congress's decision to include this provision in CAA section 209(b).²⁷²

Moreover, because both CAA sections 209(b)(B) and (C) employ the term "such state standards," it is appropriate for EPA to read the term consistently between prongs (B) and (C). Under CAA section 209(b)(1)(C) EPA conducts review of standards California has submitted to EPA for the grant of a waiver to determine if they are consistent with CAA section 202(a).²⁷³ It follows then that EPA must read "such state standards" in CAA section 209(b)(1)(B) as a reference to the same standards in subsection (C).²⁷⁴

a. EPA Practice in Previous Waivers

In past waivers that addressed local or regional air pollution, EPA has interpreted CAA section 209(b)(1)(B) as requiring it to consider whether California needs a separate motor vehicle program to meet compelling and extraordinary conditions. Under this approach, EPA does not consider whether the specific standards at issue are needed to meet compelling and extraordinary conditions related to that air pollutant. For example, EPA reviewed this issue in detail with regard

²⁷² See *United States v. Menashe*, 348 US 528, 538–39 (1955) (courts must give effect to every word, clause, and sentence of a statute).

²⁷³ "Technology exists with which to achieve California's proposed standards for HC and CO, however, the standards are inconsistent with Section 202(a) of the Clean Air Act because the cost of compliance within the lead time remaining is excessive." 38 FR 30136 (November 1, 1973). See also 40 FR 30311 (July 18, 1975); 43 FR 998, 1001 (Jan. 5, 1978).

²⁷⁴ Under CAA section 177 states may adopt and enforce motor vehicle emissions standards if "such standards are identical to the California standards for which a waiver has been granted." See, e.g., *Motor Vehicle Mfrs. Ass'n v. NYS Dep. of Env't'l Conservation*, 17 F.3d 521, 532 (2d Cir. 1994). "Section 177 refers to 'standards relating to control of emissions . . . for which a waiver has been granted.' *Id.* In enacting § 209(b), which establishes California's preemption exception, Congress uses the same words as it did when it allowed California to set its own 'standards . . . for the control of emissions,' provided the EPA approves a waiver application. *Id.* § 7543(b)(1). Hence, the most logical reading of § 177 is that New York may adopt only those standards that, pursuant to § 209(b), California included in its waiver application to the EPA." (Emphasis in original).

to particulate matter in a 1984 waiver decision.²⁷⁵ In that waiver proceeding, California argued that EPA is restricted to considering whether California needs to have its own motor vehicle program to meet compelling and extraordinary conditions, and does not consider whether any given standard is necessary to meet such conditions. Opponents of the waiver in that proceeding argued that EPA was to consider whether California needed these PM standards to meet compelling and extraordinary conditions related to PM air pollution.

The Administrator agreed with California that it was appropriate to look at the program as a whole in determining compliance with CAA section 209(b)(1)(B). One justification of the Administrator was that many of the concerns with regard to having separate State standards were based on the manufacturers' worries about having to meet more than one motor vehicle program in the country, but that once a separate California program was permitted, it should not be a greater administrative hindrance to have to meet further standards in California. The Administrator also justified this decision by noting that the language of the statute referred to "such state standards," which referred back to the use of the same phrase in the criterion looking at the protectiveness of the standards in the aggregate. He also noted that the phrase referred to standards in the plural, not individual standards. He considered this interpretation to be consistent with the ability of California to have some standards that are less stringent than the federal standards, as long as, under CAA section 209(b)(1)(A), in the aggregate its standards were at least as protective as the federal standards.

The Administrator further stated that in the legislative history of CAA section 209, the phrase "compelling and extraordinary circumstances" refers to "certain general circumstances, *unique to California*, primarily responsible for causing its air pollution problem," like the numerous thermal inversions caused by its local geography and wind patterns. The Administrator also noted that Congress recognized "the presence and growth of California's vehicle population, whose emissions were thought to be responsible for ninety percent of the air pollution in certain parts of California."²⁷⁶ EPA reasoned that the term compelling and extraordinary conditions "does not refer to the levels of pollution directly." Instead, the term refers primarily to the

²⁷⁵ See 49 FR 18887 (May 3, 1984).

²⁷⁶ *Id.* at 18890 (emphasis added).

confluence of factors that tend to produce higher levels of pollution of the type particular to California: “geographical and climatic conditions (like thermal inversions) that, when combined with large numbers and high concentrations of automobiles, create serious air pollution problems.”

The Administrator summarized that the question to be addressed in the second criterion is whether these “fundamental conditions” (*i.e.*, the geographical and climate conditions and large motor vehicle population) that cause air pollution continued to exist, not whether the air pollution levels for PM were “compelling and extraordinary,” nor the extent to which these specific PM standards will address the PM air pollution problem.

From this it can be seen that EPA’s interpretation in the context of reviewing standards designed to address local or regional air pollution has looked at the local causes of the air pollution problems: Geographic and climatic conditions that turn local emissions into air pollution problems, such as thermal inversions, combined with a large number of motor vehicles in California emitting in the aggregate large quantities of emissions. Under the interpretation EPA adopts in this document, it is the particularized nexus between the emissions from California vehicles, their contribution to local pollution, and the extraordinary impacts that that pollution has on California due to California’s specific characteristics, that set California apart from other areas when Congress adopted this provision.

EPA’s review of this criterion has usually been cursory and not in dispute, as the fundamental factors leading to these traditional criteria air pollution problems—geography, local climate conditions (like thermal inversions), significance of the motor vehicle population—have not changed over time and over different local and regional air pollutants. These fundamental factors have applied similarly for all of California’s air pollution problems that are local or regional in nature. California’s circumstances of geography, climate, and motor vehicle population continue to show that it has compelling and extraordinary conditions leading to such local air pollution problems related to traditional pollutants.

California’s motor vehicle program has historically addressed air pollution problems that are generally local or regional in nature. The emission standards have been designed to reduce emissions coming from local vehicles, in circumstances where these local emissions lead to air pollution in

California that will affect directly the local population and environment in California. The narrow question in this waiver proceeding is whether this interpretation is appropriate when considering motor vehicle standards designed to address a global air pollution problem and its effects, as compared to a local or regional air pollution problem that has particular causal ties to conditions in California.

As EPA observed in the SAFE proposal, the agency has articulated differing interpretations of CAA section 209(b)(1)(B). Historically, EPA has interpreted this provision to require that California needs to have its own separate new motor vehicle program in the aggregate to meet compelling and extraordinary conditions in California, not whether the state needs the specific standards under consideration. In 2008, in contrast, when EPA first considered whether State GHG emission regulations meet the requirements for a CAA section 209(b) waiver, EPA determined that the better reading of CAA section 209(b)(1)(B) would be to consider whether California “need[s]” the particular standards at issue “to meet compelling and extraordinary conditions,” and the agency denied the waiver on these grounds. Then, when EPA reconsidered that denial in 2009, the agency reverted to the interpretation that it had previously applied for criteria pollutants and granted the waiver.

EPA concludes that the long and contentious history of this question, and the recent measures that California has taken even during the pendency of this administrative action to amend its State regulations beyond the form in which they were granted the waiver in 2013 and, even more recently, to purport to establish “voluntary” programs creating yet a third program distinct both from that for which CAA preemption was waived in 2013 and the Federal standards promulgated in 2012 and currently under review by the Federal government, confirm that extension of CAA section 209(b) waivers to State GHG and ZEV programs was inappropriate. Such waivers have led to actions by California increasingly at odds with the clear Congressional design and intent that national standards would be set by the federal government with California having an ability to apply for targeted waivers of preemption to address its own particular problems. EPA therefore views this interpretation and application of CAA section 209(b)(1)(B) set forth here as, at minimum, a reasonable one that gives appropriate meaning and effect to this provision and

does not second-guess California’s policy judgment notwithstanding assertions to the contrary.

b. The Distinct Nature of Global GHG Pollution as It Relates to CAA Section 209(b)(1)(B)

The air pollution problem at issue here is elevated atmospheric concentrations of greenhouse gases, and the concern is the impact these concentrations have on global climate change and the effect of global climate change on California. In contrast to local or regional air pollution problems, the atmospheric concentrations of these greenhouse gases are substantially uniform across the globe, based on their long atmospheric life and the resulting mixing in the atmosphere. The factors looked at in the past when considering waiver requests for State standards addressing criteria pollutants—the geography and climate of California, and the large motor vehicle population in California, which were considered the fundamental causes of the air pollution levels found in California—cannot form the basis of a meaningful analysis of the causal link between California vehicles’ GHG emissions and climate effects felt in California. The concentration of greenhouse gases in the upper atmosphere may affect California, but that concentration is not affected in any particular way by the geography and climate of California. The long duration of these gases in the atmosphere means they are well-mixed throughout the global atmosphere, such that their concentrations over California and the U.S. are, for all practical purposes, the same as the global average. The number of motor vehicles in California, while still a notable percentage of the national total and still a notable source of GHG emissions in the State, bears no more relation to the levels of greenhouse gases in the atmosphere over California than any other comparable source or group of sources of greenhouse gases anywhere in the world. Emissions of greenhouses gases from California cars do not generally remain confined within California’s local environment (and, indeed, were they to do so, rather than rise to the upper atmosphere to become well-mixed with other GHG emissions, those locally located emissions would not, by definition, contribute to the “pollution” that is at issue here). Instead, those GHG emissions from vehicles operating in California become one part of the global pool of GHG emissions, with this global pool of emissions leading to a relatively homogenous concentration of greenhouse gases over the globe. Thus, the emissions of motor vehicles in

California do not affect California’s air pollution problem in any way different from emissions from vehicles and other pollution sources all around the world. Similarly, the emissions from California’s cars do not just affect the atmosphere in California, but in fact become one part of the global pool of GHG emissions that affect the atmosphere globally and are distributed throughout the world, resulting in basically a uniform global atmospheric concentration.

Given the different, and global, nature of the pollution at issue, EPA determines that the conceptual basis underlying the practice of considering California’s motor vehicle program as a whole (in the context of criteria emission regulations) does not meaningfully apply with respect to elevated atmospheric concentrations of GHGs. Therefore, EPA has considered whether it is appropriate to apply this criterion in a different manner for this kind of air pollution problem; that is, a global air pollution problem.

As previously explained, the text and relevant legislative history of CAA section 209 also supports EPA’s decision to examine the application of the second waiver denial criterion (CAA section 209(b)(1)(B)) with regard to California’s GHG and ZEV standards specifically in the context of global climate change. It indicates that Congress was moved to allow waivers of preemption for California motor vehicle standards based on the particular effects of local conditions in California on the air pollution problems in California. Congress discussed “the unique problems faced in California as a result of its climate and topography.” H.R. Rep. No. 728, 90th Cong. 1st Sess., at 21 (1967). See also Statement of Cong. Holifield (CA), 113 Cong. Rec. 30942–43 (1967). Congress also noted the large effect of local vehicle pollution on such local problems. See, e.g., Statement of Rep. Bell (CA), 113 Cong. Rec. 30946. In particular, Congress focused on California’s ozone problem, which is especially affected by local conditions and local pollution. See Statement of Rep. Smith (CA), 113 Cong. Rec. 30940–41 (1967); Statement of Rep. Holifield (CA), *id.* at 30942. See also *Motor & Equip. Mfrs. Ass’n, Inc. v. EPA (MEMA)*, 627 F.2d 1095, 1109 (D.C. Cir., 1979) (noting the discussion of California’s “peculiar local conditions” in the legislative history). Congress clearly did not have in view pollution problems of a more national or global nature in justifying this provision.²⁷⁷ Moreover,

²⁷⁷ In reference to another argument made in the 1984 waiver, while the administrative costs of a

“the [Clean Air] Act also differentiates between the states, despite our historic tradition that all the States enjoy equal sovereignty. Distinctions can be justified in some cases. ‘The doctrine of the equality of States . . . does not bar . . . remedies for *local* evils which have subsequently appeared.’ But a departure from the fundamental principle of equal sovereignty requires a showing that a statute’s disparate geographic coverage is sufficiently related to the problem that it targets.” *Nw. Austin Mun. Util. Dist. No. One v. Holder*, 557 U.S. 193, 203 (2009) (some citations and internal quotation marks omitted) (quoting *South Carolina v. Katzenbach*, 383 U.S. 301, 328–29 (1966)) (ellipses and emphasis added by *Northwest Austin Court*); see also *Katzenbach*, 383 U.S. at 334 (“*exceptional conditions* can justify legislative measures not otherwise appropriate”) (emphasis added); *cf.* 42 U.S.C. 7543(b)(1)(B) (“No such waiver shall be granted if the Administrator finds that . . . such State does not need such State standards to meet *compelling and extraordinary conditions.*”) (emphasis added). These principles support our conclusion that Congress did not intend the waiver provision in CAA section 209(b) to be applied to California measures that address pollution problems of a national or global nature, as opposed to conditions that are “extraordinary” with respect to California in particular—*i.e.*, those with a particularized nexus to emissions in California and to topographical or other features peculiar to California.”

c. It Is Appropriate To Apply CAA Section 209(b)(1)(B) Separately to GHG Standards

EPA concludes that in the context of reviewing California GHG related standards designed to address global climate change, it is appropriate to apply the second criterion separately for GHG standards.

The intent of Congress, in enacting CAA section 209(b) and in particular Congress’s decision to have a separate CAA section 209(b)(1)(B), was to require EPA to specifically review whether California continues to have compelling and extraordinary conditions and the need for State standards to address those conditions. Thus, EPA concludes that it is appropriate to review

program may not increase significantly based on the addition of new standards, there is still cost in the implementation of new standards, particularly in terms of changes in design necessitated by the new standards. In any case, this issue does not appear to be relevant to the issue of whether California needs its standards to meet compelling and extraordinary conditions.

California’s GHG standards separately from the remainder of the State’s motor vehicle emission control program for purposes of CAA section 209(b)(1)(B).

In this context it is appropriate to give meaning to this criterion by looking at whether the emissions from California motor vehicles, as well as the local climate and topography in California, are the fundamental causal factors for the air pollution problem—elevated concentrations of greenhouse gases—apart from the other parts of California’s motor vehicle program, which are intended to remediate different air pollution concerns.

The appropriate criteria to apply therefore is whether the emissions of California motor vehicles, as well as California’s local climate and topography, are the fundamental causal factors for the air pollution problem of elevated concentrations of greenhouse gases.

d. Relationship of California Motor Vehicles, Climate, and Topography to Elevated Concentrations of Greenhouse Gases in California

Under CAA section 209(b)(1)(B), EPA proposed to withdraw the waiver of preemption of the ACC program GHG and ZEV standards for MY 2021–2025 on two alternative grounds. Specifically, (1) California “does not need” these standards “to meet compelling and extraordinary conditions;” and (2) even if California does have compelling and extraordinary conditions in the context of global climate change, California does not “need” these standards because they will not meaningfully address global air pollution problems of the sort associated with GHG emissions. 83 FR 43248.

As previously explained, EPA proposed to determine that the balance of textual, contextual, structural, and legislative history evidence provide reasonable support for the conclusion that the statute is ambiguous in one particular respect: Whether section 209(b)(1)(B) refers to an individual standard or the California standards as a whole when referring to the Administrator’s review of state standards submitted for a waiver, to determine whether the state “needs such State standards to meet compelling and extraordinary conditions,” and that the approach of examining the need for GHG-related standards separate from the other, traditional aspects of California’s program is reasonable given, among other factors, the unique nature of the global pollutant. EPA recognizes that Congress’s purpose in establishing the prohibition in CAA section 209(a) and the waiver in CAA section 209(b) was to

balance the benefit of allowing California significant discretion in deciding how to protect the health and welfare of its population with the burden imposed on the manufacturers of being subject to two separate motor vehicle programs and the overarching policy judgment that uniform national standards are appropriate. S. Rep. No. 403, 90th Cong. 1st Sess., at 32–33 (1967). It is clear that Congress intended this balance to be premised on a situation where California needs the State standards to meet compelling and extraordinary conditions. Thus, if EPA determines that California does not need its State GHG standards to meet compelling and extraordinary conditions, a waiver of preemption for those State standards is not permitted under the statute.

Commenters supportive of EPA’s proposal to withdraw the waiver commented that California should not continue to enjoy a waiver for separate State GHG standards because those State standards are not needed to meet compelling and extraordinary conditions because there is no link between California-based motor vehicle GHG emissions and any alleged extraordinary conditions in California. These commenters state that while California spends a great deal of time discussing the effects of climate change in California, California does not link its GHG standards to those effects. They note that GHGs are not localized pollutants that can affect California’s local climate, or that are problematic due to California’s specific topography. Instead, emissions from vehicles in California become mixed with the global emissions of GHG and affect global climate (including California’s climate) in the same way that any GHG from around the world affect global (and California) climate conditions. They claim that Congress authorized EPA to grant a waiver of preemption only in cases where California standards were necessary to address peculiar local air quality problems. They claim that there can be no need for separate California standards if the standards are not aimed at, and do not redress, a California-specific problem.

In previous waiver decisions, EPA was asked to waive preemption of standards regulating emissions that were local or regional in effect. Local air pollution problems are affected directly by local conditions in California, largely the emissions from motor vehicles in California in the context of the local climate and topography. As a result, State standards regulating such local motor vehicle emissions will have a direct effect on the concentration of

pollutants directly affecting California’s environment. They are effective mechanisms to reduce the levels of local air pollution in California because local conditions are the primary cause of that kind of air pollution problem. In addition, reductions in emissions from motor vehicles that occur elsewhere in the United States will not have the same impact, and often will have no impact, on reducing the levels of local air pollution in California.

By contrast, GHGs emitted by California motor vehicles become part of the global pool of GHG emissions that affect concentrations of GHGs on a uniform basis throughout the world. The local climate and topography in California have no significant impact on the long-term atmospheric concentrations of greenhouse gases in California. Greenhouse gas emissions from vehicles or other pollution sources in other parts of the country and the world will have as much effect on California’s environment as emissions from California vehicles. As a result, reducing emissions of GHGs from motor vehicles in California has the same impact or effect on atmospheric concentrations of GHGs as reducing emissions of GHGs from motor vehicles or other sources elsewhere in the U.S., or reducing emissions of GHGs from other sources anywhere in the world. California’s motor vehicle standards for GHG emissions do not affect only California’s concentration of GHGs, but affect such concentrations globally, in ways unrelated to the particular topography in California. Similarly, emissions from other parts of the world affect the global concentrations of GHGs, and therefore concentrations in California, in exactly the same manner as emissions from California’s motor vehicles.

Further, as explained in the SAFE proposal, California’s claims that it is uniquely susceptible to certain risks because it is a coastal State does not differentiate California from other coastal States such as Massachusetts, Florida, and Louisiana, much less that conditions in California are any more “extraordinary” as compared to any other coastal States, particularly those coastal States that may possess a greater percentage of low-lying territory than California. Any effects of global climate change (e.g. water supply issues, increases in wildfires, effects on agriculture) could certainly affect California. But those effects would also affect other parts of the United States.²⁷⁸

²⁷⁸ Some commenters made this same point. See, e.g., Fiat Chrysler Automobiles, Docket No. EPA–HQ–OAR–2018–0283–4406 at 89; American Fuel &

Many parts of the United States, especially western States, may have issues related to drinking water (e.g., increased salinity) and wildfires, and effects on agriculture; these occurrences are by no means limited to California. These are among the types of climate change effects that EPA considered in the 2009 CAA section 202(a) endangerment finding which is the predicate for its authority to issue national motor vehicle GHG standards. But EPA’s evaluation of whether California’s standards are “need[ed] to meet compelling and extraordinary conditions” is not identical to its prior determination, pursuant to CAA section 202(a) whether GHG emissions from the national motor vehicle fleet contribute to pollution that may reasonably be anticipated to endanger public health or welfare. In order for a waiver request to pass muster under CAA section 209(b)(1)(B), as set forth in this document, a particularized, state-specific nexus must exist between sources of pollutants, resulting pollution, and impacts of that pollution. This is analogous to but distinct from the more abstract or general predicate finding for regulation under CAA section 202(a); if it were not distinct, then California would, under CAA section 209(b)(1)(B), *always* “need” a waiver for a state-specific program to “meet” any pollution problem that it experienced once EPA had found under CAA section 202(a) that motor vehicle emissions contribute to that pollution problem (without particular reference to that pollution problem’s impact on California). This would effectively nullify the second waiver denial prong, CAA section 209(b)(1)(B).²⁷⁹ California

Petrochemical Manufacturers, Docket No. E_A–HQ–OAR–2018–0283–5648 at 34, 36. At least one recent analysis, cited by a number of commenters, has produced estimates of climate change damage that project that with respect to such matters as coastal damage, agricultural yields, energy expenditures, and mortality, California is not worse-positioned in relation to certain other areas of the U.S., and indeed is estimated to be better-positioned, particularly as regards the Southeast region of the country. See S. Hsiang, *et al.* “Estimating Economic Damage from Climate Change in the United States,” 356 *Science* 1362 (2017).

²⁷⁹ Cf. *Ford*, 606 F.2d at 1303 n.68 (affirming EPA’s refusal to allow nationwide sale of cars that meet California standards that, due to the waiver predicate that California’s standards only need be as stringent as federal standards in the aggregate, were not certified as meeting national standards with respect to all pollutants) (“[Appellants] suggest to varying degrees that California is a microcosm of the entire nation and, as such, has no particularized problems the resolution of which would require emission control standards inappropriate to the rest of the country. This may or may not be completely true. The fact remains, however, that Congress expected California to be putting its interests first and there is no guarantee that those interests are congruent with the interests

would have it that the 2009 CAA section 202(a) GHG endangerment finding necessarily means California “needs” its own GHG program “to meet compelling and extraordinary conditions.” That does not follow.²⁸⁰ *Cf. Utility Air Regulatory Group v. EPA*, 134 S. Ct. 2427 (2014) (partially reversing the GHG “Tailoring” Rule on grounds that the CAA section 202(a) endangerment finding for GHG emissions from motor vehicles did not compel regulation of all sources of GHG emissions under the Prevention of Significant Deterioration and Title V permit programs). 83 FR 43249.

EPA has discussed the reasons for concluding that it is appropriate to consider California’s GHGs standards separately in determining whether the State needs those standards to meet compelling and extraordinary conditions, as compared to looking at its need for a motor vehicle program in general. These reasons also lead to the conclusion that California does not need these GHG standards to meet compelling and extraordinary conditions. The text, structure, and legislative history indicates that Congress’s intent in the second waiver criterion, CAA section 209(b)(1)(B), was to allow California to adopt new motor vehicle standards because of compelling

of the nation as a whole.”). Here, California offers an inverse reflection of appellants’ argument in *Ford*, but it is no more valid: Because it can marshal a list of climate impacts that it is experiencing, California insists it is entitled to a waiver for a state-specific program to address those impacts. All of California’s problems and corresponding programs, under this logic, are “particularized.” If this were the case, no waiver request could ever be denied under CAA section 209(b)(1)(B), and Congress would much more likely have simply afforded California a blanket and automatic waiver. Congress did not do so, its choice not to do so should be respected and given meaning, and EPA in this document sets forth an interpretation and application of CAA section 209(b)(1)(B) that does so by articulating a required particularized nexus to State-specific facts which is present in the case of California’s criteria vehicle emissions programs but lacking in the case of its GHG and ZEV ones.

²⁸⁰ EPA notes in this regard that, even in the 2009 reversal of the 2008 waiver denial, the Agency was careful to distinguish its consideration of the waiver application from “the issues pending before EPA under section 202(a) of the Act,” *i.e.*, the then-pending endangerment finding. 74 FR at 32765. While EPA maintains the position that the CAA section 202(a) “endangerment finding” inquiry and the CAA section 209(b)(1)(B) inquiry are distinct, EPA notes that the 2009 waiver denial reversal (and the 2008 waiver denial itself) took pains to distinguish the two primarily because the Agency was at that time still considering whether to issue the endangerment finding. As EPA explains in this document, the two provisions are distinct, but the CAA section 202(a) predicate criteria for federal regulation do support the Agency’s position that the CAA section 209(b)(1)(B) waiver prong is best interpreted as calling for a consideration whether the pollution problem at issue has a State-specific, particularized nexus between emissions, pollution, and impacts.

and extraordinary conditions in California that were causally related to local or regional air pollution levels in California. These factors—including topography and large population of motor vehicles—cause these kinds of local or regional air pollution levels in California and because of this causal link, California’s motor vehicle standards can be effective mechanisms to address these local problems. Reductions outside California would lack that causal link to local or regional air quality conditions inside California.

Congress did not indicate any intent to allow California to promulgate local standards to deal with global air pollution like atmospheric concentrations of GHGs. In California’s comments on the SAFE proposal, it asserted that it has a need for reductions in GHG atmospheric concentrations and therefore emissions, but the issue is not whether such reductions are needed as a matter of general policy, but whether Congress intended them to be effectuated on a State-specific basis by California through EPA granting a waiver for the GHG aspects of the State’s new motor vehicle program. This type of pollution seems ill-fitted to Congress’s intent to provide California with a method of handling its local air pollution concentrations and related problems with local emission control measures. EPA determines that standards regulating emissions of global pollutants like greenhouse gases were not part of the compromise envisioned by Congress in passing CAA section 209(b).²⁸¹ Moreover, even if California does have compelling and extraordinary conditions in the context of global climate change, California does not “need” these standards under CAA section 209(b)(1)(B) because they will not meaningfully address global air pollution problems of the sort associated with GHG emissions. As noted in the SAFE proposal, the most stringent of the regulatory alternatives considered in the 2012 final rule and FRIA (under much more optimistic assumptions about technology effectiveness), which would have required a seven percent average annual fleetwide increase in fuel economy for MYs 2017–2025 compared to MY 2016 standards, was forecast to decrease global temperatures only by 0.02 °C in 2100.²⁸² This conclusion was further

²⁸¹ Moreover, EPA is mindful that principles of equal sovereignty between the states ordinarily require “‘exceptional conditions’ prevailing in certain parts of the country [to] justify] extraordinary legislation otherwise unfamiliar to our federal system.” *Northwest Austin*, 557 U.S. at 211.

²⁸² 83 FR 42986, 43216–43217.

bolstered by multiple commenters.²⁸³ EPA therefore concludes that California’s GHG and ZEV regulations do not fulfil the requirement within CAA section 209(b)(1)(B) that such regulations are “needed” to “meet” the impacts of global climate change in California, even assuming *arguendo* that those impacts do constitute “compelling and extraordinary conditions” within the meaning of that statutory phrase (although, to be clear, EPA is determining that those impacts do not in fact fall within that phrase’s meaning). Given that Congress enacted CAA section 209(b) to provide California with a unique ability to receive a waiver of preemption, which provides California with authority that it would not otherwise have under CAA section 209, and given the specific language in CAA section 209(b)(2) pointing out the need for extraordinary and compelling conditions as a condition for the waiver, EPA determines that it is not appropriate to waive preemption for California’s standards that regulate GHGs. Atmospheric concentrations of greenhouse gases are an air pollution problem that is global in nature, and this air pollution problem does not bear the same causal link to factors local to California as do local or regional air pollution problems. EPA determines that globally elevated atmospheric concentrations of GHGs and their environmental effects are not the kind of local or regional air pollution problem that fall within the scope of the “compelling and extraordinary conditions” encompassed by the terms of CAA section 209(b)(1)(B). As such, EPA finds that California does not need its 2021 through 2025 MY GHG-related standards to meet compelling and extraordinary conditions.²⁸⁴

²⁸³ The George Washington University Regulatory Studies Center, Docket No. EPA–HQ–OAR–2018–0283–4028; Competitive Enterprise Institute, Docket No. NHTSA–2018–0067–12015.

²⁸⁴ EPA disagrees with comments that suggest that California “needs” its GHG and ZEV programs “to meet compelling and extraordinary conditions” in the meaning of CAA section 209(b)(1)(B) because those programs are intended to reduce criteria pollutant emissions, separate and apart from their status as programs designed to address climate change. To take this position would not be in keeping with historical agency practice in reviewing California’s waiver requests. Specifically, EPA practice is not to scrutinize California’s criteria pollutant emissions reductions projections or air emissions benefits. Rather, EPA’s view has been that these are matters left for California’s judgments, especially given that Title I of the Clean Air Act imposes the obligation of NAAQS attainment planning on states. *See, e.g.*, 36 FR 17458; 78 FR 2134; 79 FR 46256, 46261 (Aug. 7, 2014). EPA’s withdrawal action is premised on CARB’s 2012 ACC program waiver request, which, as previously

Continued

e. No Findings Under CAA Section 209(b)(1)(C) Are Finalized at This Time

In the SAFE proposal, EPA proposed to determine, as an additional basis for the waiver withdrawal, that California's ZEV and GHG standards for new MY 2021 through 2025 are not consistent with section 202(a) of the Clean Air Act. That proposed determination was intertwined with the SAFE proposal's assessment with regard to the technological feasibility of the Federal GHG standards for MY 2021 through 2025 and the proposed revisions thereto. Because EPA and NHTSA are not at this time finalizing that assessment or taking final action on the proposal to revise the Federal standards, and because the finalized determinations under CAA section 209(b)(1)(B) and the discussion of the implications of EPCA preemption with regard to the waiver previously granted with respect to those standards set forth above are each independent and adequate grounds for the waiver withdrawal, EPA at this time is not finalizing any determination with respect to CAA section 209(b)(1)(C). EPA may do so in connection with potential future final action with regard to the Federal standards.

E. Withdrawal of Waiver

In this final action, EPA determines that the California Air Resources Board's (CARB's) regulations pertaining to greenhouse gases-related (GHG) emission standards for 2021 through 2025 model year (MY) passenger cars, light-duty trucks, and medium-duty vehicles are not needed to meet compelling and extraordinary conditions. EPA concludes that CAA section 209(b) was intended to allow California to promulgate State standards applicable to emissions from new motor vehicles to address pollution problems that are local or regional, and that have a particular nexus to emissions from vehicles in California.²⁸⁵ EPA does not believe CAA section 209(b)(1)(B) was intended to allow California to

discussed, only discussed the potential GHG benefits or attributes of CARB's GHG and ZEV standards program (78 FR 2114, 2130-2131). If EPA does not even scrutinize a California program's criteria pollutant emission and benefits projections when California applies for a waiver for that program *presenting it as a criteria program*, then a *fortiori* commenters' retrospective attempt to claim criteria benefits to maintain a waiver for programs that were originally presented to EPA in a waiver request that disclaimed any such benefits is not appropriate.

²⁸⁵ As noted in the SAFE proposal, "Attempting to solve climate change, even in part, through the Section 209 waiver provision is fundamentally different from that section's original purpose of addressing smog-related air quality problems." 83 FR 42999.

promulgate State standards for emissions from new motor vehicles designed to address global climate change problems.

EPA's 2013 waiver for CARB's Advanced Clean Car Program (as it pertains to its 2021 through 2025 MY relating to greenhouse gas emissions and the ZEV mandate) is withdrawn. This is separate and apart from EPA's determination that it cannot and did not validly grant a waiver with respect to those California State measures which are preempted under NHTSA's determination in this document that EPCA preempts State GHG and ZEV programs, which, as explained above, is effective on the effective date of this joint action.

F. States Cannot Adopt California's GHG Standards Under CAA Section 177

At proposal, EPA explained that CAA section 177 provides that other States, under certain circumstances and with certain conditions, may "adopt and enforce" standards that are "identical to the California standards for which a waiver has been granted for [a given] model year." 42 U.S.C. 7507. As a result, EPA proposed to determine that this section does not apply to CARB's GHG standards given that they are intended to address global air pollution. We also noted that the section is titled "New motor vehicle emission standards in nonattainment areas" and that its application is limited to "any State which has [state implementation] plan provisions approved under this part"—*i.e.*, under CAA title I part D, which governs "Plan requirements for nonattainment areas."

We received comments in support of and against our proposal. Commenters opposing our interpretation argued that CAA section 177 does not contain any text that could be read as limiting its applicability to certain pollutants only. They also argued that EPA has inappropriately relied on the heading for CAA section 177 to construe a statutory provision as well as arrogated authority to implement an otherwise self-implementing provision. We disagree with these commenters, conclude that the text (including both the title and main text), structural location, and purpose of the provision confirm that it does not apply to GHG standards, and are finalizing this determination as proposed.

Under the Clean Air Act, EPA establishes national ambient air quality standards (NAAQS) to protect public health and welfare and has established such ambient standards for the following criteria pollutants: ozone, carbon monoxide, nitrogen dioxide,

sulfur dioxide, lead, and particulate matter. As also explained at proposal, areas are only designated nonattainment with respect to criteria pollutants for which EPA has issued a NAAQS, and nonattainment State Implementation Plan (SIPs) are intended to assure that those areas attain the NAAQS.

Congress added CAA section 177 in the 1977 Clean Air Act amendments cognizant that states might need to address air pollution within their boundaries similar to California but were otherwise preempted under CAA section 209(a) from setting new motor vehicle and engine standards. *See, e.g.*, H.R. Rep. No. 294, 95th Cong., 1st Sess. 309 (1977), 1977 U.S.C.C.A.N. 1077, 1388 (explaining that the Committee "was concerned that this preemption (section 209(a) of the Act) now interferes with legitimate police powers of States"); *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. New York State Dep't of Env'tl. Conservation*, 17 F.3d 521, 527 (2d Cir. 1994) ("It was in an effort to assist those states struggling to meet federal pollution standards that Congress, . . . directed in 1977 that other states could promulgate regulations requiring vehicles sold in their state to be in compliance with California's emission standards or to 'piggyback' onto California's preemption exemption."), *citing* H.R. Rep. No. 294, 95th Cong., 1st Sess. 309-10 (1977); *id.* at 531 ("[Section] 177 was inserted into the Act in 1977 so that states attempting to combat their own pollution problems could adopt California's more stringent emission controls."). Relevant legislative history further identifies CAA section 177 as a means of addressing the NAAQS attainment planning requirements of CAA section 172, including the specific SIPs content and approvals criteria for EPA.²⁸⁶ H.R.

²⁸⁶ The version of CAA section 172 adopted in 1977 set forth the general requirements for state plans for nonattainment areas and CAA section 172(b) set forth the "requisite provisions" of those plans. In drafting the provisions that would become CAA section 172(b), Congress explained that they required the Administrator, after notice and opportunity for a public hearing, to approve "a State plan which meets the following criteria: It must identify all nonattainment areas for each pollutant. Next it must assure attainment of the national ambient air quality standard in those areas as expeditiously as practicable, but not later than December 31, 1982, for all pollutants other than photochemical oxidants. In respect to photochemical oxidants, the standard must be met as expeditiously as practicable, but not later than December 31, 1987. The plan must include a comprehensive, accurate, up-to-date inventory of actual emissions from all sources of pollutants in the area. This inventory must be revised and resubmitted every 2 years to substantiate that reasonable further progress has been achieved as a condition for permitting additional sources of pollution. Finally, the plan must identify and quantify the actual emissions which must be taken

Rep. No. 294, 95th Cong., 1st Sess. 213 (1977), 1977 U.S.C.C.A.N 1077, 1292 (“Still another element of flexibility for States that is afforded in this section is the authority for States with nonattainment areas for automotive pollutants (other than California) to adopt and enforce California new-car emission standards if adequate notice is given.”).

Contrary to commenters’ assertions, therefore, the text, placement in Title I, and relevant legislative history are all indicative that CAA section 177 is in fact intended for NAAQS attainment planning and not to address global air pollution. As further explained in section D.2, GHG is a globally distributed pollutant with environmental effects that are different enough from emissions of criteria pollutants. For example, GHG emissions from fleet in California bear no more relation to GHG emissions in California than fleet in other parts of the country. Where states are now adopting standards for intents and purposes far removed from NAAQS attainment planning or more specifically directed at global air pollution, EPA as the agency charged with implementing the Clean Air Act is acting well within that role in setting out an interpretation that aligns with Congressional intent. See *Chevron U.S.A. v. NRDC*, 467 U.S. 837, 843 (1984) (“The power of an administrative agency to administer a congressionally created . . . program necessarily requires the formulation of policy and the making of rules to fill any gap left, implicitly or explicitly, by Congress.”). This construct also comports with our reading of CAA section 209(b)(1)(B) as limiting applicability of CAA section 209(b) waiver authority to state programs that address pollutants that affect local or regional air quality and not those

into account by the State for purposes of deciding how to achieve reasonable further progress and assure timely attainment. Thus, the plan must consider the following factors among others: The actual emissions increases which will be allowed to result from the construction and operation of major new or modified stationary sources in the area; the actual emissions of such pollutant from unregulated sources, fugitive emissions and other uncontrolled sources; actual emissions of the pollutant from modified and existing indirect sources; actual emissions resulting from extension or elimination of transportation control measures; actual emissions of such pollutant resulting from in-use motor vehicles and emissions of such pollutant resulting from stationary sources to which delayed compliance orders or enforcement orders (pursuant to sec. 121 (pursuant to sec. 121 or sec 113(b)) and compliance date extension (pursuant to sec. 119) have been issued; and actual transported emissions.” H.R. Rep. No. 294, 95th Cong., 1st Sess. 212 (1977), 1977 U.S.C.C.A.N. 1077, 1291, 1977 WL 16034 (emphasis added).

relating to global air pollution like GHGs.

G. Severability and Judicial Review

EPA intends that its withdrawal of the January 2013 waiver for California’s GHG and ZEV programs on the basis of EPCA preemption, to take effect upon the effective date of this joint action, as set forth in subsection III.C, on the one hand, is separate and severable from its withdrawal of the January 2013 waiver for those programs on the basis of an interpretation and application of CAA section 209(b)(1)(B), beginning in model year 2021, as set forth in subsection III.D, on the other. EPA further intends that its withdrawal of the waiver with regard to California’s GHG program is severable from its withdrawal of the waiver with regard to California’s ZEV program. The basis for this distinction (*i.e.*, that EPA intends that its withdrawal of the waiver for California’s GHG program and for its ZEV program should be severable from one another) is, as follows, twofold: (1) While EPA concludes for the reasons set forth in subsection III.D above that the ZEV program, as subjected to the January 2013 waiver and as presented to EPA by CARB in CARB’s waiver application and supporting documents, is a GHG-targeting program and as such is susceptible to the interpretation and application of CAA 209(b)(1)(B) set forth above, EPA acknowledges that there are aspects to the analysis as it affects the state’s ZEV program that are not applicable with respect to the state’s GHG program; (2) in this final action, NHTSA expresses in section II above its intent that its determination that a State or local law or regulation of tailpipe greenhouse gas emissions from automobiles is related to fuel economy standards is severable from its determination that State or local ZEV mandates are related to fuel economy standards. EPA further intends that its determination with regard to the scope of CAA section 177 as set forth in subsection III.F above be severable from all other aspects of this joint action.

Pursuant to CAA section 307(b)(1), judicial review of this final action may be sought only in the United States Court of Appeals for the District of Columbia Circuit. For the reasons explained in this section, this final waiver withdrawal action is nationally applicable for purposes of CAA section 307(b)(1). To the extent a court finds this action to be locally or regionally applicable, for the reasons explained in this section, EPA determines and finds for purposes of CAA section 307(b)(1) that this final waiver withdrawal action is based on a determination of

nationwide scope or effect. As also explained at proposal, CAA Section 307(b)(1) of the CAA provides in which Federal courts of appeal petitions of review of final actions by EPA must be filed. This section provides, in part, that petitions for review must be filed in the Court of Appeals for the District of Columbia Circuit if: (i) The Agency action consists of “nationally applicable regulations promulgated, or final action taken, by the Administrator,” or (ii) such action is locally or regionally applicable, but “such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such action is based on such a determination.” Additionally, we proposed to find that any final action resulting from the August 2018 SAFE proposal is based on a determination of “nationwide scope or effect” within the meaning of CAA section 307(b)(1). We explained that the withdrawal, when finalized, would affect persons in California and those manufacturers and/or owners/operators of new motor vehicles nationwide who must comply with California’s new motor vehicle requirements. For instance, California’s program provides that manufacturers may generate credits in CAA section 177 States as a means to satisfy those manufacturers’ obligations to comply with the mandate that a certain percentage of their vehicles sold in California be ZEV (or be credited as such from sales in CAA section 177 States). In addition, other States have adopted aspects of California’s ACC program; this decision would also affect those States and those persons in such States, which are in multiple EPA regions and federal circuits.

This final action is distinguishable from the situation faced by the D.C. Circuit in *Dalton Trucking Inc., v. EPA*, 808 F.3d 875 (D.C. Cir. 2015), where the Court held that EPA’s action on California’s waiver request with respect to its nonroad engine program was not nationally applicable, and that EPA had not properly made and published a finding that its action was based on a determination of nationwide scope and effect. First, *Dalton Trucking* noted that no other State had ever adopted California’s nonroad program, *id.* at 880; that is not the case here. Second, *Dalton Trucking* noted that the nonroad waiver final action was facially limited to fleets operating in California, *id.* at 881; the nature of the California program at issue here, with its complex credit system connected with sales in other States, is quite different. Third, *Dalton Trucking* noted that EPA in the nonroad waiver

final action did not actually make and publish a finding that that final action was based on a determination of nationwide scope and effect, *id. Dalton Trucking* expressly did *not* hold, and indeed expressly disclaimed any intent to even suggest, that EPA could not have made and published such a finding in that action. *Id.* at 882. EPA in this document does so with regard to this final action, for the reasons stated above. For these reasons, this final waiver withdrawal action is nationally applicable for purposes of CAA section 307(b)(1), or, in the alternative, EPA determines and finds for purposes of CAA section 307(b)(1) that this final waiver withdrawal action is based on a determination of nationwide scope or effect. Thus, pursuant to CAA section 307(b), any petitions for review of this final action must be filed in the Court of Appeals for the District of Columbia Circuit within 60 days from the date such final action is published in the **Federal Register**.

IV. Regulatory Notices and Analyses

As it is relevant to many of the following discussions, it is important to clarify at the outset that this action does not finalize or otherwise affect either EPA’s GHG standards or NHTSA’s CAFE standards and, thus, the various impacts associated with those standards have not been considered below. Further, consistent with its past practice, EPA’s withdrawal of the waiver does not add or amend regulatory text and is, therefore, subject to considerably fewer of the below discussions than NHTSA’s final rule establishing regulatory text on preemption.

A. Executive Order 12866, Executive Order 13563

Executive Order 12866, “Regulatory Planning and Review” (58 FR 51735, Oct. 4, 1993), as amended by Executive Order 13563, “Improving Regulation and Regulatory Review” (76 FR 3821, Jan. 21, 2011), provides for making determinations whether a regulatory action is “significant” and therefore subject to the Office of Management and Budget (OMB) review and to the requirements of the Executive Order.

Under section 3(f) of Executive Order 12866, NHTSA’s final rule has been determined to be a “significant regulatory action,” but not an economically significant action. EPA’s withdrawal on the waiver, however, is not a rule under E.O. 12866, as consistent with the agency’s historical classification of its notices and decisions related to the waiver. However, as part of its commitment to

working together with NHTSA to establish a consistent Federal program for fuel economy and GHG emissions, EPA has submitted this action to the OMB for review and any changes made in response to OMB recommendations have been documented in the docket for this action. EPA’s action here, however, is not a rule as defined by Executive Order 12866, consistent with its previous actions on waiver requests, and is therefore exempt from review by the Office of Management and Budget as required for rules and regulations by Executive Order 12866. *See, e.g.,* 78 FR at 2145 (Jan. 9, 2013); 74 FR at 32784 (July 8, 2009); 73 FR at 12169 (Mar. 6, 2008).

In determining the economic impact of this action, it is important to be clear that the rule establishing new standards for the Model Years within scope of the NPRM is expected to continue to be economically significant and is, thus, anticipated, to include a full FRIA. Moreover, as EPA’s action is not a rule and not subject to E.O. 12866, its consideration of costs has been limited to the role costs play under section 209. Accordingly, the following discussion only concerns the economic impact associated with NHTSA’s final regulatory text clarifying its views on EPCA preemption.

As a general matter, NHTSA has determined that there may be some nonsignificant economic impact arising out of its clarification, particularly some reduction in costs, to this final rule, but the agency has not quantified any such impact in this rulemaking, which has been determined to be “significant” but not “economically significant” under Executive Order 12866. This rulemaking merely clarifies the existing statutory provisions relating to preemption that have been in effect since EPCA was enacted and does not modify any Federal requirement. As such, as in the NPRM, the agency has provided a qualitative discussion of the impacts in response to the comments, which themselves raised qualitative issues.

In the NPRM, NHTSA mentioned at a general, qualitative, level that California’s currently existing GHG program and ZEV mandate lead to increased compliance costs, with some greater discussion of potential increases in costs due specifically to the ZEV mandate, which constrains an OEMs ability to meet their CAFE and GHG requirements in the most cost-effective way.

The agencies received many comments on the economic analysis as it relates to the CAFE and GHG standards, but only received a small number of comments that specifically

dealt with the issue of the economic impact of the regulatory text concerning EPCA preemption. These comments, similar to how the agency addressed the issue in the NPRM, generally made qualitative and general points about the economic impact.

Many of the comments that addressed the economic impacts of preemption did so by stating that one important aspect of the “One National Program” established beginning in 2009 was that it would reduce regulatory cost by not allowing for the creation of different Federal and California programs, with different levels of stringency and different compliance regimes. NHTSA agrees with this concern, but this is exactly why Congress provided that any State or local law “related to” fuel economy is preempted. This final rule will provide more certainty on this issue than the prior approach, which would always be subject to California removing itself from the program. This is exactly what has occurred in recent months, as the State has taken action to amend the “deemed to comply” provision and then announced that it entered into an agreement with several automakers to apply a different set of standards on a national basis.

Various other commenters noted that the GHG program and ZEV mandate would increase compliance costs. Most of these comments only made general statements to this effect and did not provide specific or detailed information about potential costs. One commenter approvingly noted NHTSA’s citation of a study that found that the ZEV mandate could potentially lead to increased costs, though the author of the cited study also commented that the cited value did not provide a complete picture of the economic effect. The agency agrees that programs such as these are likely to introduce additional costs, which, of course, was a significant part of Congress’s motivation in providing NHTSA with its broad preemptive authority over fuel economy. The agency, though, like commenters, has found calculation of these costs to be challenging, as they constrain the avenues of compliance with the Federal standards without actually altering what must be, ultimately, achieved.

With regard to benefits, some commenters believed that California’s GHG program and ZEV mandate could provide additional benefits, but, as with costs, these commenters did not provide detailed information about the benefits of these programs independent of the Federal standards. One commenter argued that a separate State GHG program is unlikely to have any

meaningful benefits, because of “leakage” from vehicles in States that adopt the California standards to vehicles in States that do not adopt this standard. Although the comment was in context of supporting the “One National Program,” NHTSA believes that the argument that separate State standards will have little benefit has merit. The existence of State or local laws does not in any way alter an OEM’s obligation under Federal law. For instance, OEMs would likely produce more efficient vehicles for sale in California and the States that have adopted California’s standards, but the increased fuel economy of these vehicles would likely be offset by less efficient vehicles produced for sale in the rest of the U.S., leading to little to no change in either fuel use or GHG emissions at a national level. Some commenters stated that the decision to preempt programs including and similar to the ZEV mandate, to the extent that those programs are related to fuel economy, would have negative benefits related to ozone-forming pollutants, though these commenters did not quantify these concerns. NHTSA notes that, as was discussed in the NPRM, California, in its 2013 waiver request, noted that the ZEV program did not provide for ozone-forming pollutants, acknowledging, “[t]here is no criteria emissions benefit from including the ZEV proposal in terms of vehicle (tank-to-wheel or TTW) emissions. The LEV III criteria pollutant fleet standard is responsible for those emission reductions in the fleet; the fleet would become cleaner regardless of the ZEV regulation because manufacturers would adjust their compliance response to the standard by making less polluting conventional vehicles.”²⁸⁷ NHTSA continues to believe that preemption of the programs such as the ZEV mandate will not have a significant effect, as California remains free to revise its LEV program to reduce ozone-forming emissions and seek a waiver of Clean Air Act preemption from EPA, as described above, while not violating NHTSA’s preemption authority, and other States and local governments would continue to be allowed to take other actions so long as those are not related to fuel economy and are consistent with any other relevant Federal law.

The comments, therefore, reaffirm NHTSA’s preliminary determination that State and Local programs including, and similar to, California’s GHG and ZEV programs are likely to lead to increased compliance costs and highly

uncertain, if any, benefits because they constrain the ability of OEMs to meet the Federal standard without in anyway altering their obligations under that standard. Further, the agency’s decision that State or local laws such as the GHG program and ZEV mandate should be preempted is not based on any evaluation of the policy or other merits of either program, but simply the fact that these programs are clearly related to fuel economy.

B. DOT Regulatory Policies and Procedures

The final rule is also significant within the meaning of the Department of Transportation’s Order 2100.6, “Policies and Procedures for Rulemakings.” Regulatory Policies and Procedures.

C. Executive Order 13771 (Reducing Regulation and Controlling Regulatory Costs)

NHTSA’s final rule is expected to be an E.O. 13771 deregulatory action, but NHTSA has not estimated any quantifiable cost savings. EPA’s withdrawal is not a regulatory action and thus outside the scope of E.O. 13771.

D. Congressional Review Act

Pursuant to the Congressional Review Act (5 U.S.C. 801 *et seq.*), the Office of Information and Regulatory Affairs designated this action as not a “major rule”, as defined by 5 U.S.C. 804(2). The EPA and NHTSA will submit a rule report to each House of the Congress and to the Comptroller General of the United States.

E. Executive Order 13211 (Energy Effects)

Executive Order 13211 applies to any rule that: (1) Is determined to be economically significant as defined under E.O. 12866, and is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (2) that is designated by the Administrator of the Office of Information and Regulatory Affairs as a significant energy action. If the regulatory action meets either criterion, the agencies must evaluate the adverse energy effects of the proposed rule and explain why the proposed regulation is preferable to other potentially effective and reasonably feasible alternatives considered. NHTSA’s final rule is not subject to E.O. 13211 because it is not economically significant and is not a significant energy action. As discussed in the E.O. 12866 section, NHTSA’s final rule merely clarifies the contours of its existing preemption authority and

does not in any way change the existing fuel economy standards. As EPA’s withdrawal is not within the scope of E.O. 12866, it is also not within scope of E.O. 13211.

F. Environmental Considerations

1. National Environmental Policy Act

The National Environmental Policy Act (NEPA)²⁸⁸ directs that Federal agencies proposing “major Federal actions significantly affecting the quality of the human environment” must, “to the fullest extent possible,” prepare “a detailed statement” on the environmental impacts of the proposed action (including alternatives to the proposed action).²⁸⁹ Concurrently with the NPRM, NHTSA released a Draft Environmental Impact Statement (Draft EIS) pursuant to NEPA and implementing regulations issued by the Council on Environmental Quality (CEQ), 40 CFR part 1500, and NHTSA, 49 CFR part 520. NHTSA prepared the Draft EIS to analyze and disclose the potential environmental impacts of the proposed CAFE standards and a range of alternatives (largely varying in terms of stringency). NHTSA considered the information contained in the Draft EIS as part of developing its proposal and made the Draft EIS available for public comment. For the final rule on the standards for model year 2021 through 2026 automobiles proposed in the NPRM, NHTSA will simultaneously issue a Final EIS and Record of Decision, pursuant to 49 U.S.C. 304a(b) and U.S. Department of Transportation *Guidance on the Use of Combined Final Environmental Impact Statements/ Records of Decision and Errata Sheets in National Environmental Policy Act Reviews* (April 25, 2019),²⁹⁰ unless it is determined that statutory criteria or practicability considerations preclude simultaneous issuance.

NHTSA has not prepared a separate environmental analysis pursuant to NEPA for this final action on preemption. This final rule provides clarity on the scope of EPCA’s preemption provision. Ultimately, the determination of whether a particular State or local law is preempted under EPCA is not determined based upon its environmental impact but solely whether it is “related to fuel economy standards or average fuel economy standards.” Any preemptive effect

²⁸⁸ 42 U.S.C. 4321–4347.

²⁸⁹ 42 U.S.C. 4332. EPA is expressly exempted from the requirements of NEPA for actions under the Clean Air Act. 15 U.S.C. 793(c)(1).

²⁹⁰ <https://www.transportation.gov/sites/dot.gov/files/docs/mision/transportation-policy/permittingcenter/337371/feis-rod-guidance-final-04302019.pdf>.

²⁸⁷ Docket No. EPA–HQ–OAR–2012–0562, PP. 15–16.

resulting from this final action is not the result of the exercise of Agency discretion, but rather reflects the operation and application of the Federal statute. NHTSA does not have authority to waive any aspect of EPCA preemption no matter the potential environmental impacts; rather, preempted standards are void *ab initio*. Courts have long held that NEPA does not apply to nondiscretionary actions by Federal agencies.²⁹¹ As NHTSA lacks discretion over EPCA's preemptive effect, the Agency concludes that NEPA does not apply to this action.

It bears noting that this action only concerns the question of preemption; it does not set CAFE standards. Fundamentally, this action is about which sovereign entity (*i.e.*, the Federal government or State governments) can issue standards that relate to fuel economy. EPCA is clear that this authority is restricted to the Federal government. This action provides guidance on the boundary set by Congress, as well as under principles of implied preemption. NHTSA's regulation concerning EPCA preemption is independent and severable from any particular CAFE standards adopted by NHTSA, and this action, in and of itself, is not expected to have significant environmental impacts on a national scale. As described above, OEMs would likely produce more efficient vehicles for sale in California and the States that have adopted California's standards, but the increased fuel economy of these vehicles would likely be offset by less efficient vehicles produced for sale in the rest of the U.S., leading to little to no change in either fuel use or GHG emissions at a national level. In fact, as NHTSA has not finalized any action to amend the fuel economy standards that were promulgated in 2012, California's "deemed to comply" provision remains operative. As OEMs are anticipated to make use of this compliance mechanism, CARB's GHG standards are functionally identical to Federal standards, and their preemption would not result in additional environmental impacts. Furthermore, as was discussed in the NPRM, California, in its 2013 waiver request, noted that the ZEV program did not provide for ozone-forming pollutants, acknowledging, "[t]here is no criteria emissions benefit from including the ZEV proposal in terms of vehicle (tank-to-wheel or TTW)

²⁹¹ See, e.g., *Department of Transp. v. Public Citizen*, 541 U.S. 752 (2004); *Milo Cmty. Hosp. v. Weinberger*, 525 F.2d 144 (1st Cir. 1975); *State of South Dakota v. Andrus*, 614 F.2d 1190 (8th Cir. 1980); *Citizens Against Rails-to-Trails v. Surface Transp. Bd.*, 267 F.3d 1144 (D.C. Cir. 2001); *Sierra Club v. Babbitt*, 65 F.3d 1502 (9th Cir. 1995).

emissions. The LEV III criteria pollutant fleet standard is responsible for those emission reductions in the fleet; the fleet would become cleaner regardless of the ZEV regulation because manufacturers would adjust their compliance response to the standard by making less polluting conventional vehicles."²⁹² Ultimately NHTSA will address potential environmental impacts of fuel economy standards in its forthcoming Final EIS that will accompany the final rule on the standards for model year 2021 through 2026 automobiles proposed in the NPRM. This action, however, does not result in significant environmental impacts to the quality of the human environment.

NHTSA intends to fully respond to all substantive comments received on the Draft EIS in the forthcoming Final EIS, consistent with CEQ regulations. NHTSA received numerous public comments on the Draft EIS that related to the revocation of California's waiver and EPCA preemption. The following summarizes and briefly addresses those comments.

Multiple commenters called NHTSA's DEIS inadequate because it did not analyze an alternative that would keep the California waiver and regulations (as well as similar regulations adopted in the District of Columbia and other States pursuant to section 177 of the CAA) in place.²⁹³ On the other hand, one commenter noted its support for the proposition that NHTSA is not obligated under NEPA to consider a scenario that it believes Federal law does not permit.²⁹⁴ As described above, NHTSA concludes that NEPA does not apply to this final rule regarding preemption. Based on this conclusion, it is immaterial whether NHTSA analyzed an alternative that would keep the California waiver and regulations in place. NHTSA lacks the discretion and authority to select such an alternative as a State or local law or regulation related to automobile fuel economy standards is

²⁹² Docket No. EPA-HQ-OAR-2012-0562, Pp. 15-16. California's LEV III criteria pollution standard would not be preempted under this action.

²⁹³ Center for Biological Diversity, Earthjustice, Environmental Law and Policy Center, Natural Resources Defense Council, Public Citizen, Inc., Safe Climate Campaign, Sierra Club, Southern Environmental Law Center, and Union of Concerned Scientists, Docket No. NHTSA-2017-0069-0550; South Coast Air Quality Management District, Docket Nos. NHTSA-2017-0069-0532 and NHTSA-2017-0069-0497; Blanca Luevanos, Docket No. NHTSA-2017-0069-0508; National Coalition for Advanced Transportation, Docket No. NHTSA-2017-0069-0597; California Office of the Attorney General et al., Docket No. NHTSA-2017-0069-0625.

²⁹⁴ Alliance of Automobile Manufacturers, Docket No. NHTSA-2017-0069-0588.

void *ab initio* under the preemptive force of EPCA.

One commenter criticized NHTSA for failing to consider the criteria pollutant impacts of alternatives that keep the waiver in place and that account for California's specific electricity grid.²⁹⁵ That commenter also criticized NHTSA for not fully accounting for the impacts to NO_x emissions in the South Coast Air Basin as a result of revoking the waiver.²⁹⁶ Another commenter noted that the nine areas NHTSA identified as suffering from "serious" or "extreme" nonattainment conditions for ozone and PM_{2.5} are located in California, even though the agencies proposed to revoke or declare preempted the State's Clean Air Act waiver for GHG emissions and the State's ZEV mandate.²⁹⁷ One commenter wrote that NHTSA should consider and discuss the local impacts that preempting the ZEV mandate would have on localities where ZEV sales are currently concentrated and where they will likely concentrate in the future, and particularly in California and the other States that have adopted the ZEV mandate pursuant to section 177 of the CAA.²⁹⁸ While these comments are more specific about identifying potential environmental impacts, these impacts simply do not bear on the question of whether or how preemption applies. Preemption relies solely on whether the State or local law or regulation is "related to fuel economy standards or average fuel economy standards." Therefore, NHTSA is not obligated to analyze or consider these environmental impacts as part of this final rule.

One commenter noted that if California's waiver is revoked, the State would be unable to address pollution issues through adoption of California's or its own standards, making it difficult to attain or maintain compliance with the Clean Air Act.²⁹⁹ Another State alleged that it depends on the criteria pollutant and air toxic emission reduction co-benefits of the State's use of section 177 motor vehicle emissions standards as a control strategy in its State Implementation Plan to meet its

²⁹⁵ South Coast Air Quality Management District, Docket No. NHTSA-2017-0069-0497.

²⁹⁶ South Coast Air Quality Management District, Docket No. NHTSA-2017-0069-0497.

²⁹⁷ Center for Biological Diversity, Earthjustice, Environmental Law and Policy Center, Natural Resources Defense Council, Public Citizen, Inc., Safe Climate Campaign, Sierra Club, Southern Environmental Law Center, and Union of Concerned Scientists, Docket No. NHTSA-2017-0069-0550.

²⁹⁸ New York State Department of Environmental Conservation, NHTSA-2017-0069-0608.

²⁹⁹ Boulder County Public Health, Docket No. NHTSA-2017-0069-0499.

SIP.³⁰⁰ NHTSA disagrees with the underlying premise of the comments. States and local governments are able to continue to encourage ZEVs in many different ways, such as through investments in infrastructure and appropriately tailored incentives. States and local governments cannot adopt or enforce regulations related to fuel economy standards, which include ZEV mandates, but they are able to address pollutants regulated by the Clean Air Act in numerous ways that are not preempted by Federal law. Moreover, as noted above, this action does not impact in any way the Federal standards in place for greenhouse gas emissions from automobiles and fuel economy standards. Since California and other section 177 States have “deemed” compliance with the Federal standards to be compliance with the State standards, this action does not have significant environmental impacts to the quality of the human environment. Any impacts associated with potential changes to Federal standards are not a result of this action and are purely speculative until the agencies finalize a change.

2. Clean Air Act Conformity Requirements as Applied to NHTSA’s Action

The Clean Air Act (42 U.S.C. 7401 *et seq.*) is the primary Federal legislation that addresses air quality. Under the authority of the Clean Air Act and subsequent amendments, EPA has established NAAQS for six criteria pollutants, which are relatively commonplace pollutants that can accumulate in the atmosphere as a result of human activity. The air quality of a geographic region is usually assessed by comparing the levels of criteria air pollutants found in the ambient air to the levels established by the NAAQS (taking into account, as well, the other elements of a NAAQS: Averaging time, form, and indicator). These ambient concentrations of each criteria pollutant are compared to the levels, averaging time, and form specified by the NAAQS in order to assess whether the region’s air quality is in attainment with the NAAQS. When the measured concentrations of a criteria pollutant within a geographic area are below those permitted by the NAAQS, EPA designates the region as an attainment area for that pollutant, while areas where concentrations of criteria pollutants exceed Federal standards (or nearby areas that contribute to such concentrations) are

designated as nonattainment areas. Former nonattainment areas that come into compliance with the NAAQS and are redesignated as attainment areas are known as maintenance areas. When EPA revises a NAAQS, each State is required to develop and implement a State Implementation Plan (SIP) to address how it plans to attain and maintain the new standard. Each State with a nonattainment area is also required to submit a SIP documenting how the region will reach attainment levels within time periods specified in the Clean Air Act. For maintenance areas, the SIP must document how the State intends to maintain compliance with the NAAQS.

No Federal agency may “engage in, support in any way or provide financial assistance for, license or permit, or approve” any activity in a nonattainment or maintenance area that does not “conform” to a SIP or Federal Implementation Plan after EPA has approved or promulgated it.³⁰¹ Further, no Federal agency may “approve, accept or fund” any transportation plan, program, or project developed pursuant to title 23 or chapter 53 of title 49, U.S.C., in a nonattainment or maintenance area unless the plan, program, or project has been found to “conform” to any applicable implementation plan in effect.³⁰² The purpose of these conformity requirements is to ensure that Federally sponsored or conducted activities do not interfere with meeting the emissions targets in SIPs, do not cause or contribute to new violations of the NAAQS, and do not impede the ability of a State to attain or maintain the NAAQS or delay any interim milestones. EPA has issued two sets of regulations to implement the conformity requirements:

(1) The Transportation Conformity Rule³⁰³ applies to transportation plans, programs, and projects that are developed, funded, or approved under title 23 or chapter 53 of title 49, U.S.C.

(2) The General Conformity Rule³⁰⁴ applies to all other federal actions not covered under transportation conformity. The General Conformity Rule establishes emissions thresholds, or de minimis levels, for use in evaluating the conformity of an action that results in emissions increases.³⁰⁵ If the net increases of direct and indirect emissions are lower

than these thresholds, then the project is presumed to conform and no further conformity evaluation is required. If the net increases of direct and indirect emissions exceed any of these thresholds, and the action is not otherwise exempt,³⁰⁶ then a conformity determination is required. The conformity determination can entail air quality modeling studies, consultation with EPA and state air quality agencies, and commitments to revise the SIP or to implement measures to mitigate air quality impacts.

This action is not developed, funded, or approved under title 23 or chapter 53 of title 49, U.S.C. Accordingly, this action is not subject to transportation conformity. Under the General Conformity Rule, a conformity determination is required when a Federal action would result in total direct and indirect emissions of a criteria pollutant or precursor originating in nonattainment or maintenance areas equaling or exceeding the rates specified in 40 CFR 93.153(b)(1) and (2), and the action is not otherwise exempt. As explained below, NHTSA’s action results in neither direct nor indirect emissions as defined in 40 CFR 93.152.

The General Conformity Rule defines direct emissions as “those emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and originate in a nonattainment or maintenance area and occur at the same time and place as the action and are reasonably foreseeable.”³⁰⁷ NHTSA’s action is to promulgate regulatory text and a detailed appendix, in addition to discussing the issue in this preamble to the rule, specifically to provide clarity on EPCA’s preemption provision in order to give already established standards meaning, and thus is specifically exempt from general conformity requirements.³⁰⁸ Moreover, this action would cause no direct emissions consistent with the meaning of the General Conformity Rule.³⁰⁹ Any changes in emissions that could occur as a result of preemption would happen well after and in a different place from the promulgation of this rule. Furthermore, any such changes in emissions—especially those occurring in specific nonattainment or maintenance areas—are not reasonably foreseeable. Any such changes are

³⁰⁶ 40 CFR 93.153(c).

³⁰⁷ 40 CFR 93.152.

³⁰⁸ 40 CFR 93.153(c)(2)(iii).

³⁰⁹ *Department of Transp. v. Public Citizen*, 541 U.S. 752, 772 (2004) (“[T]he emissions from the Mexican trucks are not ‘direct’ because they will not occur at the same time or at the same place as the promulgation of the regulations.”).

³⁰¹ 42 U.S.C. 7506(c)(1) and (5).

³⁰² 42 U.S.C. 7506(c)(2) and (5).

³⁰³ 40 CFR part 51, subpart T, and part 93, subpart A.

³⁰⁴ 40 CFR part 93, subpart B.

³⁰⁵ 40 CFR 93.153(b).

³⁰⁰ Oregon Department of Environmental Quality, Docket No. NHTSA–2017–0069–0526.

unlikely because this action does not impact in any way the Federal standards in place for criteria pollutant emissions from automobiles. Further, this action does not impact the Federal standards in place for greenhouse gas emissions from automobiles or fuel economy standards. Since California and other section 177 States have “deemed” compliance with the Federal standards to be compliance with the State standards, it is not clear that this action (as it pertains to the State’s greenhouse gas emissions standards) would result in changes to the anticipated fleet of vehicles in those States and therefore to criteria pollutant emissions. Any impacts associated with potential changes to Federal standards are not a result of this action and are purely speculative until the agencies finalize a change. Additionally, we note California’s statement in its 2013 waiver request that “[t]here is no criteria emissions benefit from including the ZEV proposal in terms of vehicle (tank-to-wheel or TTW) emissions. The LEV III criteria pollutant fleet standard is responsible for those emission reductions in the fleet”³¹⁰ As discussed previously, this action clarifies that criteria pollutant standards are not preempted unless they have a direct or substantial relationship to fuel economy standards. California’s LEV III criteria pollution standard would not be preempted under this approach.

Indirect emissions under the General Conformity Rule are “those emissions of a criteria pollutant or its precursors: (1) That are caused or initiated by the Federal action and originate in the same nonattainment or maintenance area but occur at a different time or place as the action; (2) That are reasonably foreseeable; (3) That the agency can practically control; and (4) For which the agency has continuing program responsibility.”³¹¹ Each element of the definition must be met to qualify as indirect emissions. NHTSA finds that neither of the first two criteria are satisfied for the same reasons as presented regarding direct emissions.

Furthermore, NHTSA cannot practically control, nor does it have continuing program responsibility for, any emissions that could occur as a result of preemption. “[E]ven if a Federal licensing, rulemaking, or other approving action is a required initial step for a subsequent activity that causes emissions, such initial steps do not mean that a Federal agency can practically control any resulting

emissions.”³¹² With regard to preemption, NHTSA lacks the discretion and authority to keep the California waiver and regulations in place, as a State or local law or regulation related to automobile fuel economy standards is void *ab initio* under the preemptive force of EPCA. NHTSA cannot be considered to practically control or have continuing program responsibility for emissions that could result from preemption when that result is required by Federal statute.³¹³ NHTSA also does not have continuing program responsibility for emissions that occur in California and other section 177 States, are regulated by the Clean Air Act, and for which the States and local governments can continue to address in numerous ways that do not conflict with Federal law.

For the foregoing reasons, this action does not cause direct or indirect emissions under the General Conformity Rule, and a general conformity determination is not required. NHTSA will address any responsibilities under the General Conformity Rule as it pertains to potential changes to the fuel economy standards in the forthcoming final rule for that action.

3. Endangered Species Act

Under Section 7(a)(2) of the Endangered Species Act (ESA), Federal agencies must ensure that actions they authorize, fund, or carry out are “not likely to jeopardize the continued existence” of any Federally listed threatened or endangered species or result in the destruction or adverse modification of the designated critical habitat of these species. 16 U.S.C. 1536(a)(2). If a Federal agency determines that an agency action may affect a listed species or designated critical habitat, it must initiate consultation with the appropriate Service—the U.S. Fish and Wildlife Service (FWS) of the Department of the Interior (DOI) and/or the National Oceanic and Atmospheric Administration’s National Marine Fisheries Service of the Department of Commerce (together, “the Services”), depending on the species involved—in order to ensure that the action is not likely to jeopardize the species or destroy or adversely modify designated critical habitat. See 50 CFR 402.14. Under this standard, the Federal agency taking action evaluates the possible effects of its action and determines whether to initiate consultation. See 51 FR 19926, 19949 (June 3, 1986).

Pursuant to Section 7(a)(2) of the ESA, the agencies have reviewed this action and have considered applicable ESA regulations, case law, and guidance to determine what, if any, obligations the agencies have under the ESA. The agencies have considered issues related to emissions of CO₂ and other GHGs and issues related to non-GHG emissions. Based on this assessment, the agencies have determined that their actions (withdrawal of California’s waiver and the final rule regarding preemption) do not require consultation under Section 7(a)(2) of the ESA.

a. The Agencies Lack Discretionary Authority

NHTSA’s final rule adopts regulatory text (including a detailed appendix) regarding EPCA’s preemption provision, in addition to discussing the issue in this preamble to the rule, specifically to provide needed clarity on that provision. The new regulatory text provides for why any law or regulation of a State or a political subdivision of a State regulating or prohibiting tailpipe carbon dioxide emissions from automobiles is expressly and impliedly preempted by EPCA. Any preemptive effect resulting from this final action is not the result of the exercise of Agency discretion, but rather reflects the operation and application of the Federal statute. NHTSA does not have authority to waive any aspect of EPCA preemption no matter the potential impacts; rather, preempted standards are void *ab initio*.

EPA’s action is to withdraw the waiver it had previously provided in January 2013 to California for that State’s GHG and ZEV programs under section 209 of the Clean Air Act. This action is being undertaken on two separate and independent grounds. First, EPA has determined EPCA preemption renders its prior grant of a waiver for those aspects of California’s regulations that EPCA preempts invalid, null, and void, thereby necessitating withdrawal of the waiver. Second, EPA concludes that CAA section 209(b)(1)(B), which provides that EPA shall not issue a waiver if California does not “need” separate state standards “to meet compelling and extraordinary conditions,” was not intended to allow California to promulgate State standards for emissions from new motor vehicles designed to address global climate change problems. Therefore, California does not meet the necessary criteria to receive a waiver for these aspects of its program. Similar to NHTSA, these decisions are not discretionary, but rather reflect EPA’s conclusion that EPCA preemption and the requirements

³¹⁰ Docket No. EPA–HQ–OAR–2012–0562, pp. 15–16.

³¹¹ 40 CFR 93.152.

³¹² 40 CFR 93.152.

³¹³ See *Public Citizen*, 541 U.S. at 772–3.

of the Clean Air Act prohibit the granting of a waiver to California.

The Supreme Court has held that Section 7(a)(2) of the ESA and its implementing regulations apply only to actions in which there is discretionary Federal authority.³¹⁴ In *National Association of Home Builders*, EPA considered the requirement of Section 402(b) of the Clean Water Act that EPA transfer certain permitting powers to State authorities upon an application and a showing that nine specified criteria had been met. The Court concluded that the ESA did not operate as a “tenth criterion.”³¹⁵ According to the Court: “While the EPA may exercise some judgment in determining whether a State has demonstrated that it has the authority to carry out [the] enumerated statutory criteria, the statute clearly does not grant it the discretion to add another entirely separate prerequisite to that list. Nothing in the text of [the statute] authorizes the EPA to consider the protection of threatened or endangered species as an end in itself when evaluating a transfer application.”³¹⁶

The agencies believe this holding applies to the instant action as well. As this action results from nondiscretionary authorities, the Section 7(a)(2) implementing regulations expressly exclude them from coverage. Neither ECPA nor the Clean Air Act include the protection of threatened or endangered species as a consideration for the application of preemption (which operates by statute) or the prohibition on the granting of a waiver (under the enumerated statutory criterion in CAA section 209(b)(1)(B)). Although there is some judgment in considering the application of EPCA and the CAA, neither action involves the type of discretion that would require a Section 7(a)(2) consultation by the agencies with the Services.

b. Any Effects Resulting From the Agencies’ Actions Are too Attenuated for Consultation To Be Required

In addition, the agencies have considered the potential effects of this action to listed threatened or endangered species or designated critical habitat of these species and concludes that any such effects are too

attenuated to require Section 7(a)(2) consultation. The agencies base this conclusion both on the language of the Section 7(a)(2) implementing regulations and on the long history of actions and guidance provided by DOI.

The Section 7(a)(2) implementing regulations require consultation if a Federal agency determines its action “may affect” listed species or critical habitat.³¹⁷ The Services’ current regulations define “effects of the action” in relevant part as “the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline.”³¹⁸ Further, they define indirect effects as “those that are caused by the proposed action and are later in time, but still are reasonably certain to occur.”³¹⁹

The Services’ recently published final rule revising the definition of “effects of the action” to be “all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur.”³²⁰ In the preamble to the final rule, the Services emphasized that the “but for” test and “reasonably certain to occur” are not new or heightened standards.³²¹ In this context, “‘but for’ causation means that the consequence in question would not occur if the proposed action did not go forward In other words, if the agency fails to take the proposed action and the activity would still occur, there is no ‘but for’ causation. In that event, the activity would not be considered an effect of the action under consultation.”³²² As the Services do not consider these to be changes in their

longstanding application of the ESA, these interpretations apply equally under the existing regulations (which are effective through September 25, 2019) and the new regulations (which are effective beginning September 26, 2019).

Any potential effects of this action to threatened or endangered species or designated critical habitat would be a result of changes to GHG or criteria air pollutant emissions. In the next section, the agencies discuss why this action is not anticipated to result in changes to GHG or criteria air pollutant emissions. However, even if such changes to emissions were to occur, the agencies do not believe resulting impacts to listed species or critical habitat satisfy the “but for” test or are “reasonably certain to occur.”

GHG emissions are relevant to Section 7(a)(2) consultation because of the potential impacts of climate change on listed species or critical habitat. For example, one comment to the NPRM documented the potential impacts of climate change on federally protected species and included a five-page table of species listed during 2006 to 2015 for which the commenters claim climate change was a listing factor.³²³ However, the agencies believe this comment inappropriately attributes the entire issue of climate change, including all GHG emissions no matter which sector generated them, to NHTSA and EPA’s actions.³²⁴ In fact, the commenter demonstrates the very issue with doing so: There is no “but for” causation associated with EPA’s revocation of California’s waiver and NHTSA’s final rule on preemption, as the impacts of climate change will occur regardless of this action. Furthermore, even if this action results in changes to GHG emissions, such changes would be extremely small compared to global GHG emissions. There is no scientific evidence that sufficiently “connects the dots” between those changes in emissions and any particular impact to a listed species or critical habitat; thus, any impacts are not “reasonably certain to occur.” States (such as California) and local governments may also continue to encourage ZEVs in numerous ways that do not conflict with

³¹⁷ 50 CFR 402.14(a). The Departments of the Interior and Commerce recently issued a final rule revising the regulations governing the ESA Section 7 consultation process. 84 FR 44966 (Aug. 27, 2019). The new regulations take effect on September 26, 2019. As discussed in the text above, the agencies do not believe that the change in regulations has any effect on the agencies’ analysis here.

³¹⁸ 50 CFR 402.02.

³¹⁹ *Id.*

³²⁰ 50 CFR 402.02, as amended by 84 FR 44976, 45016 (Aug. 27, 2019) (effective Sept. 26, 2019).

³²¹ 84 FR at 44977 (“As discussed in the proposed rule, the Services have applied the ‘but for’ test to determine causation for decades. That is, we have looked at the consequences of an action and used the causation standard of ‘but for’ plus an element of foreseeability (*i.e.*, reasonably certain to occur) to determine whether the consequence was caused by the action under consultation.”).

³²² *Id.*

³²³ Center for Biological Diversity, Sierra Club, and Public Citizen, Inc., Docket No. NHTSA–2018–0067–12378.

³²⁴ *See, e.g.*, 78 FR 11766, 11785 (Feb. 20, 2013) (“Without the requirement of a causal connection between the action under consultation and effects to species, literally every agency action that contributes GHG emissions to the atmosphere would arguably result in consultation with respect to every listed species that may be affected by climate change.”).

³¹⁴ *National Ass’n of Home Builders v. Defenders of Wildlife*, 551 U.S. 644, 673 (2007) (“Applying *Chevron*, we defer to the Agency’s reasonable interpretation of ESA [section] 7(a)(2) as applying only to ‘actions in which there is discretionary Federal involvement or control.’” (quoting 50 CFR 402.03)).

³¹⁵ *National Ass’n of Home Builders*, 551 U.S. at 649.

³¹⁶ *Id.* at 671.

Federal law, which may also prevent any alleged impact from these actions.

Similarly, with regard to criteria air pollutants, States are still subject to the Clean Air Act, which requires limitations on emissions of those pollutants. Furthermore, since California and other Section 177 States have “deemed” compliance with the Federal standards to be compliance with the State standards, it is not clear that this action would result in changes to emissions. Any impacts associated with potential changes to Federal standards are not a result of this action and are purely speculative until the agencies finalize a change. We again note California’s statement in its 2013 waiver request that “[t]here is no criteria emissions benefit from including the ZEV proposal in terms of vehicle (tank-to-wheel or TTW) emissions. The LEV III criteria pollutant fleet standard is responsible for those emission reductions in the fleet”³²⁵ As discussed previously, this action clarifies that criteria pollutant standards are not preempted unless they have a direct or substantial relationship to fuel economy standards. California’s LEV III criteria pollution standard would not be preempted under this approach, and that program’s benefits are anticipated to remain in place.

The agencies have also considered the long history of actions and guidance provided by DOI. To that point, the agencies incorporate by reference Appendix G of the MY 2012–2016 CAFE standards EIS.³²⁶ That analysis relied on the significant legal and technical analysis undertaken by FWS and DOI. Specifically, NHTSA looked at the history of the Polar Bear Special Rule and several guidance memoranda provided by FWS and the U.S. Geological Survey. Ultimately, FWS concluded that a causal link could not be made between GHG emissions associated with a proposed Federal action and specific effects on listed species; therefore, no Section 7(a)(2) consultation would be required.

Subsequent to the publication of that Appendix, a court vacated the Polar Bear Special Rule on NEPA grounds, though it upheld the ESA analysis as having a rational basis.³²⁷ FWS subsequently issued a revised Final

Special Rule for the Polar Bear.³²⁸ In that final rule, FWS provided that for ESA section 7, the determination of whether consultation is triggered is narrow and focused on the discrete effect of the proposed agency action. FWS wrote, “[T]he consultation requirement is triggered only if there is a causal connection between the proposed action and a discernible effect to the species or critical habitat that is reasonably certain to occur. One must be able to ‘connect the dots’ between an effect of a proposed action and an impact to the species and there must be a reasonable certainty that the effect will occur.”³²⁹ The statement in the revised Final Special Rule is consistent with the prior guidance published by FWS and remains valid today.³³⁰ Ultimately, EPA and NHTSA are not able to make a causal link for purposes of Section 7(a)(2) that would “connect the dots” between this action, vehicle emissions from motor vehicles affected by this action, climate change, and particular impacts to listed species or critical habitats. Therefore, no Section 7(a)(2) consultation is required.

c. The Agencies’ Actions Would Have No Effect on Listed Species and Designated Critical Habitat

In addition to the foregoing a Section 7(a)(2) consultation is not required because this action will have no effect on a listed species or designated critical habitat. This notification and final rule only address the issues of California’s waiver and preemption; they do not set CAFE standards. Fundamentally, this action is about which sovereign entity (*i.e.*, the Federal government or State governments) can issue standards that relate to fuel economy. EPCA is clear that this authority is restricted to the Federal government. This action provides clarity on the boundary set by Congress, as well as under principles of implied preemption.

As previously described, absent this action, OEMs would likely produce more efficient vehicles for sale in California and the States that have adopted California’s standards, but the increased fuel economy of these vehicles would likely be offset by less efficient vehicles produced for sale in the rest of the U.S., leading to little to no change in either fuel use or GHG emissions at a national level. Further, as EPA and NHTSA have not finalized any

action to amend the Federal GHG and fuel economy standards that were promulgated in 2012, California’s “deemed to comply” provision remains operative. As OEMs are anticipated to make use of this compliance mechanism, CARB’s GHG standards are functionally identical to Federal standards, and their preemption would not result in additional environmental impacts. Any impacts associated with potential changes to Federal standards are not a result of this action and are purely speculative until the agencies finalize a change.

Finally, we again note California’s 2013 waiver request statement that there is no criteria emissions benefit associated with the ZEV program because the LEV III criteria pollution standard is responsible for those emissions reductions. This action clarifies that criteria pollutant standards are not preempted unless they have a direct or substantial relationship to fuel economy standards. California’s LEV III criteria pollution standard would not be preempted under this approach. Therefore, those benefits are anticipated to remain in place.

For the foregoing reasons, automobile emissions are not anticipated to change as a result of this action. Even if they do, any change would be so minimal as to be unlikely to pose any effects on a listed species or critical habitat. Because any effect on a listed species or critical habitat is not reasonably certain to occur, the agencies conclude that there will be no effect on listed species or critical habitat under the Section 7(a)(2) implementing regulations, and no Section 7(a)(2) consultation is required for this action.

4. National Historic Preservation Act (NHPA)

The NHPA (54 U.S.C. 300101 *et seq.*) sets forth government policy and procedures regarding “historic properties”—that is, districts, sites, buildings, structures, and objects included on or eligible for the National Register of Historic Places. Section 106 of the NHPA requires federal agencies to “take into account” the effects of their actions on historic properties.³³¹ The agencies conclude that the NHPA is not applicable to this action because a rule regarding the preemption of State laws and a decision to revoke California’s waiver are not the type of activities that have the potential to cause effects on historic properties. This conclusion is supported by the lack of discretion over

³²⁵ Docket No. EPA–HQ–OAR–2012–0562, pp. 15–16.

³²⁶ Available on NHTSA’s Corporate Average Fuel Economy website <https://one.nhtsa.gov/Laws-&Regulations/CAFE-%E2%80%93-Fuel-Economy/Final-EIS-for-CAFE-Passenger-Cars-and-Light-Trucks,-Model-Years-2012%E2%80%932016>.

³²⁷ *In re: Polar Bear Endangered Species Act Listing and Section 4(D) Rule Litigation*, 818 F. Supp. 2d 214 (D.D.C. Oct. 17, 2011).

³²⁸ 78 FR 11766 (Feb. 20, 2013).

³²⁹ 78 FR at 11784–11785.

³³⁰ See DOI Solicitor’s Opinion No. M–37017, “Guidance on the Applicability of the Endangered Species Act Consultation Requirements to Proposed Actions Involving the Emissions of Greenhouse Gases” (Oct. 3, 2008).

³³¹ Section 106 is now codified at 54 U.S.C. 306108. Implementing regulations for the Section 106 process are located at 36 CFR part 800.

preemption and the underlying justification for the withdrawal of the waiver to California, the fact that any causal relationship between effects on historic properties as a result of emissions from the sale and operation of motor vehicles in California and section 177 States and this action are too attenuated, and the conclusion that impacts are not reasonably foreseeable.³³²

5. Fish and Wildlife Conservation Act (FWCA)

The FWCA (16 U.S.C. 2901 *et seq.*) provides financial and technical assistance to States for the development, revision, and implementation of conservation plans and programs for nongame fish and wildlife. In addition, the Act encourages all Federal departments and agencies to utilize their statutory and administrative authorities to conserve and to promote conservation of nongame fish and wildlife and their habitats. The agencies conclude that the FWCA is not applicable to this action because it does not involve the conservation of nongame fish and wildlife and their habitats.

6. Coastal Zone Management Act (CZMA)

The Coastal Zone Management Act (16 U.S.C. 1451 *et seq.*) provides for the preservation, protection, development, and (where possible) restoration and enhancement of the nation's coastal zone resources. Under the statute, States are provided with funds and technical assistance in developing coastal zone management programs. Each participating State must submit its program to the Secretary of Commerce for approval. Once the program has been approved, any activity of a Federal agency, either within or outside of the coastal zone, that affects any land or water use or natural resource of the coastal zone must be carried out in a manner that is consistent, to the maximum extent practicable, with the enforceable policies of the State's program.³³³

The agencies conclude that the CZMA is not applicable to this action because it does not involve an activity within, or outside of, the nation's coastal zones that affects any land or water use or natural resource of the coastal zone. This conclusion is supported by the lack of discretion over preemption and the underlying justification for the withdrawal of the waiver to California,

the fact that any causal relationship between effects on coastal zones as a result of emissions from the sale and operation of motor vehicles in California and section 177 States and this action are too attenuated, and the conclusion that impacts are not reasonably foreseeable.³³⁴

7. Floodplain Management (Executive Order 11988 and DOT Order 5650.2)

These Orders require Federal agencies to avoid the long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and to restore and preserve the natural and beneficial values served by floodplains. Executive Order 11988 also directs agencies to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains through evaluating the potential effects of any actions the agency may take in a floodplain and ensuring that its program planning and budget requests reflect consideration of flood hazards and floodplain management. DOT Order 5650.2 sets forth DOT policies and procedures for implementing Executive Order 11988. The DOT Order requires that the agency determine if a proposed action is within the limits of a base floodplain, meaning it is encroaching on the floodplain, and whether this encroachment is significant. If significant, the agency is required to conduct further analysis of the proposed action and any practicable alternatives. If a practicable alternative avoids floodplain encroachment, then the agency is required to implement it.

In this action, the agencies are not occupying, modifying and/or encroaching on floodplains. The agencies, therefore, conclude that the Orders are not applicable to this action.

8. Preservation of the Nation's Wetlands (Executive Order 11990 and DOT Order 5660.1a)

These Orders require Federal agencies to avoid, to the extent possible, undertaking or providing assistance for new construction located in wetlands unless the agency head finds that there is no practicable alternative to such construction and that the proposed action includes all practicable measures to minimize harms to wetlands that may result from such use. Executive Order 11990 also directs agencies to take action to minimize the destruction, loss or degradation of wetlands in "conducting Federal activities and

programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities." DOT Order 5660.1a sets forth DOT policy for interpreting Executive Order 11990 and requires that transportation projects "located in or having an impact on wetlands" should be conducted to assure protection of the Nation's wetlands. If a project does have a significant impact on wetlands, an EIS must be prepared.

In this action, the agencies are not undertaking or providing assistance for new construction located in wetlands and conclude that these Orders do not apply to this action.

9. Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act (BGEPA), Executive Order 13186

The MBTA (16 U.S.C. 703-712) provides for the protection of certain migratory birds by making it illegal for anyone to "pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export" any migratory bird covered under the statute.³³⁵

The BGEPA (16 U.S.C. 668-668d) makes it illegal to "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import" any bald or golden eagles.³³⁶ Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds," helps to further the purposes of the MBTA by requiring a Federal agency to develop a Memorandum of Understanding (MOU) with the Fish and Wildlife Service when it is taking an action that has (or is likely to have) a measurable negative impact on migratory bird populations.

The agencies conclude that the MBTA, BGEPA, and Executive Order 13186 do not apply to this action because there is no disturbance, take, measurable negative impact, or other covered activity involving migratory birds or bald or golden eagles involved in this rulemaking. This conclusion is supported by the lack of discretion over preemption and the reasons underlying justification for the withdrawal of the waiver to California, the fact that any causal relationship between effects on migratory birds or bald or golden eagles as a result of emissions from the sale

³³² See the discussions regarding NEPA, Clean Air Act Conformity, and the ESA.

³³³ 16 U.S.C. 1456(c)(1)(A).

³³⁴ See the discussions regarding NEPA, Clean Air Act Conformity, and the ESA.

³³⁵ 16 U.S.C. 703(a).

³³⁶ 16 U.S.C. 668(a).

and operation of motor vehicles in California and section 177 States and this action are too attenuated, and the conclusion that impacts are not reasonably foreseeable.³³⁷

10. Department of Transportation Act (Section 4(f))

Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 303), as amended, is designed to preserve publicly owned park and recreation lands, waterfowl and wildlife refuges, and historic sites. Specifically, Section 4(f) provides that DOT agencies cannot approve a transportation program or project that requires the use of any publicly owned land from a public park, recreation area, or wildlife or waterfowl refuge of national, State, or local significance, or any land from a historic site of national, State, or local significance, unless a determination is made that:

(1) There is no feasible and prudent alternative to the use of land, and

(2) The program or project includes all possible planning to minimize harm to the property resulting from the use.

These requirements may be satisfied if the transportation use of a Section 4(f) property results in a de minimis impact on the area.

NHTSA concludes that Section 4(f) is not applicable to its final rule here because this rulemaking is not an approval of a transportation program or project that requires the use of any publicly owned land.

11. Executive Order 12898: "Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations"

Executive Order (E.O.) 12898 (59 FR 7629 (Feb. 16, 1994)) establishes Federal executive policy on environmental justice. Its main provision directs Federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

The agencies have determined that this action will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it does not change existing Federal standards. This conclusion is supported by the lack of discretion over

preemption and the underlying justification for the withdrawal of the waiver to California, the fact that any causal relationship between effects on minority or low-income populations as a result of emissions from the sale and operation of motor vehicles in California and section 177 States and this action are too attenuated, and the conclusion that impacts are not reasonably foreseeable.³³⁸

12. Executive Order 13045: "Protection of Children From Environmental Health Risks and Safety Risks"

This action is not subject to E.O. 13045 (62 FR 19885, April 23, 1997) because it is not an economically significant regulatory action as defined by E.O. 12866, and the agencies have no reason to believe that the environmental health or safety risks related to this action may have a disproportionate effect on children because it does not change existing Federal standards. This conclusion is supported by the lack of discretion over preemption and the underlying justification for the withdrawal of the waiver to California, the fact that any causal relationship between effects on children as a result of emissions from the sale and operation of motor vehicles in California and section 177 States and this action are too attenuated, and the conclusion that impacts are not reasonably foreseeable.³³⁹

G. Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency is required to publish a notice of proposed rulemaking or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (*i.e.*, small businesses, small organizations, and small governmental jurisdictions). No regulatory flexibility analysis is required if the head of an agency certifies the proposal will not have a significant economic impact on a substantial number of small entities. SBREFA amended the Regulatory Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a proposal will not have a significant economic impact on a substantial number of small entities.

³³⁸ See the discussions regarding NEPA, the Clean Air Act Conformity, and the ESA.

³³⁹ See the discussions regarding NEPA, the Clean Air Act Conformity, and the ESA.

This joint action only concern the question of preemption; the joint action does not set CAFE or emissions standards themselves. Further, as the California waiver withdrawal is not a rulemaking, it is not subject to the RFA. Accordingly, only NHTSA's final rule establishing regulatory text related to preemption is at issue in this action. NHTSA has considered the impacts of this document under the Regulatory Flexibility Act and certifies that this rule would not have a significant economic impact on a substantial number of small entities. One commenter, Workhorse Group, Inc. (Workforce), in comments echoed by a trade association, argued that it was a small business and would be affected the preemption provisions because it would no longer be able to earn and sell credits under the ZEV mandates established by California and the other 177 States. This argument is not persuasive, as the preemption regulation has no direct effect on Workforce or any other similar entity because it does not regulate any private entity, but instead clarifies the agency's views on what State or local laws are preempted. Thus, any effect on Workhorse or any other similar entities is, at most, indirect. Any effect is even further attenuated by the fact that small entities such as Workhorse are not even subject to a ZEV mandate, but choose to participate in the program voluntarily.

Additionally, in keeping with previous waiver actions, EPA's action is not a rule as defined in the Regulatory Flexibility Act, 5 U.S.C. 601(2). Therefore, EPA has not prepared a supporting regulatory flexibility analysis addressing the impact of this action on small business entities. See 78 FR at 2145 (Jan. 9, 2013); 74 FR at 32784 (July 8, 2009); 73 FR at 12169 (Mar. 6, 2008).

H. Executive Order 13132 (Federalism)

Executive Order 13132 requires federal agencies to develop an accountable process to ensure "meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications." The Order defines the term "Policies that have federalism implications" to include regulations that have "substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government." Under the Order, agencies may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, unless the Federal government

provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or the agencies consult with State and local officials early in the process of developing the proposed regulation. The agencies complied with Order's requirements and discuss their response to comments in the above sections.

I. Executive Order 12988 (Civil Justice Reform)

Pursuant to Executive Order 12988, "Civil Justice Reform,"³⁴⁰ NHTSA has determined that this final rule does not have any retroactive effect.

J. Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments)

This final rule does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). This rule will be implemented at the Federal level. Thus, Executive Order 13175 does not apply to this rule. Two commenters raised issues associated with this Executive Order. Issues raised in these comments related to the standards will be addressed that forthcoming rulemaking. One commenter, in an apparent reference to the preemption actions being finalized in this document, argued that the NPRM would weaken tribal abilities to set GHG standards. This is incorrect: The finalization of the EPCA preemption provisions merely clarifies the law that any law or regulation of a State or political subdivision of a State "related to" fuel economy is preempted, while EPA's decision in this document only affects a State, not a Tribal government.

K. Unfunded Mandates Reform Act

Section 202 of the Unfunded Mandates Reform Act of 1995 (UMRA) requires Federal agencies to prepare a written assessment of the costs, benefits, and other effects of a proposed or final rule that includes a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of more than \$100 million in any one year (adjusted for inflation with base year of 1995). Adjusting this amount by the implicit gross domestic product price deflator for 2016 results in \$148 million ($111.416/75.324 = 1.48$).³⁴¹ This final rule will not result in the expenditure by State, local, or Tribal governments, in

the aggregate, or by the private sector of more than \$148 million annually.

L. Regulation Identifier Number

The Department of Transportation assigns a regulation identifier number (RIN) to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. You may use the RIN contained in the heading at the beginning of this document to find this action in the Unified Agenda.

M. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) requires NHTSA and EPA to evaluate and use existing voluntary consensus standards in its regulatory activities unless doing so would be inconsistent with applicable law (e.g., the statutory provisions regarding NHTSA's vehicle safety authority, or EPA's testing authority) or otherwise impractical.³⁴² As this action does not affect the CAFE or GHG standards, it is not subject to the NTTAA.

N. Department of Energy Review

49 U.S.C. 32902(j)(2) requires that "Before taking final action on a standard or an exemption from a standard under this section, the Secretary of Transportation shall notify the Secretary of Energy and provide the Secretary of Energy a reasonable time to comment." As this action does not establish a standard or provide an exemption, it is not subject to this requirement. However, NHTSA has submitted this action to OMB for interagency review and, thus, the Department of Energy has been afforded the opportunity to review.

O. Paperwork Reduction Act

The Paperwork Reduction Act (PRA) of 1995, Public Law 104-13,³⁴³ gives the Office of Management and Budget (OMB) authority to regulate matters regarding the collection, management, storage, and dissemination of certain information by and for the Federal government. It seeks to reduce the total amount of paperwork handled by the government and the public. The PRA requires Federal agencies to place a notice in the **Federal Register** seeking public comment on the proposed collection of information. This action includes no information collections. The information collections associated with the CAFE and GHG programs will

be discussed in the final rule that will establish CAFE and GHG standards.

P. Privacy Act

In accordance with 5 U.S.C. 553(c), the agencies solicited comments from the public to better inform the rulemaking process. These comments are posted, without edit, to www.regulations.gov, as described in DOT's system of records notice, DOT/ALL-14 FDMS, accessible through www.transportation.gov/privacy.

Q. Judicial Review

NHTSA and EPA undertake this joint action under their respective authorities pursuant to the Energy Policy and Conservation Act and the Clean Air Act, mindful of the Supreme Court's statement in *Massachusetts v. EPA*, 549 U.S. 497, 532 (2007), that "there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency." Pursuant to Clean Air Act section 307(b), any petitions for judicial review of this action must be filed in the United States Court of Appeals for the D.C. Circuit by November 26, 2019. Given the inherent relationship between the agencies' actions, any challenges to NHTSA's regulation should also be filed in the United States Court of Appeals for the D.C. Circuit.

List of Subjects in 49 CFR Parts 531 and 533

Fuel economy.

Regulatory Text

In consideration of the foregoing, under the authority of 49 U.S.C. 322, 32901, 32902, and 32903, and delegation of authority at 49 CFR 1.95, NHTSA amends 49 CFR chapter V as follows:

PART 531—PASSENGER AUTOMOBILE AVERAGE FUEL ECONOMY STANDARDS

■ 1. The authority citation for part 531 continues to read as follows:

Authority: 49 U.S.C. 32902, delegation of authority at 49 CFR 1.50.

■ 2. Add § 531.7 to read as follows:

§ 531.7 Preemption.

(a) *General.* When an average fuel economy standard prescribed under this chapter is in effect, a State or a political subdivision of a State may not adopt or enforce a law or regulation related to fuel economy standards or average fuel economy standards for automobiles covered by an average fuel economy standard under this chapter.

³⁴⁰ 61 FR 4729 (Feb. 7, 1996).

³⁴¹ Bureau of Economic Analysis, National Income and Product Accounts (NIPA), Table 1.1.9 Implicit Price Deflators for Gross Domestic Product. https://bea.gov/iTable/index_nipa.cfm.

³⁴² 15 U.S.C. 272.

³⁴³ Codified at 44 U.S.C. 3501 *et seq.*

(b) *Requirements must be identical.* When a requirement under section 32908 of title 49 of the United States Code is in effect, a State or a political subdivision of a State may adopt or enforce a law or regulation on disclosure of fuel economy or fuel operating costs for an automobile covered by section 32908 only if the law or regulation is identical to that requirement.

(c) *State and political subdivision automobiles.* A State or a political subdivision of a State may prescribe requirements for fuel economy for automobiles obtained for its own use.

Appendix to Part 531 [Designated as Appendix A to Part 531 and Amended]

■ 3. Designate the appendix to part 531 as appendix A to part 531 and in newly designated appendix A, remove all references to “Appendix” and add in their place “Appendix A.”

■ 4. Add appendix B to part 531 to read as follows:

Appendix B to Part 531—Preemption

(a) Express Preemption:

(1) To the extent that any law or regulation of a State or a political subdivision of a State regulates or prohibits tailpipe carbon dioxide emissions from automobiles, such a law or regulation relates to average fuel economy standards within the meaning of 49 U.S.C. 32919.

(A) Automobile fuel economy is directly and substantially related to automobile tailpipe emissions of carbon dioxide;

(B) Carbon dioxide is the natural by-product of automobile fuel consumption;

(C) The most significant and controlling factor in making the measurements necessary to determine the compliance of automobiles with the fuel economy standards in this part is their rate of tailpipe carbon dioxide emissions;

(D) Almost all technologically feasible reduction of tailpipe emissions of carbon dioxide is achievable through improving fuel economy, thereby reducing both the consumption of fuel and the creation and emission of carbon dioxide;

(E) Accordingly, as a practical matter, regulating fuel economy controls the amount of tailpipe emissions of carbon dioxide, and regulating the tailpipe emissions of carbon dioxide controls fuel economy.

(2) As a law or regulation related to fuel economy standards, any law or regulation of a State or a political subdivision of a State regulating or prohibiting tailpipe carbon dioxide emissions from automobiles is expressly preempted under 49 U.S.C. 32919.

(3) A law or regulation of a State or a political subdivision of a State having the direct or substantial effect of regulating or prohibiting tailpipe carbon dioxide emissions from automobiles or automobile fuel economy is a law or regulation related to fuel economy standards and expressly preempted under 49 U.S.C. 32919.

(b) Implied Preemption:

(1) A law or regulation of a State or a political subdivision of a State regulating tailpipe carbon dioxide emissions from automobiles, particularly a law or regulation that is not attribute-based and does not separately regulate passenger cars and light trucks, conflicts with:

(A) The fuel economy standards in this part;

(B) The judgments made by the agency in establishing those standards; and

(C) The achievement of the objectives of the statute (49 U.S.C. Chapter 329) under which those standards were established, including objectives relating to reducing fuel consumption in a manner and to the extent consistent with manufacturer flexibility, consumer choice, and automobile safety.

(2) Any law or regulation of a State or a political subdivision of a State regulating or prohibiting tailpipe carbon dioxide emissions from automobiles is impliedly preempted under 49 U.S.C. Chapter 329.

(3) A law or regulation of a State or a political subdivision of a State having the direct or substantial effect of regulating or prohibiting tailpipe carbon dioxide emissions from automobiles or automobile fuel economy is impliedly preempted under 49 U.S.C. Chapter 329.

PART 533—LIGHT TRUCK FUEL ECONOMY STANDARDS

■ 5. The authority citation for part 533 continues to read as follows:

Authority: 49 U.S.C. 32902; delegation of authority at 49 CFR 1.50.

■ 6. Add § 533.7 to read as follows:

§ 533.7 Preemption.

(a) *General.* When an average fuel economy standard prescribed under this chapter is in effect, a State or a political subdivision of a State may not adopt or enforce a law or regulation related to fuel economy standards or average fuel economy standards for automobiles covered by an average fuel economy standard under this chapter.

(b) *Requirements must be identical.*

When a requirement under section 32908 of title 49 of the United States Code is in effect, a State or a political subdivision of a State may adopt or enforce a law or regulation on disclosure of fuel economy or fuel operating costs for an automobile covered by section 32908 only if the law or regulation is identical to that requirement.

(c) *State and political subdivision automobiles.* A State or a political subdivision of a State may prescribe requirements for fuel economy for automobiles obtained for its own use.

Appendix to Part 533 [Designated as Appendix A to Part 533 and Amended]

■ 7. Designate appendix to part 533 as appendix A to part 533 and in newly redesignated appendix A, remove all

references to “Appendix” and add in their place “Appendix A”.

■ 8. Add appendix B to part 533 to read as follows:

Appendix B to Part 533—Preemption

(a) Express Preemption:

(1) To the extent that any law or regulation of a State or a political subdivision of a State regulates or prohibits tailpipe carbon dioxide emissions from automobiles, such a law or regulation relates to average fuel economy standards within the meaning of 49 U.S.C. 32919.

(A) Automobile fuel economy is directly and substantially related to automobile tailpipe emissions of carbon dioxide;

(B) Carbon dioxide is the natural by-product of automobile fuel consumption;

(C) The most significant and controlling factor in making the measurements necessary to determine the compliance of automobiles with the fuel economy standards in this part is their rate of tailpipe carbon dioxide emissions;

(D) Almost all technologically feasible reduction of tailpipe emissions of carbon dioxide is achievable through improving fuel economy, thereby reducing both the consumption of fuel and the creation and emission of carbon dioxide;

(E) Accordingly, as a practical matter, regulating fuel economy controls the amount of tailpipe emissions of carbon dioxide, and regulating the tailpipe emissions of carbon dioxide controls fuel economy.

(2) As a law or regulation of a State or a political subdivision of a State related to fuel economy standards, any state law or regulation regulating or prohibiting tailpipe carbon dioxide emissions from automobiles is expressly preempted under 49 U.S.C. 32919.

(3) A law or regulation of a State or a political subdivision of a State having the direct or substantial effect of regulating or prohibiting tailpipe carbon dioxide emissions from automobiles or automobile fuel economy is a law or regulation related to fuel economy standards and expressly preempted under 49 U.S.C. 32919.

(b) Implied Preemption:

(1) A law or regulation of a State or a political subdivision of a State regulating tailpipe carbon dioxide emissions from automobiles, particularly a law or regulation that is not attribute-based and does not separately regulate passenger cars and light trucks, conflicts with:

(A) The fuel economy standards in this part;

(B) The judgments made by the agency in establishing those standards; and

(C) The achievement of the objectives of the statute (49 U.S.C. Chapter 329) under which those standards were established, including objectives relating to reducing fuel consumption in a manner and to the extent consistent with manufacturer flexibility, consumer choice, and automobile safety.

(2) Any law or regulation of a State or a political subdivision of a State regulating or prohibiting tailpipe carbon dioxide emissions from automobiles is impliedly preempted under 49 U.S.C. Chapter 329.

(3) A law or regulation of a State or a political subdivision of a State having the direct or substantial effect of regulating or prohibiting tailpipe carbon dioxide emissions from automobiles or automobile fuel economy is impliedly preempted under 49 U.S.C. Chapter 329.

Issued on September 19, 2019 in Washington, DC, under authority delegated in 49 CFR 1.95 and 501.4

Dated: September 19, 2019.

James C. Owens,
Acting Administrator, National Highway Traffic Safety Administration.

Dated: September 19, 2019.

Andrew R. Wheeler,
Administrator, Environmental Protection Agency.

[FR Doc. 2019-20672 Filed 9-26-19; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

49 CFR Parts 523, 531, 533, 536, and 537

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 85 and 86

[NHTSA–2018–0067; EPA–HQ–OAR–2018–0283; FRL–9981–74–OAR]

RIN 2127–AL76; RIN 2060–AU09

The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks

AGENCY: Environmental Protection Agency and National Highway Traffic Safety Administration.

ACTION: Notice of proposed rulemaking.

SUMMARY: The National Highway Traffic Safety Administration (NHTSA) and the Environmental Protection Agency (EPA) are proposing the “Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks” (SAFE Vehicles Rule). The SAFE Vehicles Rule, if finalized, would amend certain existing Corporate Average Fuel Economy (CAFE) and tailpipe carbon dioxide emissions standards for passenger cars and light trucks and establish new standards, all covering model years 2021 through 2026. More specifically, NHTSA is proposing new CAFE standards for model years 2022 through 2026 and amending its 2021 model year CAFE standards because they are no longer maximum feasible standards, and EPA is proposing to amend its carbon dioxide emissions standards for model years 2021 through 2025 because they are no longer appropriate and reasonable in addition to establishing new standards for model year 2026. The preferred alternative is to retain the model year 2020 standards (specifically, the footprint target curves for passenger cars and light trucks) for both programs through model year 2026, but comment is sought on a range of alternatives discussed throughout this document. Compared to maintaining the post-2020 standards set forth in 2012, current estimates indicate that the proposed SAFE Vehicles Rule would save over 500 billion dollars in societal costs and reduce highway fatalities by 12,700 lives (over the lifetimes of vehicles through MY 2029). U.S. fuel consumption would increase by about

half a million barrels per day (2–3 percent of total daily consumption, according to the Energy Information Administration) and would impact the global climate by 3/1000th of one degree Celsius by 2100, also when compared to the standards set forth in 2012.

DATES: *Comments:* Comments are requested on or before October 23, 2018. Under the Paperwork Reduction Act, comments on the information collection provisions must be received by the Office of Management and Budget (OMB) on or before October 23, 2018. See the **SUPPLEMENTARY INFORMATION** section on “Public Participation,” below, for more information about written comments.

Public Hearings: NHTSA and EPA will jointly hold three public hearings in Washington, DC; the Detroit, MI area; and in the Los Angeles, CA area. The agencies will announce the specific dates and addresses for each hearing location in a supplemental **Federal Register** notice. The agencies will accept oral and written comments to the rulemaking documents, and NHTSA will also accept comments to the Draft Environmental Impact Statement (DEIS) at these hearings. The hearings will start at 10 a.m. local time and continue until everyone has had a chance to speak. See the **SUPPLEMENTARY INFORMATION** section on “Public Participation,” below, for more information about the public hearings.

ADDRESSES: You may send comments, identified by Docket No. EPA–HQ–OAR–2018–0283 and/or NHTSA–2018–0067, by any of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the instructions for sending comments.
- *Fax:* EPA: (202) 566–9744; NHTSA: (202) 493–2251.
- *Mail:*
 - EPA: Environmental Protection Agency, EPA Docket Center (EPA/DC), Air and Radiation Docket, Mail Code 28221T, 1200 Pennsylvania Avenue NW, Washington, DC 20460, Attention Docket ID No. EPA–HQ–OAR–2018–0283. In addition, please mail a copy of your comments on the information collection provisions for the EPA proposal to the Office of Information and Regulatory Affairs, Office of Management and Budget (OMB), Attn: Desk Officer for EPA, 725 17th St. NW, Washington, DC 20503.
 - NHTSA: Docket Management Facility, M–30, U.S. Department of Transportation, West Building, Ground Floor, Rm. W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- *Hand Delivery:*

- EPA: Docket Center (EPA/DC), EPA West, Room B102, 1301 Constitution Avenue NW, Washington, DC, Attention Docket ID No. EPA–HQ–OAR–2018–0283. Such deliveries are only accepted during the Docket’s normal hours of operation, and special arrangements should be made for deliveries of boxed information.

- NHTSA: West Building, Ground Floor, Rm. W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590, between 9 a.m. and 4 p.m. Eastern Time, Monday through Friday, except Federal holidays.

Instructions: All submissions received must include the agency name and docket number or Regulatory Information Number (RIN) for this rulemaking. All comments received will be posted without change to <http://www.regulations.gov>, including any personal information provided. For detailed instructions on sending comments and additional information on the rulemaking process, see the “Public Participation” heading of the **SUPPLEMENTARY INFORMATION** section of this document.

Docket: For access to the dockets to read background documents or comments received, go to <http://www.regulations.gov>, and/or:

- *For EPA:* EPA Docket Center (EPA/DC), EPA West, Room 3334, 1301 Constitution Avenue NW, Washington, DC 20460. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744.
- *For NHTSA:* Docket Management Facility, M–30, U.S. Department of Transportation, West Building, Ground Floor, Rm. W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590. The Docket Management Facility is open between 9 a.m. and 4 p.m. Eastern Time, Monday through Friday, except Federal holidays.

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SUPPLEMENTARY INFORMATION:

- I. Overview of Joint NHTSA/EPA Proposal
- II. Technical Foundation for NPRM Analysis
- III. Proposed CAFE and CO₂ Standards for MYs 2021–2026
- IV. Alternative CAFE and GHG Standards Considered for MYs 2021/22–2026
- V. Proposed Standards, the Agencies’ Statutory Obligations, and Why the Agencies Propose To Choose Them Over the Alternatives
- VI. Preemption of State and Local Laws
- VII. Impacts of the Proposed CAFE and CO₂ Standards
- VIII. Impacts of Alternative CAFE and CO₂ Standards Considered for MYs 2021/22–2026
- IX. Vehicle Classification
- X. Compliance and Enforcement
- XI. Public Participation
- XII. Regulatory Notices and Analyses

I. Overview of Joint NHTSA/EPA Proposal

A. Executive Summary

In this notice, the National Highway Traffic Safety Administration (NHTSA) and the Environmental Protection Agency (EPA) (collectively, “the agencies”) are proposing the “Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks” (SAFE Vehicles Rule). The proposed SAFE Vehicles Rule would set Corporate Average Fuel Economy (CAFE) and carbon dioxide (CO₂) emissions standards, respectively, for passenger cars and light trucks manufactured for sale in the United States in model years (MYs) 2021 through 2026.¹ CAFE and CO₂ standards have the power to transform the vehicle fleet and affect Americans’ lives in significant, if not always immediately obvious, ways. The proposed SAFE Vehicles Rule seeks to ensure that government action on these standards is appropriate, reasonable, consistent with law, consistent with current and foreseeable future economic realities, and supported by a transparent assessment of current facts and data.

The agencies must act to propose and finalize these standards and do not have discretion to decline to regulate. Congress requires NHTSA to set CAFE standards for each model year.² Congress also requires EPA to set emissions standards for light-duty vehicles if EPA has made an “endangerment finding” that the pollutant in question—in this case,

CO₂—“cause[s] or contribute[s] to air pollution which may reasonably be anticipated to endanger public health or welfare.”³ NHTSA and EPA are proposing these standards concurrently because tailpipe CO₂ emissions standards are directly and inherently related to fuel economy standards,⁴ and if finalized, these rules would apply concurrently to the same fleet of vehicles. By working together to develop these proposals, the agencies reduce regulatory burden on industry and improve administrative efficiency.

Consistent with both agencies’ statutes, this proposal is entirely *de novo*, based on an entirely new analysis reflecting the best and most up-to-date information available to the agencies at the time of this rulemaking. The agencies worked together in 2012 to develop CAFE and CO₂ standards for MYs 2017 and beyond; in that rulemaking action, EPA set CO₂ standards for MYs 2017–2025, while NHTSA set final CAFE standards for MYs 2017–2021 and also put forth “augural” CAFE standards for MYs 2022–2025, consistent with EPA’s CO₂ standards for those model years. EPA’s CO₂ standards for MYs 2022–2025 were subject to a “mid-term evaluation,” by which EPA bound itself through regulation to re-evaluate the CO₂ standards for those model years and to undertake to develop new CO₂ standards through a regulatory process if it concluded that the previously finalized standards were no longer appropriate. EPA regulations on the mid-term evaluation process required EPA to issue a Final Determination no later than April 1, 2018 on whether the GHG standards for MY 2022–2025 light-duty vehicles remain appropriate under

section 202(a) of the Clean Air Act.⁵ The regulations also required the issuance of a draft Technical Assessment Report (TAR) by November 15, 2017, an opportunity for public comment on the draft TAR, and, before making a Final Determination, an opportunity for public comment on whether the GHG standards for MY 2022–2025 remain appropriate. In July 2016, the draft TAR was issued for public comment jointly by the EPA, NHTSA, and the California Air Resources Board (CARB).⁶ Following the draft TAR, EPA published a Proposed Determination for public comment on December 6, 2016 and provided less than 30 days for public comments over major holidays.⁷ EPA published the January 2017 Determination on EPA’s website and *regulations.gov* finding that the MY 2022–2025 standards remained appropriate.⁸

On March 15, 2017, President Trump announced a restoration of the original mid-term review timeline. The President made clear in his remarks, “[i]f the standards threatened auto jobs, then commonsense changes” would be made in order to protect the economic viability of the U.S. automotive industry.”⁹ In response to the President’s direction, EPA announced in a March 22, 2017, **Federal Register** notice, its intention to reconsider the Final Determination of the mid-term evaluation of GHGs emissions standards for MY 2022–2025 light-duty vehicles.¹⁰ The Administrator stated that EPA would coordinate its reconsideration with the rulemaking process to be undertaken by NHTSA regarding CAFE standards for cars and light trucks for the same model years.

On August 21, 2017, EPA published a notice in the **Federal Register** announcing the opening of a 45-day public comment period and inviting stakeholders to submit any additional comments, data, and information they believed were relevant to the Administrator’s reconsideration of the

³ 42 U.S.C. 7521, *see also* 74 FR 66495 (Dec. 15, 2009) (“Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act”).

⁴ *See, e.g.*, 75 FR 25324, at 25327 (May 7, 2010) (“The National Program is both needed and possible because the relationship between improving fuel economy and reducing tailpipe CO₂ emissions is a very direct and close one. The amount of those CO₂ emissions is essentially constant per gallon combusted of a given type of fuel. Thus, the more fuel efficient a vehicle is, the less fuel it burns to travel a given distance. The less fuel it burns, the less CO₂ it emits in traveling that distance. [citation omitted] While there are emission control technologies that reduce the pollutants (e.g., carbon monoxide) produced by imperfect combustion of fuel by capturing or converting them to other compounds, there is no such technology for CO₂. Further, while some of those pollutants can also be reduced by achieving a more complete combustion of fuel, doing so only increases the tailpipe emissions of CO₂. Thus, there is a single pool of technologies for addressing these twin problems, *i.e.*, those that reduce fuel consumption and thereby reduce CO₂ emissions as well.”)

⁵ 40 CFR 86.1818–12(h)(1); *see also* 77 FR 62624 (Oct. 15, 2012).

⁶ 81 FR 49217 (Jul. 27, 2016).

⁷ 81 FR 87927 (Dec. 6, 2016).

⁸ Docket item EPA–HQ–OAR–2015–0827–6270 (EPA–420–R–17–001). This conclusion generated a significant amount of public concern. *See, e.g.*, Letter from Auto Alliance to Scott Pruitt, Administrator, Environmental Protection Agency (Feb. 21, 2017); Letter from Global Automakers to Scott Pruitt, Administrator, Environmental Protection Agency (Feb. 21, 2017).

⁹ *See* <https://www.whitehouse.gov/briefings-statements/remarks-president-trump-american-center-mobility-detroit-mi/>.

¹⁰ 82 FR 14671 (Mar. 22, 2017).

¹ NHTSA sets CAFE standards under the Energy Policy and Conservation Act of 1975 (EPCA), as amended by the Energy Independence and Security Act of 2007 (EISA). EPA sets CO₂ standards under the Clean Air Act (CAA).

² 49 U.S.C. 32902.

January 2017 Determination.¹¹ EPA held a public hearing in Washington DC on September 6, 2017.¹² EPA received more than 290,000 comments in response to the August 21, 2017 notice.¹³

EPA has since concluded, based on more recent information, that those standards are no longer appropriate.¹⁴ NHTSA's "augural" CAFE standards for MYs 2022–2025 were not final in 2012 because Congress prohibits NHTSA from finalizing new CAFE standards for more than five model years in a single rulemaking.¹⁵ NHTSA was therefore obligated from the beginning to undertake a new rulemaking to set CAFE standards for MYs 2022–2025.

The proposed SAFE Vehicles Rule begins the rulemaking process for both agencies to establish new standards for MYs 2022–2025 passenger cars and light trucks. Standards are concurrently being proposed for MY 2026 in order to provide regulatory stability for as many years as is legally permissible for both agencies together.

Separately, the proposed SAFE Vehicles Rule includes revised standards for MY 2021 passenger cars and light trucks. The information now available and the current analysis

suggest that the CAFE standards previously set for MY 2021 are no longer maximum feasible, and the CO₂ standards previously set for MY 2021 are no longer appropriate. Agencies always have authority under the Administrative Procedure Act to revisit previous decisions in light of new facts, as long as they provide notice and an opportunity for comment, and it is plainly the best practice to do so when changed circumstances so warrant.¹⁶

Thus, the proposed SAFE Vehicles Rule would maintain the CAFE and CO₂ standards applicable in MY 2020 for MYs 2021–2026, while taking comment on a wide range of alternatives, including different stringencies and retaining existing CO₂ standards and the augural CAFE standards.¹⁷ Table I–4

¹⁶ See *FCC v. Fox Television*, 556 U.S. 502 (2009).

¹⁷ Note: This does not mean that the miles per gallon and grams per mile levels that were estimated for the MY 2020 fleet in 2012 would be the "standards" going forward into MYs 2021–2026. Both NHTSA and EPA set CAFE and CO₂ standards, respectively, as mathematical functions based on vehicle footprint. These mathematical functions that are the actual standards are defined as "curves" that are separate for passenger cars and light trucks, under which each vehicle manufacturer's compliance obligation varies depending on the footprints of the cars and trucks that it ultimately produces for sale in a given model year. It is the MY 2020 CAFE and CO₂ curves which we propose would continue to apply to the passenger car and light truck fleets for MYs 2021–2026. The mpg and g/mi values which those curves would eventually require of the fleets in those model years would be known for certain only at the ends of each of those model years. While it is convenient to discuss CAFE and CO₂ standards as a set "mpg," "g/mi," or "mpg-e" number, attempting to define those values today will end up being inaccurate.

below presents those alternatives. We note further that prior to MY 2021, CO₂ targets include adjustments reflecting the use of automotive refrigerants with reduced global warming potential (GWP) and/or the use of technologies that reduce the refrigerant leaks, and optionally offsets for nitrous oxide and methane emissions. In the interests of harmonizing with the CAFE program, EPA is proposing to exclude air conditioning refrigerants and leakage, and nitrous oxide and methane emissions for compliance with CO₂ standards after model year 2020 but seeks comment on whether to retain these element, and reinsert A/C leakage offsets, and remain disharmonized with the CAFE program. EPA also seeks comment on whether to change existing methane and nitrous oxide standards that were finalized in the 2012 rule. Specifically, EPA seeks information from the public on whether those existing standards are appropriate, or whether they should be revised to be less stringent or more stringent based on any updated data.

While actual requirements will ultimately vary for automakers depending upon their individual fleet mix of vehicles, many stakeholders will likely be interested in the current estimate of what the MY 2020 CAFE and CO₂ curves would translate to, in terms of miles per gallon (mpg) and grams per mile (g/mi), in MYs 2021–2026. These estimates are shown in the following tables.

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¹¹ 82 FR 39551 (Aug. 21, 2017).

¹² 82 FR 39976 (Aug. 23, 2017).

¹³ The public comments, public hearing transcript, and other information relevant to the Mid-term Evaluation are available in docket EPA–HQ–OAR–2015–0827.

¹⁴ 83 FR 16077 (Apr. 2, 2018).

¹⁵ 49 U.S.C. 32902.

Table I-1 - Average of OEMs' CAFE and CO₂ Estimated Requirements for Passenger Cars

Model Year	Avg. of OEMs' Est. Requirements	
	CAFE (mpg)	CO ₂ (g/mi)
2017	39.1	220
2018	40.5	210
2019	42.0	201
2020	43.7	191
2021	43.7	204
2022	43.7	204
2023	43.7	204
2024	43.7	204
2025	43.7	204
2026	43.7	204

Table I-2 - Average of OEMs' CAFE and CO₂ Estimated Requirements for Light Trucks

Model Year	Avg. of OEMs' Est. Requirements	
	CAFE (mpg)	CO ₂ (g/mi)
2017	29.5	294
2018	30.1	284
2019	30.6	277
2020	31.3	269
2021	31.3	284
2022	31.3	284
2023	31.3	284
2024	31.3	284
2025	31.3	284
2026	31.3	284

Table I-3 - Average of OEMs' Estimated CAFE and CO₂ Requirements (Passenger Cars and Light Trucks)

Model Year	Avg. of OEMs' Est. Requirements	
	CAFE (mpg)	CO ₂ (g/mi)
2017	34.0	254
2018	34.9	244
2019	35.8	236
2020	36.9	227
2021	36.9	241
2022	36.9	241
2023	36.9	241
2024	37.0	241
2025	37.0	240
2026	37.0	240

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In the tables above, estimated required CO₂ increases between MY 2020 and MY 2021 because, again, EPA is proposing to exclude CO₂-equivalent emission improvements associated with

air conditioning refrigerants and leakage (and, optionally, offsets for nitrous oxide and methane emissions) after model year 2020.

As explained above, the agencies are taking comment on a wide range of

alternatives and have specifically modeled eight alternatives (including the proposed alternative) and the current requirements (*i.e.*, baseline/no-action). The modeled alternatives are provided below:

Table I-4 - Regulatory Alternatives Currently under Consideration

Alternative	Change in stringency	A/C efficiency and off-cycle provisions	CO ₂ Equivalent AC Refrigerant Leakage, Nitrous Oxide and Methane Emissions Included for Compliance?
Baseline/ No-Action	MY 2021 standards remain in place; MYs 2022-2025 augural CAFE standards are finalized and GHG standards remain unchanged; MY 2026 standards are set at MY 2025 levels	No change	Yes, for all MYs ¹⁸
1 (Proposed)	Existing standards through MY 2020, then 0%/year increases for both passenger cars and light trucks, for MYs 2021-2026	No change	No, beginning in MY 2021 ¹⁹
2	Existing standards through MY 2020, then 0.5%/year increases for both passenger cars and light trucks, for MYs 2021-2026	No change	No, beginning in MY 2021
3	Existing standards through MY 2020, then 0.5%/year increases for both passenger cars and light trucks, for MYs 2021-2026	Phase out these adjustments over MYs 2022-2026	No, beginning in MY 2021
4	Existing standards through MY 2020, then 1%/year increases for passenger cars and 2%/year increases for light trucks, for MYs 2021-2026	No change	No, beginning in MY 2021
5	Existing standards through MY 2021, then 1%/year increases for passenger cars and 2%/year increases for light trucks, for MYs 2022-2026	No change	No, beginning in MY 2022
6	Existing standards through MY 2020, then 2%/year increases for passenger cars and 3%/year increases for light trucks, for MYs 2021-2026	No change	No, beginning in MY 2021
7	Existing standards through MY 2020, then 2%/year increases for passenger cars and 3%/year increases for light trucks, for MYs 2021-2026	Phase out these adjustments over MYs 2022-2026	No, beginning in MY 2021
8	Existing standards through MY 2021, then 2%/year increases for passenger cars and 3%/year increases for light trucks, for MYs 2022-2026	No change	No, beginning in MY 2022

Summary of Rationale

Since finalizing the agencies' previous joint rulemaking in 2012 titled "Final Rule for Model Year 2017 and Later

Light-Duty Vehicle Greenhouse Gas Emission and Corporate Average Fuel Economy Standards," and even since EPA's 2016 and early 2017 "mid-term

evaluation" process, the agencies have gathered new information, and have performed new analysis. That new information and analysis has led the

¹⁸ Carbon dioxide equivalent of air conditioning refrigerant leakage, nitrous oxide and methane emissions are included for compliance with the EPA standards for all MYs under the baseline/no action alternative. Carbon dioxide equivalent is

calculated using the Global Warming Potential (GWP) of each of the emissions.

¹⁹ Beginning in MY 2021, the proposal provides that the GWP equivalents of air conditioning

refrigerant leakage, nitrous oxide and methane emissions would no longer be able to be included with the tailpipe CO₂ for compliance with tailpipe CO₂ standards.

agencies to the tentative conclusion that holding standards constant at MY 2020 levels through MY 2026 is maximum feasible, for CAFE purposes, and appropriate, for CO₂ purposes.

Technologies have played out differently in the fleet from what the agencies assumed in 2012.

The technology to improve fuel economy and reduce CO₂ emissions has not changed dramatically since prior analyses were conducted: A wide variety of technologies are still available to accomplish the goals of the programs, and a wide variety of technologies would likely be used by industry to accomplish these goals. There remains no single technology that the majority of vehicles made by the majority of manufacturers can implement at low cost without affecting other vehicle attributes that consumers value more than fuel economy and CO₂ emissions. Even when used in combination, technologies that can improve fuel economy and reduce CO₂ emissions still need to (1) actually work together and (2) be acceptable to consumers and avoid sacrificing other vehicle attributes while also avoiding undue increases in vehicle cost. Optimism about the costs and effectiveness of many individual technologies, as compared to recent prior rounds of rulemaking, is somewhat tempered; a clearer understanding of what technologies are already on vehicles in the fleet and how they are being used, again as compared to recent prior rounds of rulemaking, means that technologies that previously appeared to offer significant “bang for the buck” may no longer do so. Additionally, in light of the reality that vehicle manufacturers may choose the relatively cost-effective technology option of vehicle lightweighting for a wide array of vehicles and not just the largest and heaviest, it is now recognized that as the stringency of standards increases, so does the likelihood that higher stringency will increase on-road fatalities. As it turns out, there is no such thing as a free lunch.²⁰

Technology that can improve both fuel economy and/or performance may not be dedicated solely to fuel economy.

As fleet-wide fuel efficiency has improved over time, additional improvements have become both more complicated and more costly. There are two primary reasons for this

phenomenon. First, as discussed, there is a known pool of technologies for improving fuel economy and reducing CO₂ emissions. Many of these technologies, when actually implemented on vehicles, can be used to improve other vehicle attributes such as “zero to 60” performance, towing, and hauling, etc., either instead of or in addition to improving fuel economy and reducing CO₂ emissions. As one example, a V6 engine can be turbocharged and downsized so that it consumes only as much fuel as an inline 4-cylinder engine, or it can be turbocharged and downsized so that it consumes less fuel than it would originally have consumed (but more than the inline 4-cylinder would) while also providing more low-end torque. As another example, a vehicle can be lightweighted so that it consumes less fuel than it would originally have consumed, or so that it consumes the same amount of fuel it would originally have consumed but can carry more content, like additional safety or infotainment equipment. Manufacturers employing “fuel-saving/emissions-reducing” technologies in the real world make decisions regarding how to employ that technology such that fewer than 100% of the possible fuel-saving/emissions-reducing benefits result. They do this because this is what consumers want, and more so than exclusively fuel economy improvements.

This makes actual fuel economy gains more expensive.

Thus, even though the technologies may be largely the same, previous assumptions about how much fuel can be saved or how much emissions can be reduced by employing various technologies may not have played out as prior analyses suggested, meaning that previous assumptions about how much it would cost to save that much fuel or reduce that much in emissions fall correspondingly short. For example, the agencies assumed in the 2010 final rule that dual clutch transmissions would be widely used to improve fuel economy due to expectations of strong effectiveness and very low cost: In practice, dual clutch transmissions had significant customer acceptance issues, and few manufacturers employ them in the U.S. market today.²¹ The agencies included some “technologies” in the 2012 final rule analysis that were defined ambiguously and/or in ways

that precluded observation in the known (MYs 2008 and 2010) fleets, likely leading to double counting in cases where the known vehicles already reflected the assumed efficiency improvement. For example, the agencies assumed that transmission “shift optimizers” would be available and fairly widely used in MYs 2017–2025, but involving software controls, a “technology” not defined in a way that would be observed in the fleet (unlike, for example, a dual clutch transmission).

To be clear, this is no one’s “fault”—the CAFE and CO₂ standards do not require manufacturers to use particular technologies in particular ways, and both agencies’ past analyses generally sought to illustrate technology paths to compliance that were assumed to be as cost-effective as possible. If manufacturers choose different paths for reasons not accounted for in regulatory analysis, or choose to use technologies differently from what the agencies previously assumed, it does not necessarily mean that the analyses were unreasonable when performed. It *does* mean, however, that the fleet ought to be reflected as it stands today, with the technology it has and as that technology has been used, and consider what technology remains on the table at this point, whether and when it can realistically be available for widespread use in production, and how much it would cost to implement.

Incremental additional fuel economy benefits are subject to diminishing returns.

As fleet-wide fuel efficiency improves and CO₂ emissions are reduced, the incremental benefit of continuing to improve/reduce inevitably decreases. This is because, as the base level of fuel economy improves, fewer gallons are saved from subsequent incremental improvements. Put simply, a one mpg increase for vehicles with low fuel economy will result in far greater savings than an identical 1 mpg increase for vehicles with higher fuel economy, and the cost for achieving a one-mpg increase for low fuel economy vehicles is far less than for higher fuel economy vehicles. This means that improving fuel economy is subject to diminishing returns. Annual fuel consumption can be calculated as follows:

²⁰ Mankiw, N. Gregory, *Principles of Macroeconomics*, Sixth Edition, 2012, at 4.

²¹ In fact, one manufacturer saw enough customer pushback that it launched a buyback program. See,

e.g., Steve Lehto, “What you need to know about the settlement for Ford Powershift owners,” *Road and Track*, Oct. 19, 2017. Available at <https://www.roadandtrack.com/car-culture/a10316276/>

what-you-need-to-know-about-the-proposed-settlement-for-ford-powershift-owners/ (last accessed Jul. 2, 2018).

$$\text{Fuel Consumption (gallons)} = \frac{\text{Distance Traveled (miles)}}{\text{Fuel Economy (mpg)}}$$

For purposes of illustration, assume a vehicle owner who drives a light vehicle 15,000 miles per year (a typical assumption for analytical purposes).²² If that owner trades in a vehicle with fuel economy of 15 mpg for one with fuel economy of 20 mpg, the owner's annual fuel consumption would drop from 1,000 gallons to 750 gallons—saving 250 gallons annually. If, however, that owner were to trade in a vehicle with fuel economy of 30 mpg for one with fuel economy of 40 mpg, the owner's annual gasoline consumption would drop from 500 gallons/year to 375 gallons/year—only 125 gallons even though the mpg improvement is twice

as large. Going from 40 to 50 mpg would save only 75 gallons/year. Yet, each additional fuel economy improvement becomes much more expensive as the low-hanging fruit of low-cost technological improvement options are picked.²³ Automakers, who must nonetheless continue adding technology to improve fuel economy and reduce CO₂ emissions, will either sacrifice other performance attributes or raise the price of vehicles—neither of which is attractive to most consumers.

If fuel prices are high, the value of those gallons may be enough to offset the cost of further fuel economy improvements, but (1) the most recent

reference case projections in the Energy Information Administration's (EIA's) Annual Energy Outlook (AEO 2017 and AEO 2018) do not indicate particularly high fuel prices in the foreseeable future, given underlying assumptions,²⁴ and (2) as the baseline level of fuel economy continues to increase, the marginal cost of the next gallon saved similarly increases with the cost of the technologies required to meet the savings. The following figure illustrates the fact that fuel savings and corresponding avoided costs diminish with increasing fuel economy, showing the same basic pattern as a 2014 illustration developed by EIA.²⁵

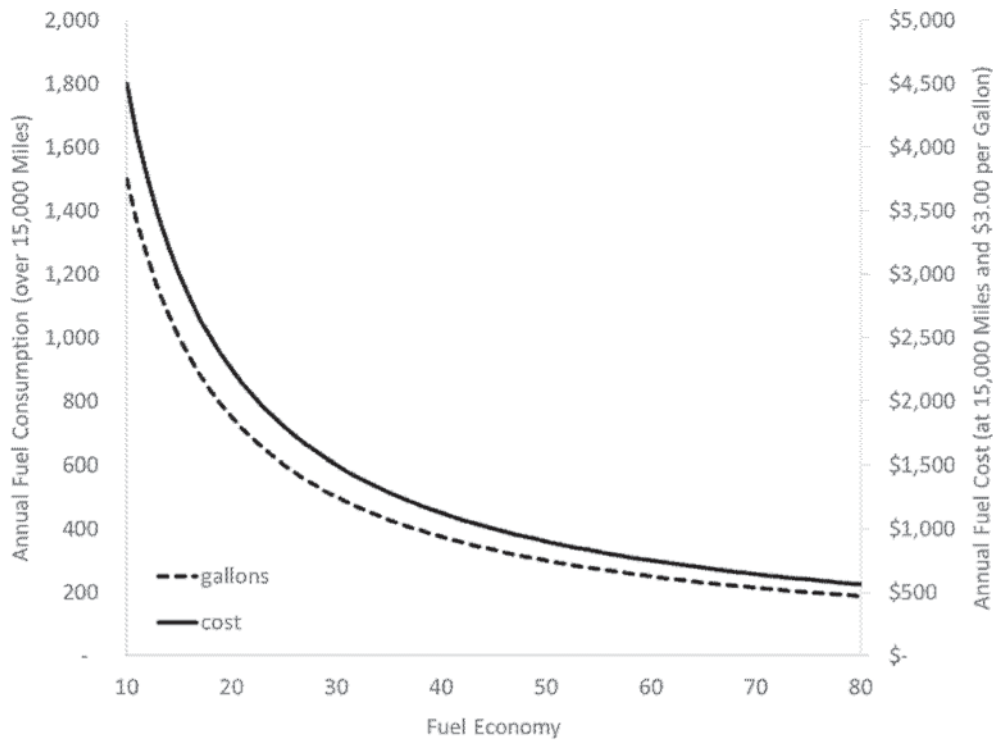


Figure I-1 - Annual Fuel Use and Costs vs. Fuel Economy (at 15,000 Miles and \$3.00 per Gal.)

²² A different vehicle-miles-traveled (VMT) assumption would change the absolute numbers in the example, but would not change the mathematical principles. Today's analysis uses mileage accumulation schedules that average about 15,000 miles annually over the first six years of vehicle operation.

²³ The examples in the text above are presented in mpg because that is a metric which should be readily understandable to most readers, but the example would hold true for grams of CO₂ per mile as well. If a vehicle emits 300 g/mi CO₂, a 20

percent improvement is 60 g/mi, so that the vehicle would emit 240 g/mi. At 180 g/mi, a 20% improvement is 36 g/mi, so the vehicle would get 144 g/mi. In order to continue achieving similarly large (on an absolute basis) emissions reductions, mathematics require the percentage reduction to continue increasing.

²⁴ The U.S. Energy Information Administration (EIA) is the statistical and analytical agency within the U.S. Department of Energy (DOE). EIA is the nation's premiere source of energy information, and every fuel economy rulemaking since 2002 (and

every joint CAFE and CO₂ rulemaking since 2009) has applied fuel price projections from EIA's Annual Energy Outlook (AEO). AEO projections, documentation, and underlying data and estimates are available at <https://www.eia.gov/outlooks/aeo/>.

²⁵ *Today in Energy: Fuel economy improvements show diminishing returns in fuel savings*, U.S. Energy Information Administration (Jul. 11, 2014), <https://www.eia.gov/todayinenergy/detail.php?id=17071>.

This effect is mathematical in nature and long-established, but when combined with relatively low fuel prices potentially through 2050, and the likelihood that a large majority of American consumers could consequently continue to place a higher value on vehicle attributes other than fuel economy, it makes manufacturers' ability to sell light vehicles with ever-higher fuel economy and ever-lower carbon dioxide emissions increasingly difficult. Put more simply, if gas is cheap and each additional improvement saves less gas anyway, most consumers would rather spend their money on attributes other than fuel economy when they are considering a new vehicle purchase, whether that is more safety technology, a better infotainment package, a more powerful powertrain, or other features (or, indeed, they may prefer to spend the savings on something other than automobiles). Manufacturers trying to sell consumers more fuel economy in such circumstances may convince consumers who place weight on efficiency and reduced carbon emissions, but consumers decide for themselves what attributes are worth to them. And while some contend that consumers do not sufficiently consider or value future fuel savings when making vehicle purchasing decisions,²⁶ information regarding the benefits of higher fuel economy has never been made more readily available than today, with a host of online tools and mandatory prominent disclosures on new vehicles on the Monroney label showing fuel savings compared to average vehicles. This is not a question of "if you build it, they will come." Despite the widespread availability of fuel economy information, and despite manufacturers building and marketing vehicles with higher fuel economy and increasing their offerings of hybrid and electric vehicles, in the past several years as gas prices have remained low, consumer preferences have shifted markedly away from higher-fuel-economy smaller and midsize passenger vehicles toward crossovers and truck-based utility vehicles.²⁷ Some consumers plainly

value fuel economy and low CO₂ emissions above other attributes, and thanks in part to CAFE and CO₂ standards, they have a plentiful selection of high-fuel economy and low CO₂-emitting vehicles to choose from, but those consumers represent a relatively small percentage of buyers.

Changed petroleum market has supported a shift in consumer preferences.

In 2012, the agencies projected fuel prices would rise significantly, and the United States would continue to rely heavily upon imports of oil, subjecting the country to heightened risk of price shocks.²⁸ Things have changed significantly since 2012, with fuel prices projected to remain low through 2050. Furthermore, the global petroleum market has shifted dramatically with the United States taking advantage of its own oil supplies through technological advances that allow for cost-effective extraction of shale oil. The U.S. is now the world's largest oil producer and expected to become a net petroleum exporter in the next decade.²⁹

At least partially in response to lower fuel prices, consumers have moved more heavily into crossovers, sport utility vehicles and pickup trucks, than anticipated at the time of the last rulemaking. Because standards are based on footprint and specified separately for passenger cars and light trucks, these shifts do not necessarily pose compliance challenges by themselves, but they tend to reduce the overall average fuel economy rates and

increasing vehicle footprint size in order to get "easier" CAFE and CO₂ standards. This misunderstands, somewhat, how the footprint-based standards work. While it is correct that larger-footprint vehicles have less stringent "targets," the difficulty of compliance rests in how far above or below those vehicles are *as compared to* their targets, and more specifically, whether the manufacturer is selling so many vehicles that are far short of their targets that they cannot average out to compliant levels through other vehicles sold that beat their targets. For example, under the CAFE program, a manufacturer building a fleet of larger-footprint vehicles may have an objectively lower mpg-value compliance obligation than a manufacturer building a more mixed fleet, but it may still be more challenging for the first manufacturer to reach its compliance obligation if it is selling only very-low-mpg variants at any given footprint. There is only so much that increasing footprint makes it "easier" for a manufacturer to reach compliance.

²⁶ The 2012 final rule analysis relied on the Energy Information Administration's Annual Energy Outlook 2012 Early Release, which assumed significantly higher fuel prices than the AEO 2017 (or AEO 2018) currently available. See 77 FR 62624, 62715 (Oct. 15, 2012) for the 2012 final rule's description of the fuel price estimates used.

²⁹ Annual Energy Outlook 2018, U.S. Energy Information Administration, at 53 (Feb. 6, 2018), <https://www.eia.gov/outlooks/aeo/pdf/AEO2018.pdf>.

increase the overall average CO₂ emission rates of the new vehicle fleet. Consumers are also demonstrating a preference for more powerful engines and vehicles with higher seating positions and ride height (and accompanying mass increase relative to footprint)³⁰—all of which present challenges for achieving increased fuel economy levels and lower CO₂ emission rates.

The Consequence of Unreasonable Fuel Economy and CO₂ Standards: Increased vehicle prices keep consumers in older, dirtier, and less safe vehicles.

Consumers tend to avoid purchasing things that they neither want or need. The analysis in today's proposal moves closer to being able to represent this fact through an improved model for vehicle scrappage rates. While neither this nor a sales response model, also included in today's analysis, nor the combination of the two, are consumer choice models, today's analysis illustrates market-wide impacts on the sale of new vehicles and the retention of used vehicles. Higher vehicle prices, which result from more-stringent fuel economy standards, have an effect on consumer purchasing decisions. As prices increase, the market-wide incentive to extract additional travel from used vehicles increases. The average age of the in-service fleet has been increasing, and when fleet turnover slows, not only does it take longer for fleet-wide fuel economy and CO₂ emissions to improve, but also safety improvements, criteria pollutant emissions improvements, many other vehicle attributes that also provide societal benefits take longer to be reflected in the overall U.S. fleet as well because of reduced turnover. Raising vehicle prices too far, too fast, such as through very stringent fuel economy and CO₂ emissions standards (especially considering that, on a fleet-wide basis, new vehicle sales and turnover do not appear strongly responsive to fuel economy), has effects beyond simply a slowdown in sales. Improvements over time have better longer-term effects simply by not alienating consumers, as compared to great leaps forward that drive people out of the new car market or into vehicles that do not meet their needs. The industry has achieved tremendous gains in fuel economy over the past decade, and these increases will continue at least through 2020.

Along with these gains, there have also been tremendous increases in vehicle prices, as new vehicles become increasingly unaffordable—with the average new vehicle transaction price

³⁰ See *id.*

recently exceeding \$36,000—up by more than \$3,000 since 2014 alone.³¹ In fact, a recent independent study indicated that the average new car price is unaffordable to median-income families in every metropolitan region in the United States except one: Washington, DC.³² That analysis used the historically accepted approach that consumers should make a down-payment of at least 20% of a vehicle's purchase price, finance for no longer than four years, and make payments of 10% or less of the consumer's annual income to car payments and insurance. But the market looks nothing like that these days, with average financing terms of 68 months, and an increasing proportion exceeding 72 or even 84 months.³³ Longer financing terms may

³¹ See, e.g., *Average New-Car Prices Rise Nearly 4 Percent for January 2018 On Shifting Sales Mix, According To Kelley Blue Book*, Kelley Blue Book, <https://mediaroom.kbb.com/2018-02-01-Average-New-Car-Prices-Rise-Nearly-4-Percent-For-January-2018-On-Shifting-Sales-Mix-According-To-Kelley-Blue-Book> (last accessed Jun. 15, 2018).

³² Bell, C. *What's an 'affordable' car where you live? The answer may surprise you*, Bankrate.com (Jun. 28, 2017), available at <https://www.bankrate.com/auto/new-car-affordability-survey/> (last accessed Jun. 15, 2018).

³³ *Average Auto Loan Interest Rates: 2018 Facts and Figures*, ValuePenguin, available at <https://>

allow a consumer to keep their monthly payment affordable but can have serious potential financial consequences. Longer-term financing leads (generally) to higher interest rates, larger finance charges and total consumer costs, and a longer period of time with negative equity. In 2012, the agencies expected prices to increase under the standards announced at that time. The agencies estimated that, compared to a continuation of the model year 2016 standards, the standards issued through model year 2025 would eventually increase average prices by about \$1,500–\$1,800.^{34 35 36} Circumstances have

www.valuepenguin.com/auto-loans/average-auto-loan-interest-rates (last accessed Jun. 15, 2018).

³⁴ 77 FR 62624, 62666 (Oct. 15, 2012).

³⁵ The \$1,500 figure reported in 2012 by NHTSA reflected application of carried-forward credits in model year 2025, rather than an achieved CAFE level that could be sustainably compliant beyond 2025 (with standards remaining at 2025 levels). As for the 2016 draft TAR, NHTSA has since updated its modeling approach to extend far enough into the future that any unsustainable credit deficits are eliminated. Like analyses published by EPA in 2016, 2017, and early 2018, the \$1,800 figure reported in 2012 by EPA did not reflect either simulation of manufacturers' multiyear plans to progress from the initial MY 2008 fleet to the MY 2025 fleet or any accounting for manufacturers' potential application of banked credits. Today's analysis of both CAFE and CO₂ standards accounts

changed, the analytical methods and inputs have been updated (including updates to address issues still present in analyses published in 2016, 2017, and early 2018), and today, the analysis suggests that, compared to the proposed standards today, the previously-issued standards would increase average vehicle prices by about \$2,100. While today's estimate is similar in magnitude to the 2012 estimate, it is relative to a baseline that includes increases in stringency between MY 2016 and MY 2020. Compared to leaving vehicle technology at MY 2016 levels, today's analysis shows the previously-issued standards through model year 2025 could eventually increase average vehicle prices by approximately \$2,700. A pause in continued increases in fuel economy standards, and cost increases attributable thereto, is appropriate.

explicitly for multiyear planning and credit banking.

³⁶ While EPA did not refer to the reported \$1,800 as an estimate of the increase in average prices, because EPA did not assume that manufacturers would reduce profit margins, the \$1,800 estimate is appropriately interpreted as an estimate of the average increase in vehicle prices.

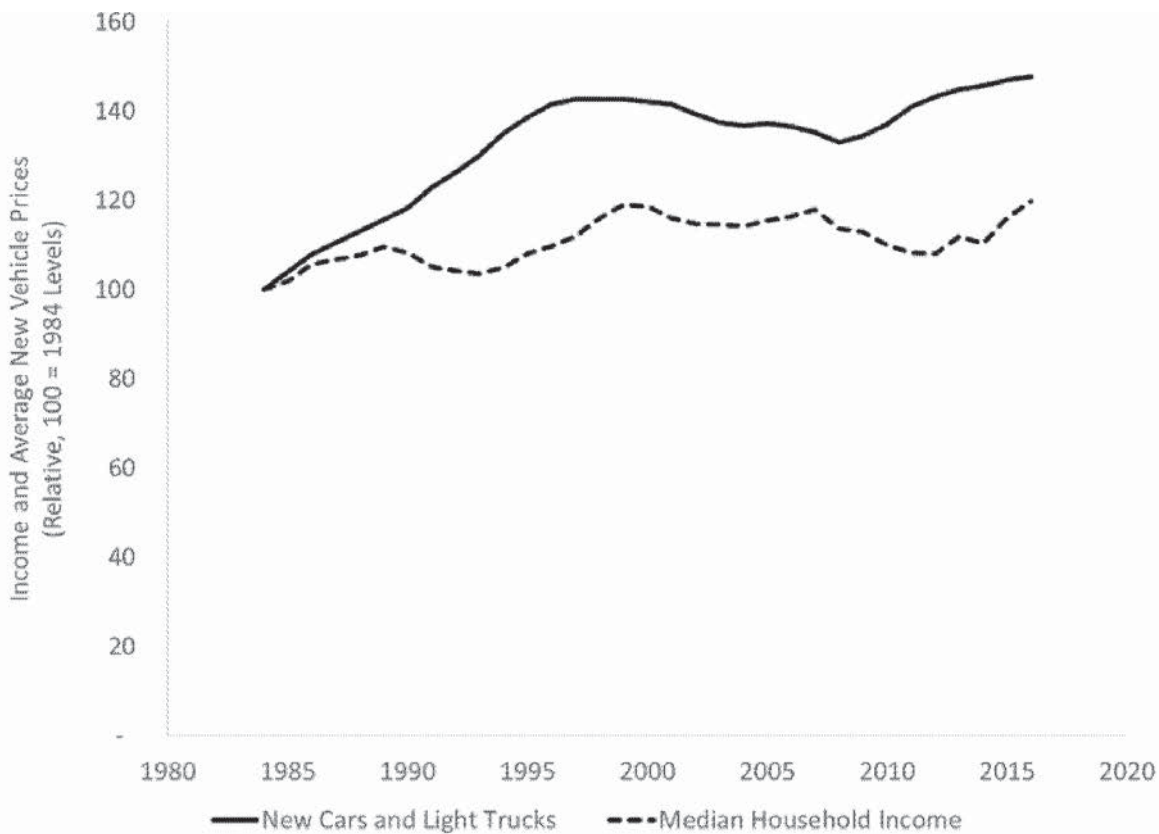


Figure I-2 - New Vehicle Prices and Median Household Income (Indexed, 1984 Levels = 100)³⁷

Preferred Alternative

For all of these reasons, the agencies are proposing to maintain the MY 2020 fuel economy and CO₂ emissions standards for MYs 2021–2026. Our goal is to establish standards that promote both energy conservation and safety, in light of what is technologically feasible and economically practicable, as directed by Congress.

Energy Conservation

EPCA requires that NHTSA, when determining the maximum feasible levels of CAFE standards, consider the need of the Nation to conserve energy. However, EPCA also requires that NHTSA consider other factors, such as

³⁷ Data on new vehicle prices are from U.S. Bureau of Economic Analysis, National Income and Product Accounts, Supplemental Table 7.2.5S, Auto and Truck Unit Sales, Production, Inventories, Expenditures, and Price (<https://www.bea.gov/iTable/iTable.cfm?reqid=19&step=2#reqid=19&step=3&isuri=1&1921=underlying&1903=2055>, last accessed Jul. 20, 2018). Median Household Income data are from U.S. Census Bureau, Table A-1, Households by Total Money Income, Race, and Hispanic Origin of Householder: 1967 to 2016 (<https://www.census.gov/data/tables/2017/demo/income-poverty/p60-259.html>, last accessed Jul. 20, 2018).

technological feasibility and economic practicability. The analysis suggests that, compared to the standards issued previously for MYs 2021–2025, today’s proposed rule will eventually (by the early 2030s) increase U.S. petroleum consumption by about 0.5 million barrels per day—about two to three percent of projected total U.S. consumption. While significant, this additional petroleum consumption is, from an economic perspective, dwarfed by the cost savings also projected to result from today’s proposal, as indicated by the consideration of net benefits appearing below.

Safety Benefits From Preferred Alternative

Today’s proposed rule is anticipated to prevent more than 12,700 on-road fatalities³⁸ and significantly more injuries as compared to the standards set forth in the 2012 final rule over the lifetimes of vehicles as more new, safer vehicles are purchased than the current (and augural) standards. A large portion of these safety benefits will come from

³⁸ Over the lifetime of vehicles through MY 2029.

improved fleet turnover as more consumers will be able to afford newer and safer vehicles.

Recent NHTSA analysis shows that the proportion of passengers killed in a vehicle 18 or more model years old is nearly double that of a vehicle three model years old or newer.³⁹ As the average car on the road is approaching 12 years old, apparently the oldest in our history,⁴⁰ major safety benefits will occur by reducing fleet age. Other safety benefits will occur from other areas such as avoiding the increased driving

³⁹ Passenger Vehicle Occupant Injury Severity by Vehicle Age and Model Year in Fatal Crashes, Traffic Safety Facts Research Note, DOT HS 812 528. Washington, DC: National Highway Traffic Safety Administration. April 2018.

⁴⁰ See, e.g., IHS Markit, *Vehicles Getting Older: Average Age of Light Cars and Trucks in U.S. Rises Again in 2016 to 11.5 years*, IHS Markit Says, IHS Markit (Nov. 22, 2016), <http://news.ihsmarket.com/press-release/automotive/vehicles-getting-older-average-age-light-cars-and-trucks-us-rises-again-2016> (“... consumers are continuing the trend of holding onto their vehicles longer than ever. As of the end of 2015, the average length of ownership measured a record 79.3 months, more than 1.5 months longer than reported in the previous year. For used vehicles, it is nearly 66 months. Both are significantly longer lengths of ownership since the same measure a decade ago.”).

that would otherwise result from higher fuel efficiency (known as the rebound effect) and avoiding the mass reductions in passenger cars that might otherwise be required to meet the standards established in 2012.⁴¹ Together these and other factors lead to estimated annual fatalities under the proposed standards that are significantly reduced⁴² relative to those that would occur under current (and augural) standards.

The Preferred Alternative Would Have Negligible Environmental Impacts on Air Quality

Improving fleet turnover will result in consumers getting into newer and cleaner vehicles, accelerating the rate at which older, more-polluting vehicles are removed from the roadways. Also, reducing fuel economy (relative to levels that would occur under previously-issued standards) would increase the marginal cost of driving newer vehicles, reducing mileage accumulated by those vehicles, and

reducing corresponding emissions. On the other hand, increasing fuel consumption would increase emissions resulting from petroleum refining and related “upstream” processes. Our analysis shows that none of the regulatory alternatives considered in this proposal would noticeably impact net emissions of smog-forming or other “criteria” or toxic air pollutants, as illustrated by the following graph. That said, the resultant tailpipe emissions reductions should be especially beneficial to highly trafficked corridors.

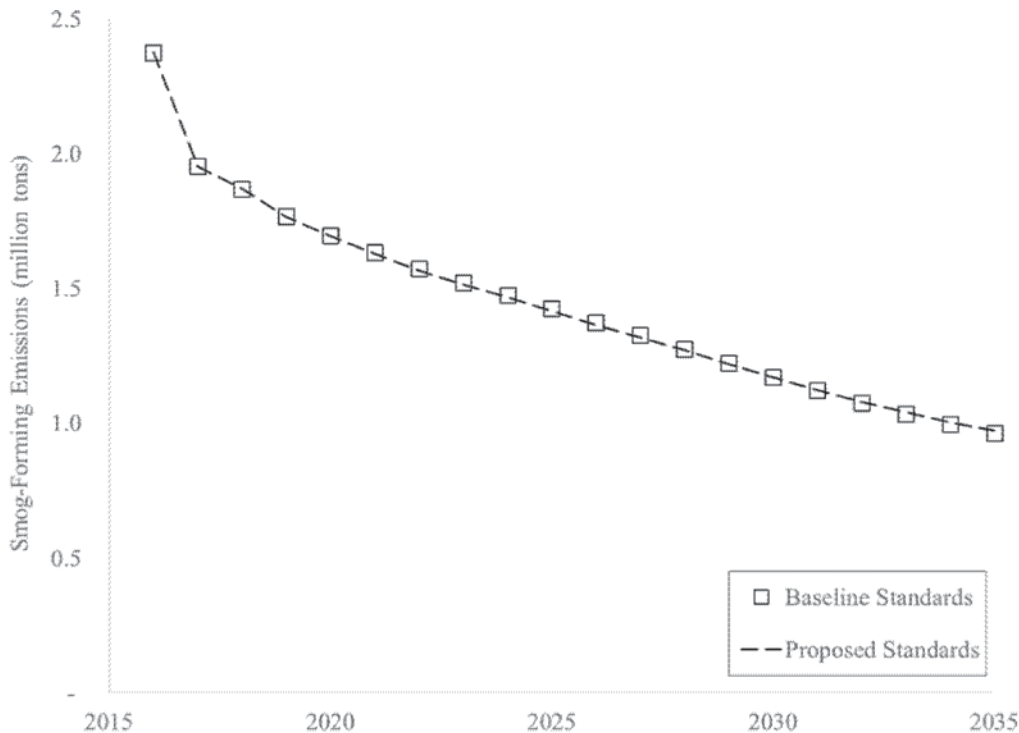


Figure I-3 - Annual Smog-Forming Emissions under Baseline and Proposed Standards

Climate Change Impacts From Preferred Alternative

The estimated effects of this proposal in terms of fuel savings and CO₂ emissions, again perhaps somewhat counter-intuitively, is relatively small as compared to the 2012 final rule.⁴³

NHTSA’s Environmental Impact Statement performed for this rulemaking shows that the preferred alternative would result in 3/1,000ths of a degree Celsius increase in global average temperatures by 2100, relative to the standards finalized in 2012. On a net CO₂ basis, the results are similarly

minimal. The following graph compares the estimated atmospheric CO₂ concentration (789.76 ppm) in 2100 under the proposed standards to the estimated level (789.11 ppm) under the standards set forth in 2012—or an 8/100ths of a percentage increase:

⁴¹The agencies are specifically requesting comment on the appropriateness and level of the effects of the rebound effect. The agencies also seek comment on changes as compared to the 2012 modeling relating to mass reduction assumptions. During that rulemaking, the analysis limited the amount of mass reduction assumed for certain vehicles, which impacted the results regarding potential for adverse safety effects, even while acknowledging that manufacturers would not

necessarily choose to avoid mass reductions in the ways that the agencies assumed. See, 77 FR 623624, 62763 (Oct. 15, 2012). By choosing where and how to limit assumed mass reduction, the 2012 rule’s safety analysis reduced the projected apparent risk to safety associated with aggressive fuel economy and CO₂ targets. That specific assumption has been removed for today’s analysis.

⁴²The reduction in annual fatalities varies each calendar year, averaging 894 fewer fatalities

annually for the CAFE program and 1,150 fewer fatalities for the CO₂ program over calendar years 2036–2045.

⁴³Counter-intuitiveness is relative, however. The estimated effects of the 2012 final rule on climate were similarly small in magnitude, as shown in the Final EIS accompanying that rule and available on NHTSA’s website.

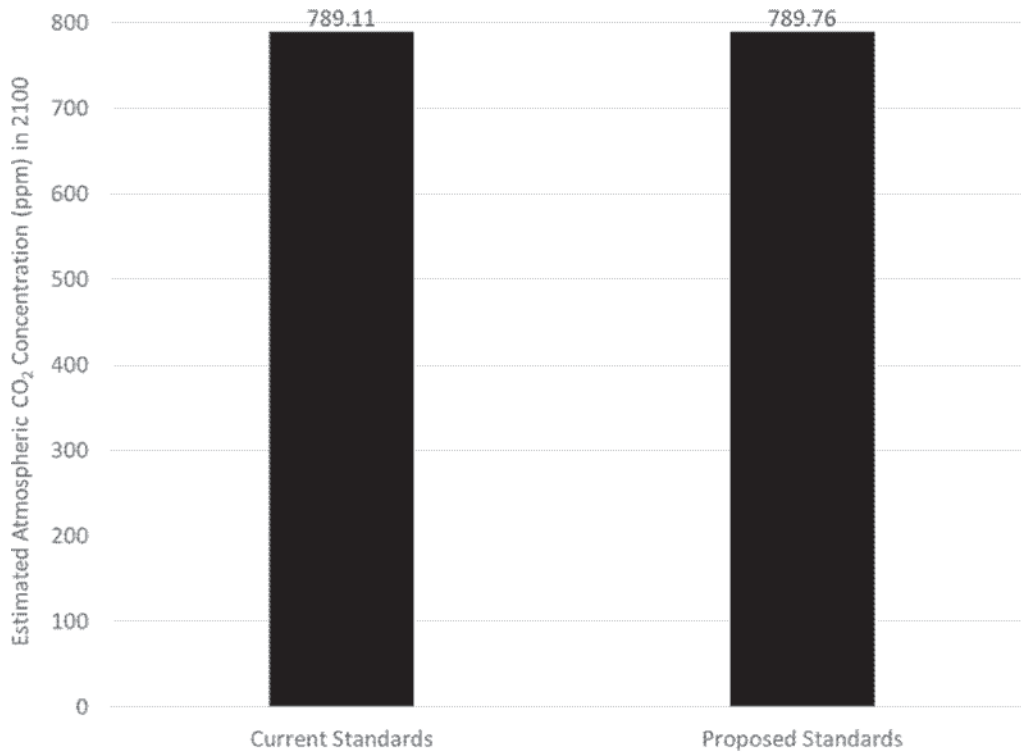


Figure I-4 - Estimated Atmospheric CO₂ Concentration in 2100

Net Benefits From Preferred Alternative

Maintaining the MY 2020 curves for MYs 2021–2026 will save American consumers, the auto industry, and the public a considerable amount of money

as compared to if EPA retained the previously-set CO₂ standards and NHTSA finalized the augural standards. This was identified as the preferred alternative, in part, because it maximizes net benefits compared to the

other alternatives analyzed, recognizing the statutory considerations for both agencies. Comment is sought on whether this is an appropriate basis for selection.

Table I-4 - Estimated 1977-2029 Model Year Costs, Benefits, and Net Benefits under the Preferred Alternative (Billions of 2016\$)

Cumulative Across MYs 1977-2029				
	Totals		Annualized	
	3% Discount Rate	7% Discount Rate	3% Discount Rate	7% Discount Rate
<i>CAFE Standards:</i>				
Costs	-502.1	-335.3	-19.2	-24.2
Benefits	-325.8	-203.8	-12.4	-14.7
Net Benefits	176.3	131.5	6.7	9.5
<i>CO₂ Standards:</i>				
Costs	-563.3	-367.1	-21.5	-26.5
Benefits	-362.6	-226.5	-13.9	-16.3
Net Benefits	200.7	140.6	7.7	10.1

These estimates, reported as changes relative to impacts under the standards issued in 2012, account for impacts on vehicles produced during model years 2016–2029, as well as (through changes in utilization) vehicles produced in earlier model years, throughout those vehicles’ useful lives. Reported values are in 2016 dollars, and reflect three-percent and seven-percent discount rates. Under CAFE standards, costs are estimated to decrease by \$502 billion overall at a three-percent discount rate (\$335 billion at a seven-percent discount rate); benefits are estimated to decrease by \$326 billion at a three-percent discount rate (\$204 billion at a seven-percent discount rate). Thus, net benefits are estimated to increase by \$176 billion at a three-percent discount rate and \$132 billion at a seven-percent discount rate. The estimated impacts under CO₂ standards are similar, with net benefits estimated to increase by \$201 billion at a three-percent discount rate and \$141 billion at a seven-percent discount rate.

Compliance Flexibilities

This proposal also seeks comment on a variety of changes to NHTSA’s and EPA’s compliance programs for CAFE and CO₂ as well as related programs. Compliance flexibilities can generally be grouped into two categories. The first category are those compliance flexibilities that reduce unnecessary compliance costs and provide for a more efficient program. The second category of compliance flexibilities are those that distort the market—such as by incentivizing the implementation of one type of technology by providing credit for compliance in excess of real-world fuel savings.

Both programs provide for the generation of credits based upon fleet-wide over-compliance, provide for adjustments to the test measured value of each individual vehicle based upon the implementation of certain fuel saving technologies, and provide additional incentives for the implementation of certain preferred technologies (regardless of actual fuel savings). Auto manufacturers and others have petitioned for a host of additional

adjustment- and incentive-type flexibilities, where there is not always consumer interest in the technologies to be incentivized nor is there necessarily clear fuel-saving and emissions-reducing benefit to be derived from that incentivization. The agencies seek comment on all of those requests as part of this proposal.

Over-compliance credits, which can be built up in part through use of the above-described per-vehicle adjustments and incentives, can be saved and either applied retroactively to accounts for previous non-compliance, or carried forward to mitigate future non-compliance. Such credits can also be traded to other automakers for cash or for other credits for different fleets. But such trading is not pursued openly. Under the CAFE program, the public is not made aware of inter-automaker trades, nor are shareholders. And even the agencies are not informed of the price of credits. With the exception of statutorily-mandated credits, the agencies seek comment on all aspects of the current system. The agencies are particularly interested in comments on flexibilities that may distort the market.

The agencies seek comment as to whether some adjustments and non-statutory incentives and other provisions should be eliminated and stringency levels adjusted accordingly. In general, well-functioning banking and trading provisions increase market efficiency and reduce the overall costs of compliance with regulatory objectives. The agencies request comment on whether the current system as implemented might need improvements to achieve greater efficiencies. We seek comment on specific programmatic changes that could improve compliance with current standards in the most efficient way, ranging from requiring public disclosure of some or all aspects of credit trades, to potentially eliminating credit trading in the CAFE program. We request commenters to provide any data, evidence, or existing literature to help agency decision-making.

One National Standard

Setting appropriate and maximum feasible fuel economy and tailpipe CO₂ emissions standards requires regulatory efficiency. This proposal addresses a fundamental and unnecessary complication in the currently-existing regulatory framework, which is the regulation of GHG emissions from passenger cars and light trucks by the State of California through its GHG standards and Zero Emission Vehicle (ZEV) mandate and subsequent adoption of these standards by other States. Both EPCA and the CAA preempt State regulation of motor vehicle emissions (in EPCA's case, standards that are related to fuel economy standards). The CAA gives EPA the authority to waive preemption for California under certain circumstances. EPCA does not provide for a waiver of preemption under any circumstances. In short, the agencies propose to maintain one national standard—a standard that is set exclusively by the Federal government.

Proposed Withdrawal of California's Clean Air Act Preemption Waiver

EPA granted a waiver of preemption to California in 2013 for its "Advanced Clean Car" regulations, composed of its GHG standards, its "Low Emission Vehicle (LEV)" program and the ZEV program,⁴⁴ and, as allowed under the CAA, a number of other States adopted California's standards.⁴⁵ The CAA states that EPA shall not grant a waiver of preemption if EPA finds that California's determination that its

standards are, in the aggregate, at least as protective of public health and welfare as applicable Federal standards, is arbitrary and capricious; that California does not need its own standards to meet compelling or extraordinary conditions; or that such California standards and accompanying enforcement procedures are not consistent with Section 202(a) of the CAA. In this proposal, EPA is proposing to withdraw the waiver granted to California in 2013 for the GHG and ZEV requirements of its Advanced Clean Cars program, in light of all of these factors.

Attempting to solve climate change, even in part, through the Section 209 waiver provision is fundamentally different from that section's original purpose of addressing smog-related air quality problems. When California was merely trying to solve its air quality issues, there was a relatively-straightforward technology solution to the problems, implementation of which did not affect how consumers lived and drove. Section 209 allowed California to pursue additional reductions to address its notorious smog problems by requiring more stringent standards, and allowed California and other States that failed to comply with Federal air quality standards to make progress toward compliance. Trying to reduce carbon emissions from motor vehicles in any significant way involves changes to the entire vehicle, not simply the addition of a single or a handful of control technologies. The greater the emissions reductions are sought, the greater the likelihood that the characteristics and capabilities of the vehicle currently sought by most American consumers will have to change significantly. Yet, even decades later, California continues to be in widespread non-attainment with Federal air quality standards.⁴⁶ In the past decade, California has disproportionately focused on GHG emissions. Parts of California have a real and significant local air pollution problem, but CO₂ is not part of that local problem.

California's Tailpipe CO₂ Emissions Standards and ZEV Mandate Conflict With EPCA

Moreover, California regulation of tailpipe CO₂ emissions, both through its GHG standards and ZEV program, conflicts directly and indirectly with EPCA and the CAFE program. EPCA expressly preempts State standards

⁴⁶ See California Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants, current as of May 31, 2018, at https://www3.epa.gov/airquality/greenbook/anayo_ca.html (last accessed June 15, 2018).

related to fuel economy. Tailpipe CO₂ standards, whether in the form of fleet-wide CO₂ limits or in the form of requirements that manufacturers selling vehicles in California sell a certain number of low- and no-tailpipe-CO₂ emissions vehicles as part of their overall sales, are unquestionably related to fuel economy standards. Standards that control tailpipe CO₂ emissions are *de facto* fuel economy standards because CO₂ is a direct and inevitable byproduct of the combustion of carbon-based fuels to make energy, and the vast majority of the energy that powers passenger cars and light trucks comes from carbon-based fuels.

Improving fuel economy means getting the vehicle to go farther on a gallon of gas; a vehicle that goes farther on a gallon of gas produces less CO₂ per unit of distance; therefore, improving fuel economy necessarily reduces tailpipe CO₂ emissions, and reducing CO₂ emissions necessarily improves fuel economy. EPCA therefore necessarily preempts California's Advanced Clean Cars program to the extent that it regulates or prohibits tailpipe CO₂ emissions. Section VI of this proposal, below, discusses the CAA waiver and EPCA preemption in more detail.

Eliminating California's regulation of fuel economy pursuant to Congressional direction will provide benefits to the American public. The automotive industry will, appropriately, deal with fuel economy standards on a national basis—eliminating duplicative regulatory requirements. Further, elimination of California's ZEV program will allow automakers to develop such vehicles in response to consumer demand instead of regulatory mandate. This regulatory mandate has required automakers to spend tens of billions of dollars to develop products that a significant majority of consumers have not adopted, and consequently to sell such products at a loss. All of this is paid for through cross subsidization by increasing prices of other vehicles not just in California and other States that have adopted California's ZEV mandate, but throughout the country.

Request for Comment

The agencies look forward to all comments on this proposal, and wish to emphasize that obtaining public input is extremely important to us in selecting from among the alternatives in a final rule. While the agencies and the Administration met with a variety of stakeholders prior to issuance of this proposal, those meetings have not resulted in a predetermined final rule outcome. The Administrative Procedure Act requires that agencies provide the

⁴⁴ 78 FR 2112 (Jan. 9, 2013).

⁴⁵ CAA Section 177, 42 U.S.C. 7507.

public with adequate notice of a proposed rule followed by a meaningful opportunity to comment on the rule's content. The agencies are committed to following that directive.

II. Technical Foundation for NPRM Analysis

A. Basics of CAFE and CO₂ Standards Analysis

The agencies' analysis of CAFE and CO₂ standards involves two basic elements: first, estimating ways each manufacturer could potentially respond to a given set of standards in a manner that considers potential consumer response; and second, estimating various impacts of those responses. Estimating manufacturers' potential responses involves simulating manufacturers' decision-making processes regarding the year-by-year application of fuel-saving technologies to specific vehicles. Estimating impacts involves calculating resultant changes in new vehicle costs, estimating a variety of costs (e.g., for fuel) and effects (e.g., CO₂ emissions from fuel combustion) occurring as vehicles are driven over their lifetimes before eventually being scrapped, and estimating the monetary value of these effects. Estimating impacts also involves consideration of the response of consumers—e.g., whether consumers will purchase the vehicles and in what quantities. Both of these basic analytical elements involve the application of many analytical inputs.

The agencies' analysis uses the CAFE model to estimate manufacturers' potential responses to new CAFE and CO₂ standards and to estimate various impacts of those responses. The model makes use of many inputs, values of which are developed *outside* of the model and not *by* the model. For example, the model applies fuel prices; it does not estimate fuel prices. The model does not determine the form or stringency of the standards; instead, the model applies inputs specifying the form and stringency of standards to be analyzed and produces outputs showing effects of manufacturers working to meet those standards, which become the basis for comparing between different potential stringencies.

DOT's Volpe National Transportation Systems Center (often simply referred to as the "Volpe Center") develops, maintains, and applies the model for NHTSA. NHTSA has used the CAFE model to perform analyses supporting every CAFE rulemaking since 2001, and the 2016 rulemaking regarding heavy-duty pickup and van fuel consumption

and GHG emissions also used the CAFE model for analysis.⁴⁷

DOT recently arranged for a formal peer review of the model. In general, reviewers' comments strongly supported the model's conceptual basis and implementation, and commenters provided several specific recommendations. DOT staff agreed with many of these recommendations and have worked to implement them wherever practicable. Implementing some of them would require considerable further research, development, and testing, and will be considered going forward. For a handful of other recommendations, DOT staff disagreed, often finding the recommendations involved considerations (e.g., other policies, such as those involving fuel taxation) beyond the model itself or were based on concerns with inputs rather than how the model itself functioned. A report available in the docket for this rulemaking presents peer reviewers' detailed comments and recommendations, and provides DOT's detailed responses.⁴⁸

The agencies also use four DOE and DOE-sponsored models to develop inputs to the CAFE model, including three developed and maintained by DOE's Argonne National Laboratory. The agencies use the DOE Energy Information Administration's (EIA's) National Energy Modeling System (NEMS) to estimate fuel prices,⁴⁹ and used Argonne's Greenhouse gases, Regulated Emissions, and Energy use in Transportation (GREET) model to estimate emissions rates from fuel production and distribution processes.⁵⁰ DOT also sponsored DOE/Argonne to use their Autonomie full-vehicle simulation system to estimate the fuel economy impacts for roughly a million combinations of technologies and vehicle types.^{51 52}

⁴⁷ While this rulemaking employed the CAFE model for analysis, EPA and DOT used different versions of the CAFE model for establishing their respective standards, and EPA also used the EPA MOVES model. See 81 FR 73478, 73743 (Oct. 25, 2016).

⁴⁸ Docket No. NHTSA–2018–0067.

⁴⁹ See https://www.eia.gov/outlooks/aeo/info/nems_archive.php. Today's notice uses fuel prices estimated using the Annual Energy Outlook (AEO) 2017 version of NEMS (see <https://www.eia.gov/outlooks/archive/aeo17/> and <https://www.eia.gov/outlooks/aeo/data/browser/#/?id=3-AEO2017&cases=ref2017&sourcekey=0>).

⁵⁰ Information regarding GREET is available at <https://greet.es.anl.gov/index.php>. Availability of NEMS is discussed at https://www.eia.gov/outlooks/aeo/info/nems_archive.php. Today's notice uses fuel prices estimated using the AEO 2017 version of NEMS.

⁵¹ As part of the Argonne simulation effort, individual technology combinations simulated in Autonomie were paired with Argonne's BatPAC

EPA developed two models after 2009, referred to as the "ALPHA" and "OMEGA" models, which provide some of the same capabilities as the Autonomie and CAFE models. EPA applied the OMEGA model to conduct analysis of GHG standards promulgated in 2010 and 2012, and the ALPHA and OMEGA models to conduct analysis discussed in the above-mentioned 2016 Draft TAR and Proposed and Final Determinations regarding standards beyond 2021. In an August 2017 notice, the agencies requested comments on, among other things, whether EPA should use alternative methodologies and modeling, including DOE/Argonne's Autonomie full-vehicle simulation tool and DOT's CAFE model.⁵³

Having reviewed comments on the subject and having considered the matter fully, the agencies have determined it is reasonable and appropriate to use DOE/Argonne's model for full-vehicle simulation, and to use DOT's CAFE model for analysis of regulatory alternatives. EPA interprets Section 202(a) of the CAA as giving the agency broad discretion in how it develops and sets GHG standards for light-duty vehicles. Nothing in Section 202(a) mandates that EPA use any specific model or set of models for analysis of potential CO₂ standards for light-duty vehicles. EPA weighs many factors when determining appropriate levels for CO₂ standards, including the cost of compliance (see Section 202(a)(2)), lead time necessary for compliance (also Section 202(a)(2)), safety (see *NRDC v. EPA*, 655 F.2d 318, 336 n. 31 (D.C. Cir. 1981) and other impacts on consumers,⁵⁴ and energy impacts associated with use of the technology.⁵⁵ Using the CAFE model

model to estimate the battery cost associated with each technology combination based on characteristics of the simulated vehicle and its level of electrification. Information regarding Argonne's BatPAC model is available at <http://www.cse.anl.gov/batpac/>.

⁵² Additionally, the impact of engine technologies on fuel consumption, torque, and other metrics was characterized using GT POWER simulation modeling in combination with other engine modeling that was conducted by IAV Automotive Engineering, Inc. (IAV). The engine characterization "maps" resulting from this analysis were used as inputs for the Autonomie full-vehicle simulation modeling. Information regarding GT Power is available at <https://www.gtisoft.com/gt-suite-applications/propulsion-systems/gt-power-engine-simulation-software>.

⁵³ 82 FR 39533 (Aug. 21, 2017).

⁵⁴ Since its earliest Title II regulations, EPA has considered the safety of pollution control technologies. See 45 FR 14496, 14503 (1980).

⁵⁵ See *George E. Warren Corp. v. EPA*, 159 F.3d 616, 623–624 (D.C. Cir. 1998) (ordinarily permissible for EPA to consider factors not specifically enumerated in the Act).

different manufacturers, and assumptions about the cost of standards to consumers and consumers' valuation of fuel economy, among other things.

Prior to the MYs 2005–2007 rulemaking under the non-attribute-based (fixed value) CAFE standards, NHTSA generally sought to ensure the economic practicability of standards in part by setting them at or near the capability of the “least capable manufacturer” with a significant share of the market, *i.e.*, typically the manufacturer whose fleet mix was, on average, the largest and heaviest, generally having the highest capacity and capability so as to not limit the availability of those types of vehicles to consumers. In the first several rulemakings establishing attribute-based standards, NHTSA applied marginal cost-benefit analysis, considering both overall societal impacts and overall consumer impacts. Whether the standards maximize net benefits has thus been a touchstone in the past for NHTSA's consideration of economic practicability. Executive Order 12866, as amended by Executive Order 13563, states that agencies should “select, in choosing among alternative regulatory approaches, those approaches that maximize net benefits . . .” In practice, however, agencies, including NHTSA, must consider situations in which the modeling of net benefits does not capture all of the relevant considerations of feasibility. Therefore, as in past rulemakings, NHTSA is considering net societal impacts, net consumer impacts, and other related elements in the consideration of economic practicability.

NHTSA's consideration of economic practicability depends on a number of elements. Expected availability of capital to make investments in new technologies matters; manufacturers' expected ability to sell vehicles with certain technologies matters; likely consumer choices matter and so forth. NHTSA's analysis of the impacts of this proposal incorporates assumptions to capture aspects of consumer preferences, vehicle attributes, safety, and other elements relevant to an impacts estimate; however, it is difficult to capture every such constraint. Therefore, it is well within the agency's discretion to deviate from the level at which modeled net benefits are maximized if the agency concludes that that level would not represent the maximum feasible level for future CAFE

consumers do not want, or to widely apply technologies before they are ready to be widespread, NHTSA believes that these standards could potentially be beyond economically practicable.

standards. Economic practicability is complex, and like the other factors must also be considered in the context of the overall balancing and EPCA's overarching purpose of energy conservation. Depending on the conditions of the industry and the assumptions used in the agency's analysis of alternative standards, NHTSA could well find that standards that maximize net benefits, or that are higher or lower, could be at the limits of economic practicability, and thus potentially the maximum feasible level, depending on how the other factors are balanced.

While we discuss safety as a separate consideration, NHTSA also considers safety as closely related to, and in some circumstances a subcomponent of economic practicability. On a broad level, manufacturers have finite resources to invest in research and development. Investment into the development and implementation of fuel saving technology necessarily comes at the expense of investing in other areas such as safety technology. On a more direct level, when making decisions on how to equip vehicles, manufacturers must balance cost considerations to avoid pricing further consumers out of the market. As manufacturers add technology to increase fuel efficiency, they may decide against installing new safety equipment to reduce cost increases. And as the price of vehicles increase beyond the reach of more consumers, such consumers continue to drive or purchase older, less safe vehicles. In assessing practicability, NHTSA also considers the harm to the nation's economy caused by highway fatalities and injuries.

(3) The Effect of Other Motor Vehicle Standards of the Government on Fuel Economy

“The effect of other motor vehicle standards of the Government on fuel economy” involves analysis of the effects of compliance with emission, safety, noise, or damageability standards on fuel economy capability and thus on average fuel economy. In many past CAFE rulemakings, NHTSA has said that it considers the adverse effects of other motor vehicle standards on fuel economy. It said so because, from the CAFE program's earliest years⁴⁰⁴ until recently, the effects of such compliance on fuel economy capability over the history of the CAFE program have been negative ones. For example, safety standards that have the effect of

⁴⁰⁴ 42 FR 63184, 63188 (Dec. 15, 1977). *See also* 42 FR 33534, 33537 (June 30, 1977).

increasing vehicle weight thereby lower fuel economy capability, thus decreasing the level of average fuel economy that NHTSA can determine to be feasible. NHTSA has considered the additional weight that it estimates would be added in response to new safety standards during the rulemaking timeframe.⁴⁰⁵ NHTSA has also accounted for EPA's “Tier 3” standards for criteria pollutants in its estimates of technology effectiveness.⁴⁰⁶

In the 2012 final rule establishing CAFE standards for MYs 2017–2021, NHTSA also discussed whether EPA GHG standards and California GHG standards should be considered and accounted for as “other motor vehicle standards of the Government.” NHTSA recognized that “To the extent the GHG standards result in increases in fuel economy, they would do so almost exclusively as a result of inducing manufacturers to install the same types of technologies used by manufacturers in complying with the CAFE standards.”⁴⁰⁷ NHTSA concluded that “the agency had already considered EPA's [action] and the harmonization benefits of the National Program in developing its own [action],” and that “no further action was needed.”⁴⁰⁸

Considering the issue afresh in this proposal, and looking only at the words in the statute, obviously EPA's GHG standards applicable to light-duty vehicles are literally “other motor vehicle standards of the Government,” in that they are standards set by a Federal agency that apply to motor vehicles. Basic chemistry makes fuel economy and tailpipe CO₂ emissions two sides of the same coin, as discussed at length above, and when two agencies functionally regulate both (because by regulating fuel economy, you regulate CO₂ emissions, and vice versa), it would be absurd not to link their standards.⁴⁰⁹ The global warming potential of N₂O, CH₄, and HFC emissions are not closely linked with fuel economy, but neither do they affect fuel economy capabilities. How, then, should NHTSA consider EPA's various GHG standards?

NHTSA is aware that some stakeholders believe that NHTSA's obligation to set maximum feasible CAFE standards can best be executed by letting EPA decide what GHG standards

⁴⁰⁵ PRIA, Chapter 5.

⁴⁰⁶ PRIA, Chapter 6.

⁴⁰⁷ 77 FR 62624, 62669 (Oct. 15, 2012).

⁴⁰⁸ *Id.*

⁴⁰⁹ In fact, EPA includes tailpipe CH₄, CO, and CO₂ in the measurement of tailpipe CO₂ for GHG compliance using a carbon balance equation so that the measurement of tailpipe CO₂ exactly aligns with the measurement of fuel economy for the CAFE compliance.

are appropriate and reasonable under the CAA. NHTSA disagrees. While EPA and NHTSA consider some similar factors under the CAA and EPCA/EISA, respectively, they are not identical. Standards that are appropriate under the CAA may not be “maximum feasible” under EPCA/EISA, and vice versa. Moreover, considering EPCA’s language in the context in which it was written, it seems unreasonable to conclude that Congress intended EPA to dictate CAFE stringency. In fact, Congress clearly separated NHTSA’s and EPA’s responsibilities for CAFE under EPCA by giving NHTSA authority to set standards and EPA authority to measure and calculate fuel economy. If Congress had wanted EPA to set CAFE standards, it could have given that authority to EPA in EPCA or at any point since Congress amended EPCA.⁴¹⁰

NHTSA and EPA are obligated by Congress to exercise their own independent judgment in fulfilling their statutory missions, even though both agencies’ regulations affect both fuel economy and CO₂ emissions. Because of this relationship, it is incumbent on both agencies to coordinate and look to one another’s actions to avoid unreasonably burdening industry through inconsistent regulations, but both agencies must be able to defend their programs on their own merits. As with other recent CAFE and GHG rulemakings, the agencies are continuing to do all of these things in this proposal.

With regard to standards issued by the State of California, State tailpipe standards (whether for greenhouse gases or for other pollutants) do not qualify as “other motor vehicle standards of the Government” under 49 U.S.C. 32902(f); therefore, NHTSA will not consider them as such in proposing maximum feasible average fuel economy standards. States may not adopt or enforce tailpipe greenhouse gas emissions standards when such standards relate to fuel economy standards and are therefore preempted under EPCA, regardless of whether EPA granted any waivers under the Clean Air Act (CAA).⁴¹¹

Preempted standards of a State or a political subdivision of a State include, for example:

- (1) A fuel economy standard; and
- (2) A law or regulation that has the direct effect of a fuel economy standard,

⁴¹⁰ We note, for instance, that EISA was passed after the *Massachusetts v. EPA* decision by the Supreme Court. If Congress had wanted to amend EPCA in light of that decision, they would have done so at the time. They did not.

⁴¹¹ This topic is discussed further in Section VI below.

but is not labeled as one (*i.e.*, a State tailpipe CO₂ standard or prohibition on CO₂ emissions).

NHTSA and EPA agree that state tailpipe greenhouse gas emissions standards do not become Federal standards and qualify as “other motor vehicle standards of the Government,” when subject to a CAA preemption waiver. EPCA’s legislative history supports this position.

EPCA, as initially passed in 1975, mandated average fuel economy standards for passenger cars beginning with model year 1978. The law required the Secretary of Transportation to establish, through regulation, maximum feasible fuel economy standards⁴¹² for model years 1981 through 1984 with the intent to provide steady increases to achieve the standard established for 1985 and thereafter authorized the Secretary to adjust that standard.

For the statutorily-established standards for model years 1978–1980, EPCA provided each manufacturer with the right to petition for changes in the standards applicable to that manufacturer. A petitioning manufacturer had the burden of demonstrating a “Federal fuel economy standards reduction” was likely to exist for that manufacturer in one or more of those model years and that it had made reasonable technology choices. “Federal standards,” for that limited purpose, included not only safety standards, noise emission standards, property loss reduction standards, and emission standards issued under various Federal statutes, but also “*emissions standards applicable by reason of section 209(b) of [the CAA].*”⁴¹³ (Emphasis added). Critically, all definitions, processes, and required findings regarding a Federal fuel economy standards reduction were located within a single self-contained subsection of 15 U.S.C. 2002 that applied only to model years 1978–1980.⁴¹⁴

In 1994, Congress recodified EPCA. As part of this recodification, the CAFE provisions were moved to Title 49 of the United States Code. In doing so,

⁴¹² As is the case today, EPCA required the Secretary to determine “maximum feasible average fuel economy” after considering technological feasibility, economic practicability, the effect of other Federal motor vehicle standards on fuel economy, and the need of the Nation to conserve energy. 15 U.S.C. 2002(e) (recodified July 5, 1994).

⁴¹³ Section 202 of the CAA (42 U.S.C. 7521) requires EPA to prescribe air pollutant emission standards for new vehicles; Section 209 of the CAA (42 U.S.C. 7543) preempts state emissions standards but allows California to apply for a waiver of such preemption.

⁴¹⁴ As originally enacted as part of Public Law 94–163, that subsection was designated as section 502(d) of the Motor Vehicle Information and Cost Savings Act.

unnecessary provisions were deleted. Specifically, the recodification eliminated subsection (d). The House report on the recodification declared that the subdivision was “executed,” and described its purpose as “[p]rovid[ing] for modification of average fuel economy standards for model years 1978, 1979, and 1980.”⁴¹⁵ It is generally presumed, when Congress includes text in one section and not in another, that Congress knew what it was doing and made the decision deliberately.

NHTSA has previously considered the impact of California’s Low Emission Vehicle standards in establishing fuel economy standards and occasionally has done so under the “other standards” sections.⁴¹⁶ During the 2012 rulemaking, NHTSA sought comment on the appropriateness of considering California’s tailpipe GHG emission standards in this section and concluded that doing so was unnecessary.⁴¹⁷ In light of the legislative history discussed above, however, NHTSA now determines that this was not appropriate. Notwithstanding the improper categorization of such discussions, NHTSA may consider elements not specifically designated as factors to be considered under EPCA, given the breadth of such factors as technological feasibility and economic practicability, and such consideration was appropriate.⁴¹⁸

(4) The Need of the United States To Conserve Energy

“The need of the United States to conserve energy” means “the consumer cost, national balance of payments, environmental, and foreign policy implications of our need for large quantities of petroleum, especially imported petroleum.”⁴¹⁹

(i) Consumer Costs and Fuel Prices

Fuel for vehicles costs money for vehicle owners and operators. All else equal, consumers benefit from vehicles that need less fuel to perform the same amount of work. Future fuel prices are a critical input into the economic

⁴¹⁵ H.R. Rep. No. 103–180, at 583–584, tbl. 2A.

⁴¹⁶ See, e.g., 68 FR 16896, 71 FR 17643.

⁴¹⁷ See 77 FR 62669.

⁴¹⁸ See, e.g., discussion in *Center for Automotive Safety v. National Highway Traffic Safety Administration*, et al., 793 F.2d 1322 (D.C. Cir. 1986) at 1338, *et seq.*, providing that NHTSA may consider consumer demand in establishing standards, but not “to such an extent that it ignored the overarching goal of fuel conservation. At the other extreme, a standard with harsh economic consequences for the auto industry also would represent an unreasonable balancing of EPCA’s policies.”

⁴¹⁹ 42 FR 63184, 63188 (Dec. 15, 1977).

analysis of potential CAFE standards because they determine the value of fuel savings both to new vehicle buyers and to society, the amount of fuel economy that the new vehicle market is likely to demand in the absence of new standards, and they inform NHTSA about the “consumer cost . . . of our need for large quantities of petroleum.” In this proposal, NHTSA’s analysis relies on fuel price projections from the U.S. Energy Information Administration’s (EIA) Annual Energy Outlook (AEO) for 2017. Federal government agencies generally use EIA’s price projections in their assessment of future energy-related policies.

(ii) National Balance of Payments

Historically, the need of the United States to conserve energy has included consideration of the “national balance of payments” because of concerns that importing large amounts of oil created a significant wealth transfer to oil-exporting countries and left the U.S. economically vulnerable.⁴²⁰ As recently as 2009, nearly half the U.S. trade deficit was driven by petroleum,⁴²¹ yet this concern has largely laid fallow in more recent CAFE actions, arguably in part because other factors besides petroleum consumption have since played a bigger role in the U.S. trade deficit. Given significant recent increases in U.S. oil production and corresponding decreases in oil imports, this concern seems likely to remain fallow for the foreseeable future.⁴²² Increasingly, changes in the price of fuel have come to represent transfers between domestic consumers of fuel and domestic producers of petroleum rather than gains or losses to foreign entities. Some commenters have lately

⁴²⁰ See 42 FR 63184, 63192 (Dec. 15, 1977) “A major reason for this need [to reduce petroleum consumption] is that the importation of large quantities of petroleum creates serious balance of payments and foreign policy problems. The United States currently spends approximately \$45 billion annually for imported petroleum. But for this large expenditure, the current large U.S. trade deficit would be a surplus.”

⁴²¹ See *Today in Energy: Recent improvements in petroleum trade balance mitigate U.S. trade deficit*, U.S. Energy Information Administration (July 21, 2014), <https://www.eia.gov/todayinenergy/detail.php?id=17191>.

⁴²² For an illustration of recent increases in U.S. production, see, e.g., *U.S. crude oil and liquid fuels production, Short-Term Energy Outlook*, U.S. Energy Information Administration (June 2018), <https://www.eia.gov/outlooks/steo/images/fig13.png>. While it could be argued that reducing oil consumption frees up more domestically-produced oil for exports, and thereby raises U.S. GDP, that is neither the focus of the CAFE program nor consistent with Congress’ original intent in EPCA. EIA’s Annual Energy Outlook (AEO) series provides midterm forecasts of production, exports, and imports of petroleum products, and is available at <https://www.eia.gov/outlooks/aeo/>.

raised concerns about potential economic consequences for automaker and supplier operations in the U.S. due to disparities between CAFE standards at home and their counterpart fuel economy/efficiency and GHG standards abroad. NHTSA finds these concerns more relevant to technological feasibility and economic practicability than to the national balance of payments. Moreover, to the extent that an automaker decides to globalize a vehicle platform to meet more stringent standards in other countries, that automaker would comply with United States’s standards and additionally generate overcompensation credits that it can save for future years if facing compliance concerns, or sell to other automakers. While CAFE standards are set at maximum feasible rates, efforts of manufacturers to exceed those standards are rewarded not only with additional credits but a market advantage in that consumers who place a large weight on fuel savings will find such vehicles that much more attractive.

(iii) Environmental Implications

Higher fleet fuel economy can reduce U.S. emissions of various pollutants by reducing the amount of oil that is produced and refined for the U.S. vehicle fleet but can also increase emissions by reducing the cost of driving, which can result in increased vehicle miles traveled (*i.e.*, the rebound effect). Thus, the net effect of more stringent CAFE standards on emissions of each pollutant depends on the relative magnitudes of its reduced emissions in fuel refining and distribution and increases in its emissions from vehicle use. Fuel savings from CAFE standards also necessarily results in lower emissions of CO₂, the main GHG emitted as a result of refining, distribution, and use of transportation fuels. Reducing fuel consumption directly reduces CO₂ emissions because the primary source of transportation-related CO₂ emissions is fuel combustion in internal combustion engines.

NHTSA has considered environmental issues, both within the context of EPCA and the context of the National Environmental Policy Act (NEPA), in making decisions about the setting of standards since the earliest days of the CAFE program. As courts of appeal have noted in three decisions stretching over the last 20 years,⁴²³

⁴²³ *CAS*, 793 F.2d 1322, 1325 n. 12 (D.C. Cir. 1986); *Public Citizen*, 848 F.2d 256, 262–63 n. 27 (D.C. Cir. 1988) (noting that “NHTSA itself has interpreted the factors it must consider in setting CAFE standards as including environmental effects”); *CBD*, 538 F.3d 1172 (9th Cir. 2007).

NHTSA defined “the need of the United States to conserve energy” in the late 1970s as including, among other things, environmental implications. In 1988, NHTSA included climate change concepts in its CAFE notices and prepared its first environmental assessment addressing that subject.⁴²⁴ It cited concerns about climate change as one of its reasons for limiting the extent of its reduction of the CAFE standard for MY 1989 passenger cars.⁴²⁵ Since then, NHTSA has considered the effects of reducing tailpipe emissions of CO₂ in its fuel economy rulemakings pursuant to the need of the United States to conserve energy by reducing petroleum consumption.

(iv) Foreign Policy Implications

U.S. consumption and imports of petroleum products impose costs on the domestic economy that are not reflected in the market price for crude petroleum or in the prices paid by consumers for petroleum products such as gasoline. These costs include (1) higher prices for petroleum products resulting from the effect of U.S. oil demand on world oil prices, (2) the risk of disruptions to the U.S. economy caused by sudden increases in the global price of oil and its resulting impact of fuel prices faced by U.S. consumers, and (3) expenses for maintaining the strategic petroleum reserve (SPR) to provide a response option should a disruption in commercial oil supplies threaten the U.S. economy, to allow the U.S. to meet part of its International Energy Agency obligation to maintain emergency oil stocks, and to provide a national defense fuel reserve.⁴²⁶ Higher U.S. consumption of crude oil or refined petroleum products increases the magnitude of these external economic costs, thus increasing the true economic cost of supplying transportation fuels above the resource costs of producing them. Conversely, *reducing* U.S. consumption of crude oil or refined petroleum products (by reducing motor fuel use) can reduce these external costs.

While these costs are considerations, the United States has significantly increased oil production capabilities in

⁴²⁴ 53 FR 33080, 33096 (Aug. 29, 1988).

⁴²⁵ 53 FR 39275, 39302 (Oct. 6, 1988).

⁴²⁶ While the U.S. maintains a military presence in certain parts of the world to help secure global access to petroleum supplies, that is neither the primary nor the sole mission of U.S. forces overseas. Additionally, the scale of oil consumption reductions associated with CAFE standards would be insufficient to alter any existing military missions focused on ensuring the safe and expedient production and transportation of oil around the globe. See Chapter 7 of the PRIA for more information on this topic.

recent years to the extent that the U.S. is currently producing enough oil to satisfy nearly all of its energy needs and is projected to continue to do so or become a net energy exporter. This has added new stable supply to the global oil market and reduced the urgency of the U.S. to conserve energy. We discuss this issue in more detail below.

(5) Factors That NHTSA Is Prohibited From Considering

EPCA also provides that in determining the level at which it should set CAFE standards for a particular model year, NHTSA may not consider the ability of manufacturers to take advantage of several EPCA provisions that facilitate compliance with CAFE standards and thereby reduce the costs of compliance.⁴²⁷ As discussed further in Section X.B.1.c) below, NHTSA cannot consider compliance credits that manufacturers earn by exceeding the CAFE standards and then use to achieve compliance in years in which their measured average fuel economy falls below the standards. NHTSA also cannot consider the use of alternative fuels by dual fuel vehicles nor the availability of dedicated alternative fuel vehicles in any model year. EPCA encourages the production of alternative fuel vehicles by specifying that their fuel economy is to be determined using a special calculation procedure that results in those vehicles being assigned a higher fuel economy level than they actually achieve.

The effect of the prohibitions against considering these statutory flexibilities in setting the CAFE standards is that the flexibilities remain voluntarily-employed measures. If NHTSA were instead to assume manufacturer use of those flexibilities in setting new standards, higher standards would appear less costly and therefore more feasible, which would thus tend to require manufacturers to use those flexibilities in order to meet higher standards. By keeping NHTSA from including them in our stringency determination, the provision ensures that these statutory credits remain true compliance flexibilities.

Additionally, for non-statutory incentives that NHTSA developed by regulation, NHTSA does not consider these subject to the EPCA prohibition on considering flexibilities, either. EPCA is very clear as to which flexibilities are not to be considered. When the agency has introduced additional flexibilities such as A/C efficiency and “off-cycle” technology fuel economy improvement values, NHTSA has considered those

technologies as available in the analysis. Thus, today’s analysis includes assumptions about manufacturers’ use of those technologies, as detailed in Section X.B.1.c)(4)

(f) EPCA/EISA Requirements That No Longer Apply Post-2020

Congress amended EPCA through EISA to add two requirements not yet discussed in this section relevant to determination of CAFE standards during the years between MY 2011 and MY 2020 but not beyond. First, Congress stated that, regardless of NHTSA’s determination of what levels of standards would be maximum feasible, standards must be set at levels high enough to ensure that the combined U.S. passenger car and light truck fleet achieves an average fuel economy level of not less than 35 mpg no later than MY 2020.⁴²⁸ And second, between MYs 2011 and 2020, the standards must “increase ratably” in each model year.⁴²⁹ Neither of these requirements apply after MY 2020, so given that this rulemaking concerns the standards for MY 2021 and after, they are not relevant to this rulemaking.

(g) Other Considerations in Determining Maximum Feasible Standards

NHTSA has historically considered the potential for adverse safety consequences in setting CAFE standards. This practice has been consistently approved in case law. As courts have recognized, “NHTSA has always examined the safety consequences of the CAFE standards in its overall consideration of relevant factors since its earliest rulemaking under the CAFE program.” *Competitive Enterprise Institute v. NHTSA*, 901 F.2d 107, 120 n. 11 (D.C. Cir. 1990) (“*CEI-I*”) (citing 42 FR 33534, 33551 (June 30, 1977)). The courts have consistently upheld NHTSA’s implementation of EPCA in this manner. *See, e.g., Competitive Enterprise Institute v. NHTSA*, 956 F.2d 321, 322 (D.C. Cir. 1992) (“*CEI-II*”) (in determining the maximum feasible fuel economy standard, “NHTSA has always taken passenger safety into account”) (citing *CEI-I*, 901 F.2d at 120 n. 11); *Competitive Enterprise Institute v. NHTSA*, 45 F.3d 481, 482–83 (D.C. Cir. 1995) (“*CEI-III*”) (same); *Center for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1203–04 (9th Cir. 2008) (upholding NHTSA’s analysis of vehicle safety issues associated with weight in connection with the MYs 2008–2011 light truck CAFE rulemaking). Thus, in

evaluating what levels of stringency would result in maximum feasible standards, NHTSA assesses the potential safety impacts and considers them in balancing the statutory considerations and to determine the maximum feasible level of the standards.

The attribute-based standards that Congress requires NHTSA to set help to mitigate the negative safety effects of the historical “flat” standards originally required in EPCA, in recent rulemakings, NHTSA limited the consideration of mass reduction in lower weight vehicles in its analysis, which impacted the resulting assessment of potential adverse safety effects. That analytical approach did not reflect, however, the likelihood that automakers may pursue the most cost effective means of improving fuel efficiency to comply with CAFE requirements. For this rulemaking, the modeling does not limit the amount of mass reduction that is applied to any segment but rather considers that automakers may apply mass reduction based upon cost-effectiveness, similar to most other technologies. NHTSA does not, of course, mandate the use of any particular technology by manufacturers in meeting the standards. The current proposal, like the Draft TAR, also considers the safety effect associated with the additional vehicle miles traveled due to the rebound effect.

In this rulemaking, NHTSA is considering the effect of additional expenses in fuel savings technology on the affordability of vehicles—the likelihood that increased standards will result in consumers being priced out of the new vehicle market and choosing to keep their existing vehicle or purchase a used vehicle. Since new vehicles are significantly safer than used vehicles, slowing fleet turnover to newer vehicles results in older and less safe vehicles remaining on the roads longer. This significantly affects the safety of the United States light duty fleet, as described more fully in Section 0 above and in Chapter 11 of the PRIA accompanying this proposal. Furthermore, as fuel economy standards become more stringent, and more fuel efficient vehicles are introduced into the fleet, fueling costs are reduced. This results in consumers driving more miles, which results in more crashes and increased highway fatalities.

2. Administrative Procedure Act

To be upheld under the “arbitrary and capricious” standard of judicial review in the APA, an agency rule must be rational, based on consideration of the relevant factors, and within the scope of

⁴²⁷ 49 U.S.C. 32902(h).

⁴²⁸ 49 U.S.C. 32902(b)(2)(A).

⁴²⁹ 49 U.S.C. 32902(b)(2)(C).

the authority delegated to the agency by the statute. The agency must examine the relevant data and articulate a satisfactory explanation for its action including a “rational connection between the facts found and the choice made.” *Burlington Truck Lines, Inc., v. United States*, 371 U.S. 156, 168 (1962).

Statutory interpretations included in an agency’s rule are subject to the two-step analysis of *Chevron, U.S.A. v. Natural Resources Defense Council*, 467 U.S. 837 (1984). Under step one, where a statute “has directly spoken to the precise question at issue,” *id.* at 842, the court and the agency “must give effect to the unambiguously expressed intent of Congress,” *id.* at 843. If the statute is silent or ambiguous regarding the specific question, the court proceeds to step two and asks “whether the agency’s answer is based on a permissible construction of the statute.” *Id.*

If an agency’s interpretation differs from the one that it has previously adopted, the agency need not demonstrate that the prior position was wrong or even less desirable. Rather, the agency would need only to demonstrate that its *new* position is consistent with the statute and supported by the record and acknowledge that this is a departure from past positions. The Supreme Court emphasized this in *FCC v. Fox Television*, 556 U.S. 502 (2009). When an agency changes course from earlier regulations, “the requirement that an agency provide a reasoned explanation for its action would ordinarily demand that it display awareness that it *is* changing position,” but “need not demonstrate to a court’s satisfaction that the reasons for the new policy are *better* than the reasons for the old one; it suffices that the new policy is permissible under the statute, that there are good reasons for it, and that the agency *believes* it to be better, which the conscious change of course adequately indicates.”⁴³⁰ The APA also requires that agencies provide notice and comment to the public when proposing regulations,⁴³¹ as we are doing today.

3. National Environmental Policy Act

As discussed above, EPCA requires NHTSA to determine the level at which to set CAFE standards for each model year by considering the four factors of technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy. The National Environmental Policy Act (NEPA) directs that environmental

considerations be integrated into that process.⁴³² To accomplish that purpose, NEPA requires an agency to compare the potential environmental impacts of its proposed action to those of a reasonable range of alternatives.

To explore the environmental consequences of this proposed rule in depth, NHTSA has prepared a Draft Environmental Impact Statement (“DEIS”). The purpose of an EIS is to “provide full and fair discussion of significant environmental impacts and [to] inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.”⁴³³

NEPA is “a procedural statute that mandates a process rather than a particular result.” *Stewart Park & Reserve Coal, Inc. v. Slater*, 352 F.3d 545, 557 (2d Cir. 2003). The agency’s overall EIS-related obligation is to “take a ‘hard look’ at the environmental consequences before taking a major action.” *Baltimore Gas & Elec. Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 97 (1983). Significantly, “[i]f the adverse environmental effects of the proposed action are adequately identified and evaluated, the agency is not constrained by NEPA from deciding that other values outweigh the environmental costs.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

The agency must identify the “environmentally preferable” alternative but need not adopt it. “Congress in enacting NEPA . . . did not require agencies to elevate environmental concerns over other appropriate considerations.” *Baltimore Gas & Elec. Co. v. Natural Resources Defense Council, Inc.*, 462 U.S. 87, 97 (1983). Instead, NEPA requires an agency to develop alternatives to the proposed action in preparing an EIS. 42 U.S.C. 4322(2)(C)(iii). The statute does not command the agency to favor an environmentally preferable course of action, only that it make its decision to proceed with the action after taking a hard look at the environmental consequences.

We seek comment on the DEIS associated with this NPRM.

4. Evaluating the EPCA Factors and Other Considerations To Arrive at the Proposed Standards

NHTSA well recognizes that the decision it proposes to make in today’s NPRM is different from the one made in

the 2012 final rule that established standards for MY 2021 and identified “augural” standard levels for MYs 2022–2025. Not only do we believe that the facts before us have changed, but we believe that those facts have changed sufficiently that the balancing of the EPCA factors and other considerations must also change. The standards we are proposing today reflect that balancing.

The overarching purpose of EPCA is energy conservation; that fact remains the same. Examining that phrasing afresh, Merriam-Webster states that to “conserve” means, in relevant part, “to keep in a safe or sound state; especially, to avoid wasteful or destructive use of.”⁴³⁴ This is consistent with our understanding of Congress’ original intent for the CAFE program: To raise fleet-wide fuel economy levels in response to the Arab oil embargo in the 1970s and protect the country from further gasoline price shocks and supply shortages. Those price shocks, while they were occurring, were disruptive to the U.S. economy and significantly affected consumers’ daily lives. Congress therefore sought to keep U.S. energy consumption in a safe and sound state for the sake of consumers and the economy and avoid such shocks in the future.

Today, the conditions that led both to those price shocks and to U.S. energy vulnerability overall have changed significantly. In the late 1970s, the U.S. was a major oil importer and changes (intentional or not) in the global oil supply had massive domestic consequences, as Congress saw. While oil consumption exceeded domestic production for many years after that, net energy imports peaked in 2005, and since then, oil imports have declined while exports have increased.

The relationship between the U.S. and the global oil market has changed for two principal reasons. The first reason is that the U.S. now consumes a significantly smaller share of global oil production than it did in the 1970s. At the time of the Arab oil embargo, the U.S. consumed about 17 million barrels per day of the globe’s approximately 55 million barrels per day.⁴³⁵ While OPEC (particularly Saudi Arabia) still has the ability to influence global oil prices by imposing discretionary supply restrictions, the greater diversity of both suppliers and consumers since the 1970s has reduced the degree to which

⁴³⁴ “Conserve,” Merriam-Webster, available at <https://www.merriam-webster.com/dictionary/conserve> (last visited June 25, 2018).

⁴³⁵ *Short-Term Energy Outlook*, U.S. Energy Information Administration (June 2018), available at https://www.eia.gov/outlooks/steo/pdf/steo_full.pdf.

⁴³⁰ *Ibid.*, 1181.

⁴³¹ 5 U.S.C. 553.

⁴³² NEPA is codified at 42 U.S.C. 4321–47.

⁴³³ 40 CFR 1502.1.

a single actor (or small collection of actors) can impact the welfare of individual consumers. Oil is a fungible global commodity, though there are limits to the substitutability of different types of crude for a given application. The global oil market can, to a large extent, compensate for any producer that chooses not to sell to a given buyer by shifting other supply toward that buyer. And while regional proximity, comparability of crude oil, and foreign policy considerations can make some transactions more or less attractive, as long as exporters have a vested interest in preserving the stability (both in terms of price and supply) of the global oil market, coordinated, large-scale actions (like the multi-nation sanctions against Iran in recent years) would be required to impose costs or welfare losses on one specific player in the global market. As a corollary to the small rise in U.S. petroleum consumption over the last few decades, the oil intensity of U.S. GDP has continued to decline since the Arab oil embargo, suggesting that U.S. GDP is less susceptible to increases in global petroleum prices (sudden or otherwise) than it was at the time of EPCA's passage or when these policies were last considered in 2012. While the U.S. still has a higher energy intensity of GDP than some other developed nations, our energy intensity has been declining since 1950 (shrinking by about 60% since 1950 and almost 30% between 1990 and 2015).⁴³⁶

The second factor that has changed the United States' relationship to the global oil market is the changing U.S. reliance on imported oil over the last decade. U.S. domestic oil production began rising in 2009 with more cost-effective drilling and production technologies.⁴³⁷ Domestic oil production became more cost-effective for two basic reasons. First, technology improved: The use of horizontal drilling in conjunction with hydraulic fracturing has greatly expanded the ability of producers to profitably recover natural gas and oil from low-permeability geologic plays—particularly, shale plays—and consequently, oil production from shale plays has grown rapidly in recent years.⁴³⁸ And second,

⁴³⁶ *Today in Energy: Global energy intensity continues to decline*, U.S. Energy Information Administration (July 12, 2016), <https://www.eia.gov/todayinenergy/detail.php?id=27032>.

⁴³⁷ *Energy Explained*, U.S. Energy Information Administration, <https://www.eia.gov/energyexplained/index.cfm> (last visited June 25, 2018).

⁴³⁸ *Review of Emerging Resources: U.S. Shale Gas and Shale Oil Plays*, U.S. Energy Information Administration (July 8, 2011), <https://www.eia.gov/analysis/studies/usshalegas/>. Practical application of horizontal drilling to oil production began in the early 1980s, by which time the advent of improved

rising global oil prices themselves made using those technologies more feasible. As a hypothetical example, if it costs \$79 per barrel to extract oil from a shale play, when the market price for that oil is \$60 per barrel, it is not worth the producer's cost to extract the oil; when the market price is \$80 per barrel, it becomes cost-effective.

Recent analysis further suggests that the U.S. oil supply response to a rise in global prices is much larger now due to the shale revolution, as compared to what it was when U.S. production depended entirely on conventional wells. Unconventional wells may be not only capable of producing more oil over time but also may be capable of responding faster to price shocks. One 2017 study concluded that "The long-run price responsiveness of supply is about 6 times larger for tight oil on a per well basis, and about 9 times larger when also accounting for the rise in unconventional-directed drilling." That same study further found that "Given a price rise to \$80 per barrel, U.S. oil production could rise by 0.5 million barrels per day in 6 months, 1.2 million in 1 year, 2 million in 2 years, and 3 million in 5 years."⁴³⁹ Some analysts suggest that shale drillers can respond more quickly to market conditions because, unlike conventional drillers, they do not need to spend years looking for new deposits, because there are simply so many shale oil wells being drilled, and because they are more productive (although their supply may be exhausted more quickly than a conventional well, the sheer numbers appear likely to make up for that concern).⁴⁴⁰ Some commenters disagree and suggest that the best deposits are already known and tapped.⁴⁴¹ Other

downhole drilling motors and the invention of other necessary supporting equipment, materials, and technologies (particularly, downhole telemetry equipment) had brought some applications within the realm of commercial viability. EIA's AEO 2018 also projects that by the early 2040s, tight oil production will account for nearly 70% of total U.S. production, up from 54% of the U.S. total in 2017. See also, *Tight oil remains the leading source of future U.S. crude oil production*, U.S. Energy Information Administration (Feb. 22, 2018), <https://www.eia.gov/todayinenergy/detail.php?id=35052>.

⁴³⁹ Newell, R. G. & Prest, B.C. *The Unconventional Oil Supply Boom: Aggregate Price Response from Microdata*, Working Paper 23973, National Bureau of Economic Research (Oct. 2017), available at <http://www.nber.org/papers/w23973> (last visited June 25, 2018).

⁴⁴⁰ Ip, G. *America's Emerging Petro Economy Flips the Impact of Oil*, Wall Street Journal (Feb. 21, 2018), available at <https://www.wsj.com/articles/americas-emerging-petro-economy-flips-the-impact-of-oil-1519209000> (last visited June 25, 2018).

⁴⁴¹ Olson, B. *Shale Trailblazer Turns Skeptic on Soaring U.S. Oil Production*, Wall Street Journal (Mar. 5, 2018), available at <https://www.wsj.com/articles/shale-trailblazer-turns-skeptic-on-soaring-u-s-oil-production-1520257595>.

commenters raise the possibility that even if the most productive deposits are already tapped, any rises in global oil prices should spur technology development that improves output of less productive deposits.⁴⁴² Moreover, even if U.S. production increases more slowly than, for example, EIA currently estimates, all increases in U.S. production help to temper global prices and the risk of oil shocks because they reduce the influence of other producing countries who might experience supply interruptions due to geopolitical instability or deliberately reduce supply in an effort to raise prices.⁴⁴³

These changes in U.S. oil intensity, production, and capacity cannot entirely insulate consumers from the effects of price shocks at the gas pump, because although domestic production may be able to satisfy domestic energy demand, we cannot predict whether domestically produced oil will be distributed domestically or more broadly to the global market. But it appears that domestic supply may dampen the magnitude, frequency, and duration of price shocks. As global per-barrel oil prices rise, U.S. production is now much better able to (and does) ramp up in response, pulling those prices back down. Corresponding per-gallon gas prices may not fall overnight,⁴⁴⁴ but it is foreseeable that they could moderate over time and likely respond faster than prior to the shale revolution. EIA's Annual Energy Outlook for 2018 acknowledges uncertainty regarding these new oil sources but projects that while retail prices of gasoline and diesel will increase between 2018 and 2050, annual average gasoline prices would not exceed \$4/gallon (in real dollars) during that timeframe under EIA's "reference

⁴⁴² LeBlanc, R. *In the Sweet Spot: The Key to Shale*, Wall Street Journal (Mar. 6, 2018), available at <http://partners.wsj.com/ceraweek/connection/sweet-spot-key-shale/>.

⁴⁴³ Alessi, C. & Sider, A. *U.S. Oil Output Expected to Surpass Saudi Arabia, Rivaling Russia for Top Spot*, Wall Street Journal (Jan. 19, 2018), available at <https://www.wsj.com/articles/u-s-crude-production-expected-to-surpass-saudi-arabia-in-2018-1516352405>.

⁴⁴⁴ To be clear, the fact that the risk of gasoline price shocks may now be lower than in the past is different from arguing that gasoline prices will never rise again at all. The Energy Information Administration tracks and reports on pump prices around the country, and we refer readers to their website for the most up-to-date information. EIA projects under its "reference case" assumptions that the structural changes in the oil market will keep prices below \$4/gallon through 2050. Prices will foreseeably continue to rise and fall with supply and demand changes; the relevant question for the need of the U.S. to conserve energy is not whether there will be any movement in prices but whether that movement is likely to be sudden and large.

case” projection.⁴⁴⁵ The International Energy Agency (IEA)’s Oil 2018 report suggests some concern that excessive focus on investing in U.S. shale oil production may increase price volatility after 2023 if investment is not applied more broadly but also states that U.S. shale oil is capable of and expected to respond quickly to rising prices in the future, and that American influence on global oil markets is expected to continue to rise.⁴⁴⁶ From the supply side, it is possible that the oil market conditions that created the price shocks in the 1970s may no longer exist.

Regardless of changes in the oil supply market, on the demand side, conditions are also significantly different from the 1970s. If gasoline prices increase suddenly and dramatically, in today’s market American consumers have more options for fuel-efficient new vehicles. Fuel-efficient vehicles were available to purchasers in the 1970s, but they were generally small entry-level vehicles with features that did not meet the needs and preferences of many consumers. Today, most U.S. households maintain a household vehicle fleet that serves a variety of purposes and represents a variety of fuel efficiency levels. Manufacturers have responded to fuel economy standards and to consumer demand over the last decade to offer a wide array of fuel-efficient vehicles in different segments and with a wide range of features. A household may now respond to short-term increases in fuel price by shifting vehicle miles traveled within their household fleet away from less-efficient vehicles and toward models with higher fuel economy. A similar option existed in the 1970s, though not as widely as today, and vehicle owners in 2018 do not have to sacrifice as much utility as owners did

in the 1970s when making fuel-efficiency trade-offs within their household fleets (or when replacing household vehicles at the time of purchase). On a longer-term basis, if oil prices rise, consumers have more options to invest in additional fuel economy when purchasing new vehicles than at any other time in history.

Global oil demand conditions are also different than in previous years. Countries that had very small markets for new light-duty vehicles in the 1970s are now driving global production as their economies improve and growing numbers of middle-class consumers are able to purchase vehicles for personal use. The global increase in drivers inevitably affects global oil demand, which affects oil prices. However, these changes generally occur gradually over time, unlike a disruption that causes a gasoline price shock. Market growth happens relatively gradually and is subject to many different factors. Oil supply markets likely have time to adjust to increases in demand from higher vehicle sales in countries like China and India, and in fact, those increases in demand may temper global prices by keeping production increasing more steadily than if demand was less certain; clear demand rewards increased production and encourages additional resource development over time. It therefore seems unlikely that growth in these vehicle markets could lead to gasoline price shocks. Moreover, even as these vehicle markets grow, it is possible that these and other vehicle markets may be moving away from petroleum usage under the direction of their governments.⁴⁴⁷ If this occurs, global oil production will fall in response to reduced global demand, but latent production capacity would exist to offset the impacts of unexpected supply interruptions and maintain a level of global production that is accessible to petroleum consumers. This, too, would seem likely to reduce the risk of gasoline price shocks.

Considering all of the above factors, if gasoline price shocks are no longer as much of a threat as they were when EPCA was originally passed, it seems reasonable to consider what the need of the United States to conserve oil is today and going forward. Looking to the discussion above on what factors are relevant to the need of the United States to conserve oil, one may conclude that the U.S. is no longer as dependent upon petroleum as the engine of economic

prosperity as it was when EPCA was passed. The national balance of payments considerations are likely drastically less important than they were in the 1970s, at least in terms of oil imports and vehicle fuel economy. Foreign policy considerations appear to have shifted along with the supply shifts also discussed above.

Whether and how environmental considerations create a need for CAFE standards is, perhaps, more complicated. As discussed earlier in this document, carbon dioxide is a direct byproduct of the combustion of carbon-based fuels in vehicle engines.⁴⁴⁸ Many argue that it is likely that human activities, especially emissions of greenhouse gases like carbon dioxide, contribute to the observed climate warming since the mid-20th century.⁴⁴⁹ Even taking that premise as given, it is reasonable to ask whether rapid ongoing increases in CAFE stringency (or even, for that matter, electric vehicle mandates) can sufficiently address climate change to merit their costs. To “conserve,” again, means “to avoid wasteful or destructive use of.”

Some commenters have argued essentially that any petroleum use is destructive because it all adds incrementally to climate change. They argue that as CAFE standards increase, petroleum use will decrease; therefore CAFE standard stringency should increase as rapidly as possible. Other commenters, recognizing that economic practicability is also relevant, have argued essentially that because more stringent CAFE standards produce less CO₂ emissions, NHTSA should simply set CAFE standards to increase at the most rapid of the alternative rates that NHTSA cannot prove is economically impracticable. The question here, again, is whether the *additional* fuel saved (and CO₂ emissions avoided) by more rapidly increasing CAFE standards better satisfies the U.S.’s need to avoid destructive or wasteful use of energy than more moderate approaches that more appropriately balance other statutory considerations.

In the context of climate change, NHTSA believes it is hard to say that increasing CAFE standards is necessary to avoid destructive or wasteful use of energy as compared to somewhat-less-rapidly-increasing CAFE standards. The most stringent of the regulatory

⁴⁴⁵ *Annual Energy Outlook 2018*, U.S. Energy Information Administration (Feb. 6, 2018) at 57, 58, available at <https://www.eia.gov/outlooks/aeo/pdf/AEO2018.pdf>. The U.S. Energy Information Administration (EIA) is the statistical and analytical agency within the U.S. Department of Energy (DOE). EIA is the nation’s premier source of energy information and every fuel economy rulemaking since 2002 (and every joint CAFE and CO₂ rulemaking since 2009) has applied fuel price projections from EIA’s *Annual Energy Outlook* (AEO). AEO projections, documentation, and underlying data and estimates are available at <https://www.eia.gov/outlooks/aeo/>.

⁴⁴⁶ See *Oil 2018: Analysis and Forecasts to 2023 Executive Summary*, International Energy Agency (2018), available at <http://www.iea.org/Textbase/npsom/oil2018MRSsum.pdf> (last visited June 25, 2018). See also Kent, S. & Puko, T. *U.S. Will Be the World’s Largest Oil Producer by 2023, Says IEA*, Wall Street Journal (Mar. 5, 2018), available at <https://www.wsj.com/articles/u-s-will-be-the-worlds-largest-oil-producer-by-2023-says-iea-1520236810> (reporting on remarks at the 2018 CERAWeek energy conference by IEA Executive Director Fatih Birol).

⁴⁴⁷ Lynes, M. *Plug-in electric vehicles: future market conditions and adoption rates*, U.S. Energy Information Administration (Oct. 23, 2017), <https://www.eia.gov/outlooks/ieo/pev.php>.

⁴⁴⁸ Depending on the energy source, it may also be a byproduct of consumption of electricity by vehicles.

⁴⁴⁹ Climate Science Special Report: Fourth National Climate Assessment, Volume I (Wuebbles, D.J. et al., eds. 2017), available at <https://science2017.globalchange.gov/> (last accessed Feb. 23, 2018).

alternatives considered in the 2012 final rule and FRIA (under much more optimistic assumptions about technology effectiveness), which would have required a seven percent average annual fleetwide increase in fuel economy for MYs 2017–2025 compared to MY 2016 standards, was forecast to only decrease global temperatures in 2100 by 0.02 °C in 2100. Under NHTSA’s current proposal, we anticipate that global temperatures would increase by 0.003 °C in 2100 compared to the aural standards. As reported in NHTSA’s Draft EIS, compared to the average global mean surface temperature for 1986–2005, global surface temperatures are still forecast to increase by 3.484–3.487 °C, depending on the alternative. Because the impacts of any standards are small, and in fact several-orders-of-magnitude smaller, as compared to the overall forecast increases, this makes it hard for NHTSA to conclude that the climate change effects potentially attributable to the additional energy used, even over the full lifetimes of the vehicles in question, is “destructive or wasteful” enough that the “need of the U.S. to conserve energy” requires NHTSA to place an outsized emphasis on this consideration as opposed to others.⁴⁵⁰

Consumer costs are the remaining issue considered in the context of the need of the U.S. to conserve energy. NHTSA has argued in the past, somewhat paternalistically, that CAFE standards help to solve consumers’ “myopia” about the value of fuel savings they could receive, when buying a new vehicle if they chose a more fuel-efficient model. There has been extensive debate over how much consumers do (and/or should) value fuel savings and fuel economy as an attribute in new vehicles, and that debate is addressed in Section II.E. For purposes of considering the need of the U.S. to conserve energy, the question of consumer costs may be closer to whether U.S. consumers *so need* to save money on fuel that they must be required to save substantially more fuel (through purchasing a new vehicle made more fuel-efficient by more stringent CAFE standards) than they would otherwise choose.

Again, when EPCA originally passed, Congress was trying to protect U.S. consumers from the negative effects of another gasoline price shock. It appears

⁴⁵⁰ The question of whether or how rapidly to increase CAFE stringency is different from the question of whether to set CAFE standards at all. *Massachusetts v. EPA*, 549 U.S. 497 (2007) (“Agencies, like legislatures, do not generally resolve massive problems in one fell regulatory swoop.”)

much more likely today that oil prices will rise only moderately in the future and that price shocks are less likely. Accordingly, it is reasonable to believe that U.S. consumers value future fuel savings accurately and choose new vehicles based on that view. This is particularly true, since Federal law requires that new vehicles be posted with a window sticker providing estimated costs or savings over a five year period compared to average new vehicles.⁴⁵¹ Even if consumers do not explicitly think to themselves “this new car will save me \$5,000 in fuel costs over its lifetime compared to that other new car,” gradual and relatively predictable fuel price increases in the foreseeable future allow consumers to roughly estimate the comparative value of fuel savings among vehicles and choose the amount of fuel savings that they want, in light of the other vehicle attributes they value. It seems, then, that consumer cost as an element of the need of the U.S. to conserve energy is also less urgent in the context of the structural changes in oil markets over the last several years.

Given the discussion above, NHTSA tentatively concludes that the need of the U.S. to conserve energy may no longer function as assumed in previous considerations of what CAFE standards would be maximum feasible. The overall risks associated with the need of the U.S. to conserve oil have entered a new paradigm with the risks substantially lower today and projected into the future than when CAFE standards were first issued and in the recent past. The effectiveness of CAFE standards in reducing the demand for fuel combined with the increase in domestic oil production have contributed significantly to the current situation and outlook for the near- and mid-term future. The world has changed, and the need of the U.S. to conserve energy, at least in the context of the CAFE program, has also changed.

Of the other factors under 32902(g), the changes are perhaps less significant. We continue to believe that technological feasibility, *per se*, is not limiting during this rulemaking time frame. The technologies considered in this analysis either are already in commercial production or likely will be by MY 2021—some at great expense. Based on our analysis, all of the alternatives appear as though they could narrowly be considered *technologically* feasible, in that they could be achieved based on the existence or the projected future existence of technologies that could be incorporated on future

⁴⁵¹ 49 CFR 575.401; 40 CFR 600.302–12.

vehicles. Any of the alternatives could thus be achieved on a technical basis alone but only if the level of resources that might be required to implement the technologies is not considered. However, as discussed above, we no longer view the need of the U.S. to conserve energy as nearly infinite, which means that it no longer combines with boundless technological feasibility to quickly push stringency upward.

The effect of other motor vehicle standards of the Government on fuel economy is similarly not limiting during this rulemaking time frame. As discussed above, the analysis projects that safety standards will add some mass to new vehicles during this time frame and accounts for Tier 3 compliance in estimates of technology effectiveness, but neither of these things appear likely to make it significantly harder for industry to comply with more stringent CAFE standards. In terms of EPA’s GHG standards, as also discussed above, NHTSA and EPA’s coordination in this proposal should make the two sets of standards similarly binding, although differences in compliance provisions remain such that which standards are more binding will vary somewhat between manufacturers and over time.

The remaining factor to consider is economic practicability. NHTSA has typically defined economic practicability, as discussed above, as whether a given CAFE standard is “within the financial capability of the industry but not so stringent as” to lead to “adverse economic consequences, such as a significant loss of jobs or unreasonable elimination of consumer choice.” As part of that definition, NHTSA looks at a variety of elements that can lead to adverse economic consequences. All of the alternatives considered today arguably raise economic practicability issues. NHTSA believes there could be potential for unreasonable elimination of consumer choice, loss of U.S. jobs, and a number of adverse economic consequences under nearly all if not all of the regulatory alternatives considered today.

If a potential CAFE standard requires manufacturers to add technology to new vehicles that consumers do not want, or to skip adding technology to new vehicles that consumers do want, it would seem to present issues with elimination of consumer choice. Depending on the extent and expense of required fuel saving technology, that elimination of consumer choice could be unreasonable.

When deciding on which new vehicle to purchase, American consumers

generally tend not to be interested in better fuel economy above other attributes, particularly when gasoline prices are low.⁴⁵² Manufacturers have repeatedly indicated to the agencies that new vehicle buyers are only willing to pay for fuel economy-improving technology if it pays back within the first two to three years of vehicle ownership.⁴⁵³ NHTSA has therefore incorporated this assumption (of willingness to pay for technology that pays back within 30 months) into today's analysis. As a result, NHTSA's analysis finds that the most cost-effective technology is applied with or without CAFE (or CO₂) standards, diminishing somewhat the incremental cost-effectiveness of new CAFE standards.

Consumers not being interested in better fuel economy can take two forms: First, it can dampen sales of vehicles with the additional technology required to meet the standards, and second, it

⁴⁵² See, e.g., Comment by Global Automakers, Docket ID NHTSA-2016-0068-0062 (citing a 2014 study by Strategic Vision that found that ". . . generally, customers as a whole place a higher priority on handling and ride than fuel economy.").

⁴⁵³ This is supported by the 2015 NAS study, which found that consumers seek to recoup added upfront purchasing costs within two or three years. See 2015 NAS Report, at pg. 317.

can increase sales of vehicles that do not help manufacturers meet the standards (such as vehicles that fall significantly short of their fuel economy targets, due to higher levels of performance (e.g., larger, less efficient engines) or other features). Over the last several years, despite record sales overall, most manufacturers have been managing their CAFE compliance obligations through use of credits,⁴⁵⁴ because many consumers have chosen to buy vehicles that do not improve manufacturers' compliance positions.

Consumer decisions to purchase relatively low-fuel economy vehicles might seem irrational if gasoline prices were expected to rebound in the future, but current indicators suggest this is not particularly likely. Although we know of no clear "tipping point" for gasoline prices at which American consumers suddenly become more interested in

⁴⁵⁴ See *CAFE Public Information Center*, National Highway Traffic Safety Administration, https://one.nhtsa.gov/cafe_pic/CAFE_PIC_Mfr_LIVE.html (last visited June 25, 2018). Readers can examine achieved versus required fuel economy by model year and by individual manufacturer or by entire fleets. When a manufacturer's achieved fuel economy falls short of required fuel economy but the manufacturer has not paid civil penalties, the manufacturer is using credits somehow to make up the shortfall.

fuel economy over other attributes. In addition, EIA's latest AEO 2018 suggests, based on current assumptions, that per-gallon prices are likely to stay under \$4 through 2050.⁴⁵⁵ It therefore seems unlikely that consumer preferences are going to change dramatically in the foreseeable future and certainly not within the time frame of the standards covered by this proposal.

Thus, if manufacturers are not currently able to sell higher-fuel economy vehicles without heavy subsidization, particularly HEVs, PHEVs, and EVs, it seems unlikely that their ability to do so will improve unless consumer preferences change or fuel prices rise significantly, either of which seem unlikely. Today's analysis indicates, perhaps predictably, that electrification rates must increase as stringency increases among the options the agencies are considering.

⁴⁵⁵ As noted elsewhere in this proposal, the agencies based analysis on AEO 2017 projections of, for instance, fuel prices, as it was the best available information at the time the analysis was conducted. As such, where possible, the agency incorporated latest AEO 2018 projections into the discussion, in effort to re-confirm no discernible impact to analysis results or to provide the best possible information for the discussion.

issued EPA standards for MYs 2021–2025 would increase MY 2030 compliance costs by nearly \$1,900 per vehicle. Although EPA projected a similar cost⁴⁸⁰ increase in the 2012 rule announcing standards through 2025, this prior estimate was relative to an indefinite continuation of standards for MY 2016, and assuming that absent regulation, manufacturers would not increase fuel economy at all. In addition, as mentioned above, the analysis projects that, compared to the proposed standards, the previously-issued EPA standards would increase highway fatalities by 12,903 over the lifetime of vehicles produced through MY 2029. In evaluating the other Alternatives under consideration, the Administrator notes that Alternative 1 has the lowest cost of compliance and the lowest number of fatalities. He also notes that Alternative 1 will preserve consumer choice in the vehicle market and will provide a relatively high net savings to consumers, when assessing the increased costs of vehicles against fuel savings over the lifetime of the vehicle.

The Administrator recognizes that Alternative 1 is projected to result in less CO₂ reductions compared to the existing EPA standards and is not projected to achieve additional GHG reductions beyond the MY 2020 standards. However, the Administrator notes that, unlike other provisions in Title II referenced above, section 202(a) does not require the Administrator to set standards which result in the “greatest degree of emissions control achievable.” In light of this statutory discretion and the range of factors that the statute authorizes and permits the Administrator to consider, and his consideration of the factors discussed above, the EPA proposes to conclude that maintaining the MY 2020 standards going forward is an appropriate approach under section 202(a). Therefore, based on the data and analysis detailed in this proposal, the Administrator is proposing that the existing MY 2021 and later GHG standards are too stringent and is proposing to revise the MY 2021 and later standards to maintain the MY 2020 levels in subsequent model years. EPA requests comment on all aspects of this proposal and supporting assessments, including the Administrator’s consideration of the relevant factors under section 202(a) of the Clean Air Act, the proposed Alternative 1, the previously-established EPA GHG standards, and all of the Alternatives discussed in section IV of this preamble.

⁴⁸⁰ 77 FR 62624, 62665 (Oct. 15, 2012).

VI. Preemption of State and Local Laws

Accomplishing the goals of EPCA requires a set of uniform national fuel economy standards. Achieving this national standard requires the agencies to clearly discuss the extent to which state and local standards are expressly or impliedly preempted. As described herein, doing so is fundamental to the effectiveness of the new proposed set of fuel economy standards and to the critical importance of ensuring that the proposed Federal standards will constitute uniform national requirements, as Congress intended. This is also a fundamental reason that EPA is proposing the withdrawal of CAA preemption waivers granted to California relating to its GHG standards and Zero Emissions Vehicle (ZEV) mandate.

A. Preemption Under the Energy Policy and Conservation Act

1. History of EPCA Preemption Discussions in Rulemakings

NHTSA has asserted the preemption of certain State emissions standards under EPCA a number of times in CAFE rulemakings dating back to 2002.⁴⁸¹ The initial rulemaking discussion was prompted by a court filing by the State of California claiming that NHTSA did not treat California’s Greenhouse Gas Emissions regulation as preempted.⁴⁸² This continuous dialogue involves a variety of parties (*i.e.*, the states, the Federal government—especially EPA—and the general public) and occurs through a variety of means, including several rulemaking proceedings. After NHTSA first raised the issue of preemption in 2002 when proposing standards for MYs 2005–2007 light trucks, the agency explored preemption at great length in response to extensive public comment in its August 2005 NPRM and its April 2006 final rule for MYs 2008–2011 light trucks.

During the period between the NPRM and the final rule for MYs 2008–2011 light trucks, California separately requested that the EPA grant a waiver of CAA preemption, pursuant to Section 209 of that act, for its Greenhouse Gas Emissions regulation. If EPA granted the waiver, the CAA would under certain circumstances allow other states to adopt the same regulation pursuant to CAA Section 177, without being preempted by the CAA.

In 2007, the Supreme Court ruled in *Massachusetts v. EPA* that carbon

⁴⁸¹ 67 FR 77025 (December 16, 2002).

⁴⁸² See Appellants Opening Brief filed on behalf Michael P. Kenny in *Central Valley Chrysler-Plymouth, Inc. et al. v. Michael P. Kenny*, No. 02–16395, at p. 33 (9th Cir. 2002).

dioxide is an “air pollutant” within the meaning of the CAA and thus potentially subject to regulation under that statute. The Supreme Court did not consider the issue of preemption under EPCA of state laws or regulations regulating CO₂ tailpipe emissions from automobiles, but it did address the relationship between EPA and NHTSA rulemaking obligations.⁴⁸³ Later that year, two Federal district courts in Vermont and California ruled that the GHG motor vehicle emission standards adopted by those states were not preempted under EPCA.⁴⁸⁴ Still later that year, Congress enacted EISA, amending EPCA by mandating annual increases in passenger car and light truck CAFE standards through MY 2020 and maximum feasible fuel economy standards subsequently.⁴⁸⁵

In March 2008, EPA denied California’s request for a waiver of CAA preemption.⁴⁸⁶ In May 2008, NHTSA issued a proposal for MYs 2011–2015 standards, which included a significant discussion of EPCA preemption and a proposed regulatory statement to provide that state vehicle tailpipe CO₂ standards are related to fuel economy and therefore expressly preempted under EPCA, and that they conflict with the goals and objectives of EPCA and therefore also impliedly preempted.⁴⁸⁷ The Bush Administration did not issue a final rule for MYs 2011–2015.

A number of significant actions happened in quick succession at the beginning of the prior Administration. The first day post-inauguration, CARB petitioned for reconsideration of EPA’s denial of a waiver of CAA preemption for California’s GHG emissions standards for 2009 and later model year vehicles.⁴⁸⁸ Several days later, on January 26, 2009, President Obama issued a memorandum requesting, among other things (including

⁴⁸³ The Court reasoned that the fact that NHTSA “sets mileage standards in no way licenses EPA to shirk its environmental responsibilities. EPA has been charged with protecting the public’s ‘health’ and ‘welfare,’ . . . a statutory obligation wholly independent of DOT’s mandate to promote energy efficiency. . . . The two obligations may overlap, but there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency.” *Massachusetts v. EPA*, 549 U.S. 497, 532 (2007).

⁴⁸⁴ *Green Mountain Chrysler v. Crombie*, 508 F.Supp.2d 295 (D. Vt. 2007); *Central Valley Chrysler-Jeep, Inc. v. Goldstene*, 529 F.Supp.2d 1151 (E.D. Cal. 2007), as corrected (Mar. 26, 2008).

⁴⁸⁵ Public Law 110–140 (2007).

⁴⁸⁶ 73 FR 12156 (Mar. 6, 2008).

⁴⁸⁷ 73 FR 24352 (May 2, 2008).

⁴⁸⁸ For background on CARB’s petition, see EPA’s Notice of Decision Granting a Waiver of Clean Air Act Preemption for California’s 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles, 74 FR 32744 (Jul. 8, 2009).

consideration of EPCA preemption in light of *Massachusetts v. EPA* and other laws), that NHTSA's rulemaking be divided into two parts—one regulation establishing standards for model year 2011 only, and another for subsequent years. Less than two months after that memorandum, on March 6, 2009, NHTSA issued its final rule for MY 2011 vehicles and announced that it would consider EPCA preemption in subsequent rulemakings.⁴⁸⁹ Then, on May 19, 2009, the White House announced a coordinated program addressing motor vehicle fuel economy and greenhouse gas emissions, to be known as the “National Program,” whereby NHTSA and EPA would jointly establish rules to harmonize compliance requirements for manufacturers. As part of the National Program, several manufacturers and their trade associations announced their commitment to take several actions, including agreeing not to contest forthcoming CAFE and GHG standards for MYs 2012–2016; not to challenge any grant of a CAA preemption waiver for California's GHG standards for certain model years; and to stay and then dismiss all pending litigation challenging California's regulation of GHG emissions, including litigation concerning EPCA preemption of state GHG standards.⁴⁹⁰

Less than two months later, in July 2009, EPA granted California's January 2009 request for reconsideration of the CAA preemption waiver denial, allowing California to establish its own GHG standards under the CAA.⁴⁹¹ In granting the preemption waiver, EPA acknowledged that its analysis was based solely on CAA considerations and did not “attempt to interpret or apply EPCA,” concluding that “EPA takes no position regarding whether or not California's GHG standards are preempted under EPCA.”⁴⁹²

In the subsequent MYs 2012–2016 CAFE rulemaking, NHTSA elected to defer consideration of EPCA preemption concerns because of the “consistent and coordinated Federal standards that apply nationally under the National Program.”⁴⁹³ Later, in establishing MYs 2017–2021 CAFE standards, NHTSA pointed out that after finalization of the MYs 2012–2016 CAFE standards, California amended its GHG regulations to provide that manufacturers could elect to comply with the EPA GHG

requirements and be deemed to comply with California's standards, and that this amendment facilitated the National Program by allowing a manufacturer to “meet all standards with a single national fleet.”⁴⁹⁴ NHTSA, at the time, erroneously saw this as obviating consideration of EPCA preemption. At the same time, the agency did not address whether California's ZEV program would be preempted since it has never been part of the National Program.

2. Preemption Analysis

Present circumstances require NHTSA to address the issue of preemption. Despite past attempts by NHTSA and EPA to harmonize their respective and related regulations, the automotive industry and U.S. consumers now face regulatory uncertainty and increased costs, in no small part as a result of California's separate GHG emissions and ZEV program. NHTSA and EPA now seek to address these concerns with this rulemaking proposal, in the interest of regulatory certainty and the clear prospect for disharmony with conflicting state requirements.⁴⁹⁵ NHTSA is also guided by a desire to obtain comments from state and local officials and other members of the public to inform fully the agency's position on this important issue.⁴⁹⁶

(a) EPCA Preemption

EPCA's express preemption language is broad and clear:

When an average fuel economy standard prescribed under this chapter is in effect, a State or a political subdivision of a State may not adopt or enforce a law or regulation related to fuel economy standards or average fuel economy standards for automobiles covered by an average fuel economy standard under this chapter.⁴⁹⁷

Unlike the CAA, EPCA does not allow for a waiver of preemption. Nor does EPCA allow for states to establish or enforce an identical or equivalent

regulation. In a further indication of Congress' intent to ensure that state regulatory schemes do not impinge upon EPCA's goals, the statute preempts state laws merely *related to* fuel economy standards or average fuel economy standards. Here, NHTSA intends to assert preemption only over state requirements that directly affect corporate average fuel economy.

The Supreme Court has interpreted similar statutory preemption language on several occasions, concluding that a state law “relates to” a Federal law if it “has a connection with or refers to” the subject of the Federal law.⁴⁹⁸ The Court, citing similar Federal statutory language, extended the application of the “related to” standard to the Airline Deregulation Act in *Morales v. Trans World Airlines, Inc.*,⁴⁹⁹ concluding that, “[f]or purposes of the present case, the key phrase, obviously, is ‘relating to.’ The ordinary meaning of these words is a broad one—‘to stand in some relation; to have bearing or concern; to pertain; refer; to bring into association with or connection with,’ . . .—and the words thus express a broad pre-emptive purpose.”⁵⁰⁰ Courts look “both to the objectives of the . . . statute as a guide to the scope of the state law that Congress understood would survive, [and] to the nature of the effect of the state law on [the Federal standards].”⁵⁰¹

One of Congress' objectives in EPCA was to create a national fuel economy standard, as clearly expressed in 49 U.S.C. 32919(a). In addition to the statute's plain language, which controls, the legislative history of that provision further confirms that Congress intended the provision to be broadly preemptive. As Congress debated proposals that would eventually become EPCA, the Senate bill⁵⁰² sought to preempt State laws only if they were “inconsistent” with Federal fuel economy standards, labeling, or advertising, while the House bill⁵⁰³ sought to preempt State laws only if they were not “identical to” a Federal requirement. The express preemption provision, as enacted, preempts *all* State laws that relate to fuel economy standards. No exception is made for State laws on the ground that

⁴⁹⁴ 76 FR 74854, 74863 (Dec. 1, 2011).

⁴⁹⁵ While California's “deem to comply” provision provided some temporary relief from three different sets of standards, its regulations still mandate that some manufacturers comply with burdensome filing requirements and California may act to revoke the provision. In fact, California is already seeking comment on potentially changing the regulation to provide that manufacturers would only be deemed to comply with CARB requirements if meeting the currently-final EPA standards. See https://www.arb.ca.gov/msprog/levprog/leviii/leviii_dtc_notice05072018.pdf (last accessed May 17, 2018). Moreover, the “deem to comply” provision applies only to tailpipe CO₂ emissions requirements—not to the ZEV program.

⁴⁹⁶ See also E.O. 13132 (Federalism); E.O. 12988 sec. 3(b)(1)(B) (Civil Justice Reform); 54 FR 11765 (Mar. 22, 1989); 58 FR 68274 (Dec. 23, 1993); and 70 FR 21844 (Apr. 27, 2005).

⁴⁹⁷ 49 U.S.C. 32919.

⁴⁹⁸ *Shaw v. Delta Airlines, Inc.*, 463 U.S. 85, 97 (1983) (ERISA case).

⁴⁹⁹ 504 U.S. 374, 383–84 (1992).

⁵⁰⁰ *Id.* at 383.

⁵⁰¹ *California Div. of Labor Standards Enforcement v. Dillingham Constr., N.A., Inc.*, 519 U.S. 316, 325 (1997), (quoting *N.Y. Conference of Blue Cross & Blue Shield Plans v. Travelers Ins. Co.*, 514 U.S. 645, 656 (1995)).

⁵⁰² S. 1883, 94th Cong., 1st Sess., Section 509.

⁵⁰³ H.R. 7014, 94th Cong., 1st Sess., Section 507 as introduced, Section 509 as reported.

⁴⁸⁹ 74 FR 14196 (Mar. 6, 2009).

⁴⁹⁰ 75 FR 25324, 25328 (May 7, 2010).

⁴⁹¹ 74 FR 32744 (Jul. 8, 2009).

⁴⁹² 74 FR at 32783 (Jul. 8, 2009).

⁴⁹³ 75 FR 25324, 25546 (May 7, 2010); see also 74 FR 49454, 49635 (Sep. 28, 2009).

they are consistent with or identical to Federal requirements.⁵⁰⁴

In enacting EISA, Congress did not repeal or amend EPCA’s express preemption provision. Congress did, however, adopt a savings provision regarding the effect of EISA, and the amendments made by it:

Nothing in this Act or an amendment made by this Act supersedes, limits the authority provided or responsibility conferred by, or authorizes any violation of any provision of law (including a regulation), including any energy or environmental law or regulation.

We understand this statutory language to prevent EISA from limiting pre-existing authority or responsibility conferred by any law or from authorizing violation of any law. By the same token, the savings provision does not purport to expand pre-existing authority or responsibility. Thus, to the extent that EPCA’s express preemption provision limited State authority and responsibility *prior* to the enactment of EISA, it continues to limit such authority and responsibility to the same extent *after* the enactment of EISA. We recognize that the Congressional Record contains statements regarding the savings provision indicating that certain members of Congress may have considered this language as allowing California to set tailpipe GHG emissions standards in contravention of EPCA’s express preemption provision. Note, however, that statements made on the floor of the Senate or House before the votes on EISA cannot expand the scope of the savings provision or even be used to “clarify” it, given the unambiguous plain meaning of both the savings provision and EPCA’s express preemption provision. If Congress had wanted to narrow the express preemption provision, it could have chosen to include such an amendment in EISA. It did not.

(b) Tailpipe CO₂ Emissions Regulations or Prohibitions are Related to Fuel Economy Standards

This broad statutory preemption provision also necessarily governs state regulations over greenhouse gas emissions. GHG emissions, and particularly CO₂ emissions, are mathematically linked to fuel economy; therefore, regulations limiting tailpipe CO₂ emissions are directly related to fuel economy.⁵⁰⁵ To summarize, most light vehicles are powered by gasoline internal combustion engines. The combustion of gasoline produces CO₂ in amounts that can be readily calculated. CO₂ emissions are always and directly

linked to fuel consumption because CO₂ is a necessary and inevitable byproduct of burning gasoline. The more fuel a vehicle burns or consumes, the more CO₂ it emits. To the extent that light vehicles are *not* powered by internal combustion engines, their use generally involves some release of CO₂ or other GHG emissions, even if indirectly, associated with the vehicle performing its work of traveling down the road. CNG and LPG vehicles release CO₂ during combustion. Even for battery-electric vehicles, fossil fuels are used in at least some part of production of electricity in virtually all parts of the country, and that electricity is used to move the vehicles. And with hydrogen vehicles, methane remains a major part of the generation of hydrogen fuel, which is also used to move those vehicles. Carbon dioxide is thus a byproduct of moving virtually if not literally all light-duty vehicles, and the amount of CO₂ released directly correlates to the amount of fossil fuels used to power the vehicle so it can move.

EPCA has specified since its inception that compliance with CAFE standards is to be determined in accordance with test and calculation procedures established by EPA.⁵⁰⁶ More specifically, the tests are to be performed using “the same procedures for passenger automobiles the Administrator used for model year 1975 . . . procedures that give comparable results.” Under these procedures, compliance with the CAFE standards is and has always been based on the rates of emission of CO₂, CO, and hydrocarbons from covered vehicles, but primarily on the emission rates of CO₂. In the measurement and calculation of a given vehicle model’s fuel economy for purposes of determining a manufacturer’s compliance with Federal fuel economy standards, the role of CO₂ is approximately 100 times greater than the combined role of the other two relevant carbon exhaust gases. Given that the amount of CO₂, CO, and hydrocarbons emitted from a vehicle’s tailpipe relates directly to the amount of fuel it consumes, EPA can reliably and accurately convert the amount of those gases emitted by that vehicle into the miles per gallon achieved by that vehicle. In recognizing that 1975 test procedures were sufficient to measure fuel economy performance, Congress recognized the direct relationship between CO₂ emissions and fuel economy standards, while in the same piece of legislation expressly

preempting state standards that are related to fuel economy standards, when Federal fuel economy standards are in place.

In mandating Federal fuel economy standards under EPCA, Congress has expressly preempted any state laws or regulations relating to fuel economy standards. A state requirement limiting tailpipe CO₂ emissions is such a law or regulation because it has the direct effect of regulating fuel consumption.

Given that substantially reducing CO₂ tailpipe emissions from automobiles is unavoidably and overwhelmingly dependent upon substantially increasing fuel economy through installation of engine technologies, transmission technologies, accessory technologies, vehicle technologies, and hybrid technologies, increases in fuel economy inevitably produce commensurate reductions in CO₂ tailpipe emissions. Since there is but one pool of technologies⁵⁰⁷ for reducing tailpipe CO₂ emissions and increasing fuel economy available now and for the foreseeable future, regulation of CO₂ emissions and fuel consumption are inextricably linked. Such state regulations are therefore unquestionably “related” and expressly preempted under 49 U.S.C. 32919.

Moreover, state standards that have the effect of regulating tailpipe CO₂ emissions or fuel economy are likewise related to fuel economy standards and likewise preempted. For instance, if a state were to regulate *all* tailpipe GHG emissions from a vehicle, and not *just* CO₂, the state would nonetheless regulate tailpipe CO₂ emissions, since CO₂ emissions comprise the overwhelming majority of tailpipe carbon emissions. EPCA preempts such a standard.

Likewise, a state law prohibiting *all* tailpipe emissions, carbon or otherwise, from some or all vehicles sold in the state, would relate to fuel economy standards and be preempted by EPCA, since the majority of tailpipe emissions consist of CO₂. We recognize that this preempts state programs, such as California’s ZEV mandate, that establish requirements that a portion of a vehicle’s fleet sold or purchased consist of vehicles that produce no tailpipe emissions.

(c) Other GHG Emissions Requirements May Not Be Preempted by EPCA

While EPCA expressly preempts state tailpipe CO₂ emission limits, some GHG emissions from vehicles have no

⁵⁰⁴ See 71 FR 17566, 17657 (April 6, 2006).

⁵⁰⁵ 71 FR at 17659, *et seq.*

⁵⁰⁶ 49 U.S.C. 32904(c).

⁵⁰⁷ With the minor exception of regulating the carbon intensity of fuels—an activity not preempted by EPCA.

relation to fuel economy and are therefore outside the scope of EPCA preemption. For instance, vehicle air conditioning units can cause GHG emissions by leaking refrigerants when the system is recharged or when it is crushed at the end of the vehicle's life. Since such emissions have no bearing on a vehicle's fuel economy performance or tailpipe CO₂ emissions, states can pass laws specifically regulating or even prohibiting such vehicular refrigerant leakage without relating to fuel economy if doing so would be otherwise consistent with Federal law. Therefore, EPCA would not preempt such laws, if narrowly drafted so as not to include tailpipe CO₂ emissions. If, however, a state law sought to limit the combined GHG emissions from a motor vehicle, in a manner that *would include* tailpipe CO₂ emissions, EPCA would preempt that portion of the law limiting tailpipe CO₂ emissions.

Similarly, state safety requirements may have a merely incidental impact on fuel economy and not relate to fuel economy. For instance, a state may mandate that children traveling in motor vehicles sit in child safety seats. Child safety seats add weight, and added weight has an impact on fuel economy. This impact is merely incidental, however, and does not directly relate to fuel economy standards.

Likewise, EPA has recognized that California may apply for a waiver of CAA preemption for vehicle emissions, which must be granted in certain circumstances. That said, EPCA does preempt any regulation limiting or prohibiting CO₂ emissions or *all* tailpipe emissions, as such regulations have the effect of regulating CO₂ emissions and relate to fuel economy standards.⁵⁰⁸

⁵⁰⁸ NHTSA notes that over the last decade CARB has complicated its regulation of smog-forming emissions (the original purpose of the Section 209 CAA waiver) by combining it with regulation of GHG and, principally, CO₂ emissions as well as the ZEV mandate. Since EPCA prohibits state regulation of CO₂ emissions, a state program that combines regulation of the two groups of pollutants is preempted to the extent that the program relates to fuel economy. A regulatory regime in which smog-forming pollutants are addressed without also directly or indirectly regulating fuel economy is not preempted under EPCA.

Additionally, NHTSA notes that some suggest that insofar as carbon dioxide emissions cause global climate change, they indirectly worsen air quality by (1) increasing formation of smog, because the chemical process that forms ground-level ozone occurs faster at higher temperatures, and (2) increasing ragweed pollen, which can cause asthma attacks in allergy sufferers. Comment is sought on the extent to which the zero-tailpipe-emissions vehicles compelled to be sold by California's ZEV program reduce temperatures in the parts of California which are in non-attainment for ozone

NHTSA invites comments on the extent to which a state standard can have some incidental impact on fuel economy or CO₂ emissions without being "related to" fuel economy standards.

(d) A Waiver of CAA Preemption Does Not Affect, in Any Way, EPCA Preemption

When a state establishes a standard related to fuel economy, it does so in violation of EPCA's preemption statute and the standard is therefore void *ab initio*.

Federal preemption is rooted in the Supremacy Clause of the U.S. Constitution.⁵⁰⁹ Courts have long recognized that the Supremacy Clause of the Constitution gives Congress the power to specifically preempt State law.⁵¹⁰ Broadly speaking, the United States Supreme Court has long held that "an act done in violation of a statutory prohibition is void,"⁵¹¹ and has specifically noted that such acts are not merely "voidable at the instance of the government" but void from the outset.⁵¹² The Ninth Circuit stated it more plainly: "Under Federal law, an act occurring in violation of a statutory mandate is void *ab initio*."⁵¹³ Discussing the Supremacy Clause, the Supreme Court explicitly explained that, "[i]t is basic to this constitutional command that all conflicting state provisions be without effect."⁵¹⁴ And at least one Federal Court of Appeals explicitly stated that the Supremacy Clause means "state laws that 'interfere with, or are contrary to the laws of Congress' are void *ab initio*."⁵¹⁵

While both the CAA and EPCA may preempt state laws limiting GHG emissions from motor vehicles, avoiding preemption (by waiver or otherwise) under one Federal law has no bearing on the other Federal law's preemptive effect. Section 209 of the CAA, which provides for the possible waiver of CAA

and which contain dense populations of allergy sufferers.

⁵⁰⁹ U.S. Const. art VI, cl. 2.
⁵¹⁰ See *Gibbons v. Ogden*, 22 U.S. 1 (1824).
⁵¹¹ *Ewert v. Bluejacket*, 259 U.S. 129, 138 (1922), quoting *Waskey v. Hammer*, 223 U.S. 85, 94 (1912).
⁵¹² *Waskey*, 223 U.S. at 92.
⁵¹³ *Cabazon Band of Mission Indians v. City of Indio, Cal.*, 694 F.2d 634, 637 (9th Cir. 1982).
⁵¹⁴ *Maryland v. Louisiana*, 451 U.S. 725, 746 (1981) (citing *McCulloch v. Maryland*, 4 Wheat. 316, 427 (1819)). Other courts have used similar language to describe the impact of preemption. See, e.g., *Nathan Kimmel, Inc. v. DowElanco*, 275 F.3d 1199, 1203 (9th Cir. 2002) (explaining preempted state laws are "without effect"); *Sweat v. Hull*, 200 F.Supp.2d 1162, 1172 (D. Ariz. 2001) (explaining preempted state laws are "ineffective").
⁵¹⁵ *Antilles Cement Corp. v. Fortuno*, 670 F.3d 310, 323 (1st Cir. 2012) (quoting *Gibbons v. Ogden*, 22 U.S. (9 Wheat.) 1 (1824)).

preemption, makes clear that waiver of preemption under that statute operates only to relieve "application of this section"—the preemption provision of the CAA—and not application of other statutes.⁵¹⁶ EPA and NHTSA tentatively agree that a waiver under the CAA does not also waive EPCA preemption.

The Vermont and California Federal district court decisions mentioned above involved challenges to a California Air Resources Board regulation establishing vehicle tailpipe GHG emission standards. The courts concluded that EPCA did not preempt such standards. In both decisions, the courts placed much weight upon the fact that California had petitioned EPA for a waiver of CAA preemption pursuant to 42 U.S.C. 7543(b).

NHTSA and EPA do not agree with the district courts' express preemption analyses. EPCA preempts state laws and regulations "*related to* fuel economy standards or average fuel economy standards for automobiles covered by an average fuel economy standard."⁵¹⁷ The courts in *Green Mountain Chrysler* and *Central Valley Chrysler-Jeep* recognized the relationship between CO₂ emissions and fuel economy. Nonetheless, they erroneously concluded that the "related to" language in EPCA's preemption clause should be construed "very narrowly" and adopted a novel interpretation of "related to."⁵¹⁸ The courts failed to recognize precedent providing broad effect to other preemption statutes using terms similar to "related to," as discussed above.

(e) A Clean Air Act Waiver Does Not "Federalize" EPCA-Preempted State Standards

The district court in *Green Mountain Chrysler* concluded that it could resolve the challenge to Vermont's regulations without directly considering the application of EPCA's preemption provision. The court said that the dispute did not concern preemption but concerned reconciling two different Federal statutes (EPCA and the CAA). In this regard, the district court stated that if EPA approved California's waiver petition (which had not yet occurred), then Vermont's GHG regulations become "other motor vehicle standards" that NHTSA must consider in setting

⁵¹⁶ 42 U.S.C. 7543(b)(1) (emphasis added); see also 42 U.S.C. 7543(b)(3) ("compliance with such State standards shall be treated as compliance with applicable Federal standards for purposes of this subchapter") (emphasis added).

⁵¹⁷ 49 U.S.C. 32919(a) (emphasis added).

⁵¹⁸ E.g., 529 F.Supp.2d at 1176.

CAFE standards.⁵¹⁹ In the court’s view, once EPA grants a waiver, compliance with California’s standards is deemed to satisfy all Federal standards—not just those of the CAA. In states that adopt California’s standards, compliance with that standard would be deemed to satisfy all Federal standards as well. With this Federal accommodation of state standards, the court concluded, Vermont’s regulations would stand.

The court’s premise that preemption provisions and principles do not apply is not based on precedent and is not supported by applicable law. In fact, the district court in *Central Valley Chrysler-Jeep* recognized that “[t]he Green Mountain court never actually offers a legal foundation for the conclusion that a state regulation granted waiver under [CAA] section 209 [42 U.S.C. 7543] is essentially a federal regulation such that any conflict between the state regulation and EPCA is a conflict between federal regulations.”⁵²⁰ NHTSA and EPA disagree with the conclusion of these decisions and reaffirm the longstanding position that state standards regulating tailpipe GHG emissions, such as the standards challenged in the California and Vermont district court cases, are preempted by EPCA because they “relate to” fuel economy standards. We also note that those courts failed to consider, much less give any weight to, NHTSA’s views of preemption, as the expert agency with authority over the Federal fuel economy program.⁵²¹ The United States opposed, as *amicus curiae*, the *Green Mountain Chrysler* decision on appeal to the Second Circuit, but the Second Circuit did not issue a decision on appeal⁵²² due to the

automotive industry’s withdrawal of appeals. As explained above, the withdrawal of those appeals was a precondition to the 2010 issuance of the final rule establishing the “National Program” of fuel economy standards and GHG emission standards for MYs 2012–2016.

In their appeals of the *Green Mountain Chrysler* decision, the vehicle manufacturer associations argued that the operation of EPCA’s express preemption provision does not require that a conflict be shown between the Federal and state standards, that the Federal and state standards be identical, or that the Federal and state standards serve the same purpose. We agree. The conflict principles of implied preemption do not apply in fields where Congress has enacted an express preemption provision prohibiting even the existence of state standards. The statutory test, whether the state standards are “related to” the Federal standards, is met by showing that the state GHG emission standards are not simply related to, but actually the functional equivalent of, the Federal fuel economy standards. The district court itself recognized that “there is a near-perfect correlation between fuel consumed and carbon dioxide released.” Neither the inclusion in the state standard of emissions for which that relationship does not exist, nor the assigning to the state standard of a purpose other than energy conservation, diminishes the statutory implications of the state standard’s meeting the relatedness test. Those unrelated types of emissions constitute a very low percentage of the overall tailpipe emissions. Finally, while there are means of compliance with the state standard other than improving fuel economy, their contributions to compliance are minor. Improving fuel economy is the only feasible method of achieving full compliance. Again, NHTSA and EPA agree.

The *Central Valley Chrysler-Jeep* court went further, noting that while NHTSA is required to give consideration to “other standards,” including those “promulgated by EPA,” “[t]here is no corresponding duty by EPA to give consideration to EPCA’s regulatory scheme. This asymmetrical allocation by Congress of the duty to consider other governmental regulations indicates that Congress intended that DOT, through NHTSA, is to have the burden to conform its CAFE program under EPCA to EPA’s determination of

what level of regulation is necessary to secure public health and welfare.”⁵²³

In support of its position, the *Central Valley Chrysler-Jeep* found persuasive the *Green Mountain Chrysler* court’s view that California emissions regulations under CAA Section 209 have always been considered “other standards” on fuel economy. As mentioned previously in the discussion of the “other standards” to be considered as factors in establishing maximum feasible fuel economy standards, EPCA, as originally enacted, contained a specific self-contained provision that provided that any manufacturer could apply to DOT for modification of an average fuel economy standard for model years 1978 through 1980 if it could show the likely existence of a “Federal standards fuel economy reduction,” defined to include EPA-approved California emissions standards that reduce fuel economy. The court reasoned that “in 1975 when EPCA was passed, Congress unequivocally stated that federal standards included EPA-approved California emissions standards.”⁵²⁴ However, when EPCA was recodified in 1994, “all reference to the modification process applicable for model years 1978 through 1980, including the categories of federal standards, was omitted as executed.”⁵²⁵ The court noted that the legislative intent of the 1994 recodification was not intended to make a substantive change to the law.⁵²⁶ Thus, the court concluded that “[i]f the recodification worked no substantive change in the law, then the term ‘other motor vehicle standards of the Government’ continues to include both emission standards issued by EPA and emission standards for which EPA has issued a waiver under Section 209(b) of the CAA, as it did when enacted in 1975.”⁵²⁷

NHTSA believes that the district court misread EPCA to the point of turning it on its head. As discussed previously in this document, the “federal standards” definition discussed by the court existed in a self-contained scheme allowing manufacturers to petition NHTSA for modification of the fuel economy requirements *only* between 1978 and

⁵¹⁹ *Green Mountain Chrysler*, 508 F.Supp.2d at 398.

⁵²⁰ *Central Valley Chrysler-Jeep*, 529 F.Supp.2d at 1165. Congress must state its intention clearly to accord a state law the status of Federal law, which it did not do in either in Section 209(b) of the CAA or in EPCA. See, e.g., *Indep. Cmty. Bankers Ass’n v. Bd. of Governors*, 820 F.2d 428, 436–37 (D.C. Cir. 1987) (recognizing that, although Congress “has the power to assimilate state law,” “[s]uch decisions require an unequivocal congressional expression” because “some [state] restrictions would in all likelihood conflict with [other] existing Federal laws”).

⁵²¹ See *Geier v. American Honda Motor Co.*, 529 U.S. 861, 883 (2000) (“Congress has delegated to DOT authority to implement the statute; the subject matter is technical; and the relevant history and background are complex and extensive. The agency is likely to have a thorough understanding of its own regulation and its objectives and is ‘uniquely qualified’ to comprehend the likely impact of state requirements.”); *Medtronic, Inc. v. Lohr*, 518 U.S. 470, 496 (1996) (“agency is uniquely qualified to determine whether a particular form of state law stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress”) (internal quotation marks omitted).

⁵²² See Proof Brief for the United States as Amicus Curiae, 07–4342–cv (2d Cir. filed Apr. 16, 2008).

⁵²³ *Central Valley Chrysler-Jeep*, 529 F.Supp.2d at 1168.

⁵²⁴ *Central Valley Chrysler-Jeep*, 529 F.Supp.2d at 1173 (quoting *Green Mountain Chrysler*, 508 F.Supp.2d at 345). EPCA Section 502(d)(3)(D)(i) provided: “Each of the following is a category of Federal standards: . . . Emissions standards under Section 202 of the Clean Air Act, and emissions standards applicable by reason of Section 209(b) of such Act.”

⁵²⁵ *Id.*

⁵²⁶ *Id.*

⁵²⁷ *Id.*

1980, and thus has no application either at the time of the decision or today. And even if that definition of “federal standards” were applied to EPCA generally, NHTSA would balance that against other factors enumerated in EPCA that it “shall” consider in setting maximum feasible fuel economy standards. However, the district courts’ view is that this factor instead creates an “obligation” to “harmonize” CAFE standards with state emissions regulations under a CAA Section 209 waiver.⁵²⁸ In other words, under the district courts’ opinions, a state standard controls what NHTSA does, and the agency therefore has no further discretion to consider the other factors Congress directed it to consider. Consistent with the legislative history and NHTSA’s long-standing interpretations, NHTSA interprets EPCA, a statute which it administers in implementing the national fuel economy program, as providing that the requirement to “consider” the four EPCA statutory factors set forth in 49 U.S.C. 32902(f) does not mean the agency is obligated to harmonize CAFE standards with state tailpipe CO₂ emissions standards. EPA concurs that a CAA waiver does not also waive the effect of any other Federal law, including EPCA.

As discussed above in the “other standards” section of this rulemaking, NHTSA further believes that the district courts in *Green Mountain Chrysler* and *Central Valley Chrysler-Jeep* misconstrued the provision in EPCA as enacted in 1975 that allowed manufacturers to petition NHTSA to reduce CAFE standards that Congress had set for model years 1978, 1979, and 1980 if there was a “Federal standards fuel economy reduction.”⁵²⁹ This provision did not involve a factor to be balanced in determining fuel economy standards. It provided for a reduction in fuel economy standards for cars at a time when only conventional pollutants were regulated. The provision was specifically designed to address California’s then-existing smog regulations, particularly with regard to the additional weight (which other things being equal reduces fuel economy) associated with catalytic converters. In so doing, Congress recognized the potential interplay for three model years between California’s smog regulations and the possibility that it could reduce Federal fuel economy standards for those model years.⁵³⁰

Thus, EPCA went on to include “Emissions standards under Section 202 of the CAA, and emissions standards applicable by reason of Section 209(b) of such Act” in its list of “categor[ies] of Federal standards.”⁵³¹

Because California standards to combat smog (not GHG regulations) “by reason of section 209(b)” could be considered to reduce federal fuel economy standards for three years, the district courts erroneously believed that state CO₂ regulations are somehow now “federal” standards under 49 U.S.C. 32902(f). On its face, this language applied only to three long past model years and only to reducing standards, not setting them. “For purposes of this subsection” referred to section 502(d) of EPCA—not EPCA section 502(e) [now 49 U.S.C. 32902(f)] which sets forth the EPCA factor of “the effect of other Federal motor vehicle standards on fuel economy.” After MY 1980, section 502(d) became obsolete. When EPCA was recodified in 1994, section 502(d) was dropped as executed and therefore surplusage. As the listing of Federal standards in 502(d) never had any application outside that subsection and ceased to have significance when that subsection became obsolete, it had and has no bearing on the recodified version of EPCA. The recodification to rescind this subsection, which had no substantive significance for 14 years, was entirely non-substantive.⁵³²

NHTSA believes that the district courts in *Green Mountain Chrysler* and *Central Valley Chrysler-Jeep* sought to give a CAA waiver for the California GHG regulation an effect far beyond the terms of the CAA provision authorizing such a waiver. As discussed previously, the courts overlooked the fact that the CAA itself makes clear that waiver of preemption under that statute operates only to relieve application of the CAA preemption statute.⁵³³ State GHG regulations, even if subject to an EPA waiver, would remain regulations “adopt[ed] or enforc[ed]” by “a State or political subdivision of a State” and therefore would be subject to preemption by EPCA.⁵³⁴

The courts’ view suggests an apparent misunderstanding of the underlying concerns and purposes of the

requirement to consider other standards. There is no hint in the histories of either EPCA or EISA of an intent to give other standards special, much less superior, status under EPCA. The limited concerns and purpose were to ensure that any adverse effects of other standards on fuel economy considered in connection with the fuel economy standards. Those concerns are evident in a 1974 report, entitled “Potential for Motor Vehicle Fuel Economy Improvement,” submitted to Congress by the Department of Transportation and EPA.⁵³⁵ That report noted that the weight added by safety standards *would* and one set of emissions standards *might* temporarily reduce the level of achievable fuel economy.⁵³⁶ These concerns can also be found in the congressional reports on EPCA.⁵³⁷

(f) State Tailpipe GHG Emissions Standards Conflict With EPCA and are Therefore Preempted Impliedly

Notwithstanding that state standards limiting or prohibiting tailpipe CO₂ emissions are expressly preempted by EPCA, they also clearly conflict with the objectives of EPCA and would therefore also be impliedly preempted.

State regulation of CO₂ emissions would frustrate Congress’ objectives in establishing the CAFE program and conflict with NHTSA’s efforts to implement the program in a manner consistent with EPCA. While the overarching purpose of EPCA may be energy conservation, Congress directed NHTSA to consider four factors in establishing maximum feasible fuel economy standards. NHTSA balances these factors to determine, through the CAFE program, the amount of energy the light-duty vehicle fleet should conserve. Allowing a state to make a state-specific determination for how much energy should be conserved (in the same way that the CAFE program conserves energy) necessarily frustrates NHTSA’s efforts to make that determination for the country as a whole because it sends the industry in different directions in order to try to meet multiple standards at once rather than allowing the industry to focus its resources and efforts on the path laid out at the Federal level. This is particularly true when considering that when California sets standards, other states can choose to adopt those

⁵³¹ *Id.* § 502(d)(3)(D).

⁵³² The recodification was “[t]o revise, codify, and enact *without substantive change*” laws related to transportation. Public Law 103–272 (emphasis added).

⁵³³ 42 U.S.C. 7543(b)(1) (emphasis added); *see also* 42 U.S.C. 7543(b)(3) (“compliance with such State standards shall be treated as compliance with applicable Federal standards *for purposes of this subchapter*”) (emphasis added).

⁵³⁴ 49 U.S.C. 32919(a).

⁵³⁵ This report was prepared in compliance with Section 10 of the Energy Supply and Environmental Coordination Act of 1974, Public Law 93–319.

⁵³⁶ *See id.* at 6–8 and 91–93.

⁵³⁷ *See* page 22 of Senate Report 94–179, pages 88 and 90 of House Report 94–340, and pages 155–7 of the Conference Report, Senate Report 94–516.

⁵²⁸ *Id.* at 1170.

⁵²⁹ Public Law 94–163 sec. 502(d), 89 Stat. 904–05.

⁵³⁰ *See* H.R. No. 94–340, at 87.

standards and thereby further increase the compliance complexity.

A critical objective of EPCA was to establish a single national program to regulate vehicle fuel economy. Congress, in passing EPCA, accomplished this objective by providing broad preemptive power established in the language codified at 49 U.S.C. 32919(a). Other congressional objectives underlying EPCA include avoiding serious adverse economic effects on manufacturers and maintaining a reasonable amount of consumer choice among a broad variety of vehicles. To guide the agency toward the selection of standards meeting these competing objectives, Congress specified four factors that NHTSA must consider in determining the maximum feasible level of average fuel economy and thus the level at which each standard must be set. As discussed above, since the only practical way to reduce tailpipe CO₂ emissions is to improve fuel economy, it would be impossible for a state tailpipe CO₂ emissions standard to be adopted without interfering with CAFE standards. If a state were to establish standards that have the effect of requiring a lower level of fuel economy than CAFE standards, those standards would be meaningless since they would not reduce CO₂ emissions. Instead, a State could only establish a standard that has the effect of requiring a *higher* level of average fuel economy. Setting standards that are more stringent than the fuel economy standards promulgated under EPCA would upset the efforts of NHTSA to balance and achieve Congress's competing goals. Setting a standard above the level judged by NHTSA to be consistent with the statutory consideration after careful consideration of these issues in a rulemaking proceeding would negate the agency's careful analysis and decision-making.

For the same reasons, a state regulation *having the effect of* regulating tailpipe carbon dioxide emissions or fuel economy is likewise impliedly preempted under 49 U.S.C. Chapter 329.

The Vermont and California district court decisions discussed above addressed conflict preemption. The *Green Mountain Chrysler* court concluded that the Vermont GHG standards presented no conflict preemption concerns and rejected the contention that Vermont's GHG regulations would conflict with Congress' intent that there be a single, nationwide fuel economy standard and that those regulations upset NHTSA's careful balancing of the EPCA statutory factors in its rulemaking proceedings. In

rejecting the manufacturers' arguments, the court held that the Vermont standards do not create an obstacle to achieving EPCA's goals because the Vermont standards are, in the court's judgment, consistent with EPCA's standard setting criteria. In reaching that conclusion, the court did not consider the impact of the Vermont standards on the balancing done by NHTSA in setting CAFE standards. For its part, the court in *Central Valley Chrysler-Jeep* concluded that there *was* no conflict preemption, since if California's standards were granted a waiver under CAA section 209 by EPA, they would satisfy CAA objectives and be consistent with EPCA.⁵³⁸ The court simply assumed consistency. If this assumption proved incorrect, to the extent of any incompatibility between the two regimes, "NHTSA is empowered to revise its standards" to take into account California's regulations, according to that court.

NHTSA disagreed with the two district court rulings at the time and continues to do so now. We note that the Vermont decision was appealed and briefed (including an Amicus Brief filed by the United States) prior to the stay and withdrawal of the litigation pursuant to the National Program arrangement described previously. NHTSA was not a party to those cases and is not bound by these decisions. Those erroneous decisions further support the need for NHTSA, as the agency with expert authority to interpret EPCA, to reaffirm its longstanding view of the preemption provision. Moreover, EPA, as the agency charged with administering the CAA, further determines that CAA waivers do not "federalize" state standards; therefore, state standards directly affecting fuel economy are subject to EPCA preemption even if there is a CAA waiver in place.

(g) ZEV Mandates

Another form of EPCA-preempted state regulation is a zero-emission vehicle (ZEV) mandate. Such laws require that a certain number or percentage of vehicles sold or delivered for sale within a state must be ZEVs, vehicles that produce neither smog-forming nor CO₂ tailpipe emissions. ZEV mandates may require either that actual ZEVs be sold or delivered for sale or provide for generation and application of ZEV credits, which may or may not be traded. While NHTSA has not previously commented on the relationship between the ZEV mandates and the CAFE program because the only

feasible means to eliminate tailpipe CO₂ emissions is by eliminating the use of petroleum fuel (*i.e.*, electric or fuel cell propulsion), and because the purpose of the ZEV program is to affect fuel economy,⁵³⁹ ZEV mandates directly relate to fuel economy and are thereby expressly preempted. ZEV mandates are also intended to *force* the development and commercial deployment of ZEVs—regardless of the technological feasibility or economic practicability of doing so—putting the program entirely at odds with critical factors that Congress required NHTSA to consider in establishing fuel economy standards. Therefore, ZEV mandates also interfere with achieving the goals of EPCA and are therefore impliedly preempted.

California's ZEV mandate represents the most prominent example. California initially launched its ZEV mandate in 1990 to force the development and deployment of ZEVs to reduce smog-forming emissions. As California's Low Emission Vehicle and EPA's Tier 3 standards for criteria pollutant emissions have become increasingly stringent, the greater impact of California's ZEV mandate is the reduction of tailpipe GHG emissions. In its latest iteration the ZEV mandate no longer focuses on tailpipe smog forming emissions, a fact that CARB acknowledged in 2012 when applying for a waiver for its Advanced Clean Car Program, in stating "[t]here is no criteria emissions benefit from including the ZEV proposal in terms of vehicle (tank-to-wheel or TTW) emissions. The LEV III criteria pollutant fleet standard is responsible for those emission reductions in the fleet; the fleet would become cleaner regardless of the ZEV regulation because manufacturers would adjust their compliance response to the standard by making less polluting conventional vehicles."⁵⁴⁰

In its current configuration, the ZEV mandate requires manufacturers to generate credits based upon the number of vehicles delivered for retail sale. Vehicles earn varying amounts of ZEV credits depending upon technology and range, with some vehicles earning several credits. Manufacturers delivering for sale certain plug-in hybrid

⁵³⁹ See, e.g., *Fact Sheet: 2003 Zero Emission Vehicle Program*, California Air Resources Board (March 18, 2004), available at <https://www.arb.ca.gov/msprog/zevprog/factsheets/2003zevchanges.pdf> (stating that one of the "significant features of the April 2003 changes to the ZEV regulation" included removal of "all references to fuel economy or efficiency," after a 2002 lawsuit asserting that AT PZEV provisions pertaining to the fuel economy of hybrid electric vehicles were preempted by EPCA).

⁵⁴⁰ Docket No. EPA-HQ-OAR-2012-0562, Pp. 15-16.

⁵³⁸ 529 F.Supp.2d at 1179.

vehicles earn some limited ZEV credits, even though they are not truly ZEVs, but such credits can only satisfy a portion of a manufacturer's ZEV credit requirements. The credit requirements increase annually, with the number of required credits equaling 4.5% of a manufacturer's light duty vehicle sales in 2018, rising to 22% in 2025.⁵⁴¹ To hit this 22% credit requirement, a manufacturer would need to deliver for sale ZEVs totaling somewhere between less than eight percent and 15.4% of their light duty sales in California, per various projections.⁵⁴² With advance notice, manufacturers may elect to use credits earned from over-complying with vehicle tailpipe GHG emission requirements toward partial satisfaction of the ZEV mandate.

The EPA has granted a waiver of CAA preemption under Section 209 of the CAA for California's Advanced Clean Car program, which includes California's ZEV mandate in addition to California's GHG regulation and LEV program. Nine other states have elected to adopt the ZEV mandate pursuant to Section 177 of the CAA⁵⁴³—which, combined with California, represent approximately 30% of United States light duty vehicle sales annually.⁵⁴⁴ Manufacturers must satisfy the ZEV mandate for each state. While, traditionally, manufacturers could apply credits earned in one state to satisfy the requirements of another state, this “travel” provision is limited only to fuel cell electric vehicles beginning with MY 2018.

Accordingly, manufacturers must endeavor to design, produce, and deliver for sale significant numbers of vehicles that produce zero tailpipe CO₂ emissions within *each* state that has adopted the California ZEV mandate.

⁵⁴¹ Cal. Code Regs. tit.13, sec. 1962.2(b).

⁵⁴² The Air Resources Board initially projected that 15.4% of new vehicles delivered for sale would consist of ZEVs. *See, e.g., Staff Report: Initial Statement of Reasons 2012 Proposed Amendments to the California Zero Emission Vehicle Program Regulations*, California Air Resources Board at 48 (Dec. 7, 2011), available at <https://www.arb.ca.gov/regact/2012/zev2012/zevisor.pdf> (stating “[b]y model year 2025, staff expects 15.4 percent of new sales will be ZEVs and [Plug-In Hybrids].”) However, an increased supply of credits and projected increases in battery electric range has resulted in others projecting reduced required ZEV fleet penetration. *See, e.g., What is ZEV?*, Union of Concerned Scientists (Oct. 31, 2016), <https://www.ucsusa.org/clean-vehicles/california-and-western-states/what-is-zev> (projecting “about 8 percent of sales to be ZEVs” in 2025).

⁵⁴³ These states are Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island, and Vermont.

⁵⁴⁴ *See Automotive Retailing: State by State*, National Automobile Dealers Association, <https://www.nada.org/statedata/> (last visited June 25, 2018) (estimating that these states represented 28.6% of new motor vehicle registrations in 2016).

This involves implementation of some of the most expensive and advanced technologies in the automotive industry, regardless of consumer demand (which tends to be lower during periods of sustained relatively-low gasoline prices). The California Air Resources Board's own midterm review report for their Advanced Clean Car program cites estimates from the 2016 Draft Technical Assessment Report relating to the incremental vehicle costs of ZEVs over 2016 vehicles with internal combustion engines.⁵⁴⁵ While stating marginal increased costs have fallen when compared to previous estimates, CARB nevertheless still shows battery electric subcompact vehicles with 75 miles of range, for which consumer demand remains very low, as costing \$7,505 more than ones with an internal combustion engine, with large cars costing \$11,355 more. Battery electric subcompacts with a 200-mile range, for which consumer demand is slightly higher than a 75-mile range, were estimated to cost \$12,001 more than comparable vehicles with internal combustion engines, and large cars \$16,746 more. Even subcompact plug-in hybrids with 40 miles of electric range cost \$9,260 more than internal combustion engine equivalents, and \$13,991 more for large cars. And as discussed above, consumers have not been willing to pay the full cost of this technology—meaning manufacturers are likely to spread the costs of the ZEV mandate to non-ZEV vehicles (and to vehicles sold in other states). This expensive and market-distorting mandate for manufacturers to eliminate vehicle tailpipe CO₂ emissions (and thus petroleum fuel use) for part of their fleets has always interfered with NHTSA's balancing of statutory factors in establishing maximum feasible fuel economy standards, and increasing ZEV credit requirements through 2025 make it all-the-more of an obstacle to accomplishing EPCA's goal of establishing a coherent national fuel economy program. Unlike NHTSA's CAFE program, the ZEV mandate forces investment in specific technology (electric and fuel cell technology) rather than allowing manufacturers to improve fuel economy through more cost-effective technologies that better reflect consumer demand.⁵⁴⁶ This appears to conflict directly with Congress' intent that CAFE standards be performance-

⁵⁴⁵ California Air Resources Board, California's Advanced Clean Cars Midterm Review, Appendix C, Zero Emission Vehicle and Plug-in Hybrid Electric Vehicle Technology Assessment, Table 8, at C-64 (Jan. 18, 2017), available at https://www.arb.ca.gov/msprog/acc/mtr/appendix_c.pdf.

⁵⁴⁶ 13 Cal. Code of Regulations 1962.2.

based rather than design mandates. Moreover, by forcing manufacturers to design, produce, and deliver for sale vehicles that produce no tailpipe CO₂ emissions, the ZEV mandate forces further expensive investments in fuel-saving technology than NHTSA has determined appropriate to require in setting fuel economy standards.⁵⁴⁷ We seek comment on the extent to which compliance with the ZEV mandate frustrates manufacturers' efforts to comply with CAFE standards.

For the reasons outlined above, the California ZEV mandate is expressly and impliedly preempted by EPCA. While EPA had previously granted a waiver of CAA preemption for California's Advanced Clean Car Program, which includes the California ZEV mandate, this waiver has no effect on EPCA preemption of the ZEV mandate, as described above.

3. Conclusion and Severability

Given the importance of an effective, smooth functioning national program to regulate fuel economy and in light of the failure of two Federal district courts to consider NHTSA's analysis and carefully crafted position on preemption, NHTSA is considering taking the further step of summarizing that position in an appendix to be added to the parts in the Code of Federal Regulations setting forth the passenger car and light truck CAFE standards. That proposed regulatory text may be found at the end of this preamble.

NHTSA considers its proposed decision on the maximum feasible CAFE standards for MY 2021–2026 to be severable from its decision on EPCA preemption. Our proposed interpretation of 49 U.S.C. 32919 does not depend on our decision to finalize and a court's decision to uphold, the CAFE standards being proposed today under 49 U.S.C. 32902. NHTSA solicits comment on the severability of these actions.

⁵⁴⁷ *See, e.g., Alan, J., Hardman, S. & Carley, S. Cost implications for automakers' compliance with emission standards from Zero Emissions Vehicle mandate*, TRB 2018 Annual Meeting paper submittal, <https://trid.trb.org/view/1495714> (last accessed June 28, 2018) (finding based on independent research that in 2025, costs reach approximately \$1,500 per vehicle on average to comply with CAFE alone and increase to around \$2,100 per vehicle on average to comply with both CAFE and ZEV).

B. Preemption Under the Clean Air Act

1. Background

(a) Statutory Background: Clean Air Act Section 209(a) Preemption, Section 209(b)(1) California Waiver, and Section 209(b)(1)(A)–(C) Prohibitions on Waiver

EPA’s regulation of new motor vehicles under Title II generally preempts state standards in the same subject area. Section 209(a) of the Act provides that:

“No State or any political subdivision thereof shall adopt or attempt to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to this part. No State shall require certification, inspection or any other approval relating to the control of emissions from any new motor vehicle or new motor vehicle engine as condition precedent to the initial retail sale, titling (if any), or registration of such motor vehicle, motor vehicle engine, or equipment.”⁵⁴⁸

However, Title II affords special treatment to California: Subject to certain conditions, it may obtain from EPA a waiver of section 209(a) preemption. Specifically, section 209(b)(1) of the Act requires the Administrator, after an opportunity for public hearing, to waive application of the prohibitions of section 209(a) to California, if California determines that its State standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards.⁵⁴⁹ A waiver under section 209(b)(1) allows California to “adopt [and] enforce a[] standard relating to the control of emissions from new motor vehicles or new motor vehicle engines.” CAA section 209(a), 42 U.S.C. 7543(a).

But California’s ability to obtain a waiver is not unlimited. The statute provides that “no such waiver will be granted” if the Administrator finds *any* of the following: “(A) [California’s] determination [that its standards in the aggregate will be at least as protective] is arbitrary and capricious, (B) [California] does not need such State standards to meet compelling and extraordinary conditions, or (C) such State standards and accompanying enforcement procedures are not consistent with section [202(a)].”

⁵⁴⁸ Clean Air Act (CAA) section 209(a), 42 U.S.C. 7543(a).

⁵⁴⁹ CAA section 209(b), 42 U.S.C. 7543(b). The provision does not identify California by name. Rather, it applies on its face to “any State which has adopted standards (other than crankcase emission standards) for the control of emissions from new motor vehicles or new motor vehicle engines prior to March 30, 1966.” California is the only State that meets this requirement. See S. Rep. No. 90–403 at 632 (1967). This proposal refers interchangeably to “California” and “CARB” (the California Air Resources Board).

Section 209(b)(1)(A)–(C), 42 U.S.C. 7543(b)(1)(A)–(C) (Emphasis added).⁵⁵⁰ Any one of these three findings operates to forbid a waiver.

(1) EPA’s Proposed Action

EPA is proposing to withdraw the January 9, 2013 waiver of preemption for California’s Advanced Clean Car (ACC) program, Zero Emissions Vehicle (ZEV) mandate, and Greenhouse Gas (GHG) standards that are applicable to new model year (MY) 2021 through 2025. 78 FR 2145 (January 9, 2013.)^{551 552} EPA proposes to do so on multiple grounds.

First, EPA notes that elsewhere in this notice NHTSA has proposed to find that California’s GHG and ZEV standards are preempted under EPCA. Although EPA has historically declined to consider as part of the waiver process whether California standards are constitutional or otherwise legal under other Federal statutes apart from the Clean Air Act, EPA believes that this notice presents a unique situation and that it is appropriate to consider the implications of NHTSA’s proposed conclusion as part of EPA’s reconsideration of the waiver. In this regard, EPA is proposing to conclude that state standards preempted under EPCA cannot be afforded a valid waiver of preemption under CAA 209(b). Accordingly, EPA is proposing to conclude that if NHTSA finalizes a determination that California’s GHG and ZEV standards are preempted, then it would be necessary to withdraw the waiver separate and apart from the analysis under section 209(b)(1)(B), (C) that follows.

Second, under section 209(b)(1)(B) (compelling and extraordinary

⁵⁵⁰ As presented in the United States Code, the cross-reference in prong (C) is to “section 7521(a) of this title,” *i.e.*, CAA section 201(a), 42 U.S.C. 7521(a), which governs EPA’s administration of “Emission standards for new motor vehicles or new motor vehicle engines administration of “Emissions standards for new motor vehicles or new motor vehicle engines.”

⁵⁵¹ This proposed action does not address whether the statutory interpretations and their policy consequences laid out in the proposal may have implications for past waivers granted to California for other standards besides its GHG and ZEV standards. EPA proposes to take this action in the context of this joint rulemaking with NHTSA, and the California standards identified herein are the focus of EPA’s proposal. As circumstances require and resources permit, EPA may in future actions consider whether this proposal, if finalized, makes it appropriate or necessary to revisit past grants of other waivers beyond those granted with respect to California’s GHG and ZEV program.

⁵⁵² EPA proposes to withdraw the waiver for these model years because these are the model years at issue in NHTSA’s proposal. EPA solicits comment on whether one or more of the grounds supporting the proposed withdrawal of this waiver would also support withdrawing other waivers that it has previously granted.

conditions), EPA proposes to find that California does not need its GHG and ZEV standards to meet compelling and extraordinary conditions because those standards address environmental problems that are not particular or unique to California, that are not caused by emissions or other factors particular or unique to California, and for which the standards will not provide any remedy particular or unique to California.

Third, under section 209(b)(1)(C) (consistency with section 202(a)), EPA proposes to find that California’s GHG and ZEV standards are inconsistent with section 202(a) because they are technologically infeasible in that they provide sufficient lead time to permit the development of necessary technology, giving appropriate consideration to compliance costs.⁵⁵³

EPA therefore proposes to make findings under sections 209(b)(1)(B) and (C), either of which, as discussed above, independently triggers the statutory prohibition that “no such waiver will be granted.”

In addition, EPA proposes to conclude that States may not adopt California’s GHG standards pursuant to section 177 because the text, context, and purpose of section 177 support the conclusion that this provision is limited to providing States the ability, under certain circumstances and with certain conditions, to adopt and enforce standards designed to control criteria pollutants to address NAAQS nonattainment.

(2) History of Waiver for California GHG and ZEV Standards, and Associated Issues of Statutory Interpretation

In December 2005, California for the first time applied to EPA for a preemption waiver for GHG standards for MY 2009 and following. EPA denied this request in March 2008, relying on the second prong under section 209(b)(1)(B) and finding that California did not need those standards to meet compelling and extraordinary conditions. In doing so, it noted that GHG standards, unlike prior standards for which California had requested and received waivers, are designed to address *global* air pollution problems—not air pollution problems specific to California. 73 FR 12156, March 6, 2008.

⁵⁵³ Under section 209(b)(1)(C) of the CAA, EPA must deny California’s waiver request if EPA finds that California’s standards and accompanying enforcement procedures are not consistent with section 202(a). Section 202(a) provides that an emission standard shall take effect after such period of time as the Administrator finds necessary to permit development and application of the requisite technology, giving appropriate consideration to compliance costs.

Due to this new circumstance, EPA reconsidered its historic interpretation and application of section 209(b)(1)(B). Although today's proposal contains proposed findings under each prong of 209(b)(1), prong (B) was the only one at issue in the 2008 waiver denial (and EPA's subsequent reversal), and it merits extended discussion at the outset due to its central significance in the policy and legal context and the history underlying today's proposal.

As a general matter, EPA had historically interpreted section 209(b)(1)(B) to require EPA to consider whether, to meet compelling and extraordinary conditions in California, the state needs to have its own separate new motor vehicle program *in the aggregate*.⁵⁵⁴ Under this historical approach, EPA considered California's need for a separate program as a whole, rather than California's need for the particular aspect of the program for which California sought a waiver in any particular instance. (Typically, prior to its ACC program waiver request, California would seek a waiver for only particular aspects of its new motor vehicle program.) In the 2008 GHG waiver denial, EPA determined that this interpretation was inappropriate under the circumstances.

In its 2008 waiver denial, EPA proceeded under two alternative constructions of the statute. Under both of these constructions, EPA determined that it was a reasonable interpretation of section 209(b)(1)(B) to require a separate review of California's need for standards designed to address a global air pollution problem and its effects, as distinct from other portions of California's new motor vehicle program, which up until then had been designed to address local or regional air pollution problems.⁵⁵⁵ Under the first construction, EPA found it relevant that elevated GHG concentrations in California were similar to concentrations found elsewhere in the world, and that local conditions in California, such as the local topography, the local climate, and the significant number of motor vehicles in California, were not the determining factors causing the elevated GHG concentrations found in California and elsewhere. In sum, EPA found that California did not need its GHG standards to meet "compelling and extraordinary conditions"—interpreting "compelling and extraordinary

conditions" to mean environmental problems with *causes* that were specific to California—given that those standards were designed to address global air pollution problems as compared to local or regional air pollution problems caused specifically by certain conditions in California.

EPA in the 2008 waiver denial also applied a second, alternative construction of section 209(b)(1)(B). Under this alternative construction, EPA considered whether the impacts of climate change in California were sufficiently different enough from the impacts felt in the rest of the country such that California could be considered to need its GHG standards to meet compelling and extraordinary conditions—interpreting "compelling and extraordinary conditions" to mean environmental *effects* specific to California.

The next year, following a presidential election and change in administration, EPA reconsidered the 2008 denial at California's request. On reconsideration, EPA reversed course and granted a waiver for California's GHG standards. 74 FR 32744 (July 9, 2009). In granting the waiver, EPA reverted to its historical interpretation of section 209(b)(1)(B), under which it had construed "compelling and extraordinary conditions" to mean environmental problems caused by conditions specific to California and/or effects experienced to a unique degree or in a unique manner in California, and under which it had evaluated California's need for its own, separate new motor vehicle program as a whole, rather than California's need for the specific aspects of its separate program for which it was seeking a waiver. In reverting to this determination, the EPA necessarily determined that it makes no difference whether California seeks a waiver to implement separate standards in response to its own specific, local air pollution problems, or whether California seeks a waiver to implement separate standards designed to address a global air pollution problem.

Since 2009, EPA has continued to adhere to this interpretation and application of section 209(b)(1)(B) when reviewing CARB's waiver requests, regardless of whether the waiver was requested with regard to standards designed to address traditional, local environmental problems, or global climate issues. In this proposal, the EPA proposes to determine that this reversion to the pre-2008 interpretation was not appropriate.

On January 9, 2013, EPA granted CARB's request for a waiver of preemption to enforce its ACC program

regulations pursuant to CAA section 209(b). 78 FR 2112. The ACC program is a single coordinated package comprising regulations for ZEV and low-emission vehicles (LEV) regulations,⁵⁵⁶ for new passenger cars, light-duty trucks, medium-duty passenger vehicles, and certain heavy-duty vehicles, for MY 2015 through 2025. Thus, in terms of proportion, the ACC program is comparable to the combined Federal Tier 3 Motor Vehicle Emissions Standards *and* the 2017 and later MY Light-duty Vehicle GHG Standards.⁵⁵⁷ According to CARB, the ACC program was intended to address California's near and long-term smog issues as well as certain specific GHG emission reduction goals.⁵⁵⁸ 78 FR 2114. See also 78 FR 2122, 2130–31.

The ACC program regulations impose multiple and varying complex compliance obligations that have simultaneous, and sometimes overlapping, deadlines with each

⁵⁵⁶ The LEV regulations in question include standards for both GHG and criteria pollutants (including ozone and PM). Amendments for the LEV III program included replacement of separate nonmethane organic gas (NMOG) and oxides of nitrogen (NO_x) standards with combined NMOG plus NO_x standards, which provides automobile manufacturers with additional flexibility in meeting the new stringent standards; an increase of full useful life durability requirements from 120,000 miles to 150,000 miles, which guarantees vehicles sustain these extremely low emission levels longer; a backstop to assure continued production of super-ultra-low-emission vehicles after partial-zero-emission vehicles (PZEVs) as a category are moved from the ZEV regulations to the LEV regulations in 2018; more stringent particulate matter (PM) standards for light- and medium-duty vehicles, which will reduce the health effects and premature deaths associated with these emissions; zero fuel evaporative emission standards for PCs and LDTs, and more stringent standards for medium- and heavy-duty vehicles (MDVs); and, more stringent supplemental federal test procedure (SFTP) standards for PC and LDTs, which reflect more aggressive real world driving and, for the first time, require MDVs to meet SFTP standards. 78 FR 2114.

⁵⁵⁷ 78 FR 23641, April 22, 2016; 77 FR 62624, October 15, 2012.

⁵⁵⁸ "The Advanced Clean Cars program . . . will reduce criteria pollutants . . . and . . . help achieve attainment of air quality standards; The Advanced Clean Cars Program will also reduce greenhouse gases emissions as follows: by 2025, CO₂ equivalent emissions will be reduced by 13 million metric tons (MMT) per year, which is 12 percent from base line levels; the reduction increases in 2035 to 31 MMT/year, a 27 percent reduction from baseline levels; by 2050, the proposed regulation would reduce emissions by more than 40 MMT/year, a reduction of 33 percent from baseline levels; and viewed cumulatively over the life of the regulation (2017–2050), the proposed Advanced Clean Cars regulation will reduce by more than 850 MMT CO₂-equivalent, which will help achieve the State's climate change goals to reduce the threat that climate change poses to California's public health, water resources, agriculture industry, ecology and economy." 78 FR 2114. CARB Resolution 12–11, at 19, (January 26, 2012), available in the docket for the January 2013 waiver action, Document No. EPA–HQ–OAR–2012–0562, the docket for the ACC program waiver.

⁵⁵⁴ See, e.g., 49 FR 18887 (May 3, 1984).

⁵⁵⁵ Criteria pollutants generally present public health and environmental concern in proportion to their ambient local concentration and California has long had unusually severe problems in this regard.

standard. These deadlines began in 2015 and are scheduled to be phased in through 2025. For example, compliance with the GHG requirements began in 2017 and will be phased-in through 2025. The implementation schedule and the interrelationship of regulatory provisions with each of the three standards together demonstrates that CARB intended that at least the GHG and ZEV standards, if not also the LEV standards, would be implemented as a cohesive program. For example, in its ACC waiver request, CARB stated that the “ZEV regulation must be considered in conjunction with the proposed LEV III amendments. Vehicles produced as a result of the ZEV regulation are part of a manufacturer’s light-duty fleet and are therefore included when calculating fleet averages for compliance with the LEV III GHG amendments.” CARB’s Initial Statement of Reasons at 62–63.⁵⁵⁹ CARB also noted “[b]ecause the ZEVs have ultra-low GHG emission levels that are far lower than non-ZEV technology, they are a critical component of automakers’ LEV III GHG standard compliance strategies.” *Id.* CARB further explained that “the ultra-low GHG ZEV technology is a major component of compliance with the LEV III GHG fleet standards for the overall light duty fleet.” *Id.* CARB’s request also repeatedly touted the GHG emissions benefits of the ACC program.

Up until the ACC program waiver request, CARB had relied on the ZEV requirements as a compliance option for reducing criteria pollutants. Specifically, California first included the ZEV requirement as part of its first LEV program, which was then known as LEV I, that mandated a ZEV sales requirement that phased-in starting with the 1998 MY through 2003 MY. EPA issued a waiver of preemption for these regulations on January 13, 1993 (58 FR 4166 (January 13, 1993)). Since this initial waiver of preemption, California has made multiple amendments to the ZEV requirements and EPA has subsequently granted waivers for those amendments. In the ACC program waiver request California also included a waiver of preemption request for ZEV amendments that related to 2012 MY through 2017 MY and imposed new requirements for 2018 MY through 2025 MY (78 FR 2118–9). Regarding the ACC program ZEV requirements, CARB’s waiver request noted that there was no criteria emissions benefit in terms of vehicle (tank-to-wheel—TTW) emissions because its LEV III criteria

pollutant fleet standard was responsible for those emission reductions.⁵⁶⁰ CARB further noted that its ZEV regulation was intended to focus primarily on zero emission drive—that is, battery electric (BEVs), plug-in hybrid electric vehicles (PHEVs), and hydrogen fuel cell vehicles (FCVs)—in order to move advanced, low GHG vehicles from demonstration phase to commercialization (78 FR 2122, 2130–31). Specifically, for 2018 MY through 2025 MY, the ACC program ZEV requirements mandate use of technologies such as BEVs, PHEVs and FCVs, in up to 15% of a manufacturer’s California fleet and in each of the section 177 States by MY 2025⁵⁶¹ (78 FR 2114). Additionally, the ACC program regulations provide various compliance flexibilities allowing for substitution of compliance with one program requirement for another. For instance, manufacturers may opt to over-comply with the GHG fleet standard in order to offset a portion of their ZEV compliance requirement for MY 2018 through 2021. Further, until MY 2018, sales of BEVs (since MY 2018, limited to FCVs) in California count toward a manufacturer’s credit requirement in section 177 States. This is known as the “travel provision” (78 FR 2120).⁵⁶² For their part, the GHG emission regulations include an optional compliance provision that allows manufacturers to demonstrate compliance with CARB’s GHG standards by complying with applicable Federal GHG standards. This is known as the “deemed to comply” provision.⁵⁶³ A complete description of

⁵⁶⁰ CARB ACC waiver request at EPA–HQ–OAR–2012–0562–0004.

⁵⁶¹ Under section 177, any State that has state implementation plan provisions approved under part D of Subchapter I of the Act may opt to adopt and enforce standards that are identical to standards for which EPA has granted a waiver of preemption to California under CAA section 209(b). EPA’s longstanding interpretation of section 209(b) and its relationship with section 177 is that it is not appropriate under section 209(b)(1)(C) to review California regulations, submitted by CARB, through the prism of adopted or potentially adopted regulations by section 177 States.

⁵⁶² On March 11, 2013, the Association of Global Automakers and Alliance of Automobile Manufacturers filed a petition for reconsideration of the January 2013 waiver grant, requesting that EPA reconsider the decision to grant a waiver for MYs 2018 through 2025 ZEV standards on technological feasibility grounds. Petitioners also asked for consideration of the impact of the travel provision, which they argue raise technological feasibility issues in section 177 States, as part of the agency’s review under section 209(b)(1)(C). EPA continues to evaluate the petition.

⁵⁶³ On May 7, 2018, California issued a notice seeking comments on “potential alternatives to a potential clarification” of this provision for MY vehicles that would be affected by revisions to the Federal GHG standards. The notice is available at

the ACC program can be found in CARB’s waiver request, located in the docket for the January 2013 waiver action, Docket No. EPA–HQ–OAR–2012–0562.

2. Statutory Provisions Applicable to the Proposed Action

Under section 209(b) of the Clean Air Act, EPA may reconsider a grant of a waiver of preemption and withdraw same if the Administrator makes any one of the three findings in section 209(b)(1)(A), (B) and (C). EPA’s authority to reconsider and withdraw the grant of a waiver for the ACC program is implicit in section 209(b) given that the authority to revoke a grant of authority is implied in the authority for such a grant. Further support for EPA’s authority is based on the legislative history for section 209(b), and the judicial principle that agencies possess inherent authority to reconsider their decisions.⁵⁶⁴ The legislative history from the 1967 CAA amendments where Congress enacted the provisions now codified in section 209(a) and (b) provides support for this view. The Administrator has “the right . . . to withdraw the waiver at any time [if] after notice and an opportunity for public hearing he finds that the State of California no longer complies with the conditions of the waiver.” S. Rep. No. 50–403, at 34 (1967). Additionally, subject to certain limitations, administrative agencies possess inherent authority to reconsider their decisions in response to changed circumstances. It is well settled that EPA has inherent authority to reconsider, revise, or repeal past decisions to the extent permitted by law so long as the Agency provides a reasoned explanation. This authority exists in part because EPA’s interpretations of the statutes it administers “are not carved in stone.” *Chevron U.S.A. Inc. v. NRDC, Inc.*, 467 U.S. 837, 863 (1984). An agency “must consider varying interpretations and the wisdom of its policy on a continuing basis.” *Id.* at 863–64. This is true when, as is the case here, review is undertaken “in response to . . . a change in administration.” *National Cable & Telecommunications Ass’n v. Brand X internet Services*, 545 U.S. 967, 981 (2005). The EPA must also be cognizant

https://www.arb.ca.gov/msprog/levprog/leviii/leviii_dtc_notice05072018.pdf.

⁵⁶⁴ In 2009, EPA reconsidered the 2008 GHG waiver denial at CARB’s request and granted it upon reconsideration. 72 FR 32744. The EPA noted the authority to “withdraw a waiver in the future if circumstances make such action appropriate.” See 74 FR 32780 n.222; see also 32752–53 n.50 (citing 50 S. Rep. No. 403, at 33–34), 32755 n.74.

⁵⁵⁹ Available in the docket for the January 2013 waiver decision, Docket No. EPA–HQ–OAR–2012–0562.

where it is changing a prior position and articulate a reasoned basis for the change. *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009). This proposal reflects changed circumstances that have arisen since the initial grant of the 2013 ACC program waiver of preemption. They include the agency's reconsideration of California's record support for, and EPA's decision and underlying statutory interpretation on, California's need for GHG and ZEV standards, as well as costs and technological feasibility considerations that differ from California's assumptions and which were bases for agency conclusions that were made at that time.

When California submits a package of standards for EPA review pursuant to CAA section 209, EPA has long interpreted the statute as authorizing EPA to approve certain provisions and defer action on others. EPA believes this approach of partially approving submissions is implicit in section 209, particularly given the fact that EPA's evaluation of the technological feasibility of standards is best understood as in effect an evaluation of each standard for each year (*i.e.*, standards that are submitted together may vary substantially in their effect and some may require longer lead time than others). Furthermore, since California always retains the authority as a matter of state law to determine whether to implement state standards for which a waiver of preemption has been granted, we do not believe this approach poses the risk that a partial approval could force California to implement a program they would not have chosen had they anticipated EPA's decision. EPA believes that because its authority to grant waivers of preemption is best understood as applying on a granular level—where the feasibility of compliance for a particular year can be assessed—rather than being limited to approving or disapproving preemption for an entire package of standards submitted together, it follows that EPA's authority to withdraw the grant of waiver of preemption should also apply on a granular level, *i.e.*, for any model year for which EPA concludes the conditions for waiver of preemption no longer exist or for which it concludes that it erred in its prior determination that one of the conditions triggering a denial a waiver was not met. Further, because neither the Clean Air Act nor the Administrative Procedure Act specify deadlines for reconsideration of agency action, EPA may, issue a new final action to change a prior action,

taking into account statutory mandates and any applicable court orders.⁵⁶⁵

EPA is proposing to withdraw the grant of a waiver of preemption for California to enforce the GHG and ZEV standards of the ACC program for MY 2021–2025. EPA proposes to withdraw due to separate proposed findings under section 209(b)(1)(B), and (C).⁵⁶⁶

Under section 209(b)(1)(B), EPA is proposing to find that California does not need its ZEV and GHG standards to meet compelling and extraordinary conditions in California. EPA is proposing to find that CARB does not need its own GHG and ZEV standards to meet compelling and extraordinary conditions in California given that “compelling and extraordinary conditions” mean environmental problems with causes and effects in California whereas GHG emissions present global air pollution problems. Additionally, California does not need the ZEV requirements to meet “compelling and extraordinary” conditions in California given that it allows manufacturers to generate credits in section 177 states as a means to satisfy those manufacturers' obligations to comply with the mandate that a certain percentage of their vehicles sold in California be ZEV (or be credited as such from sales in section 177 States).

Under section 209(b)(1)(C), EPA is proposing to find that CARB's GHG and ZEV standards are not consistent with section 202(a) based on changed circumstances since the January 2013 waiver. Specifically, the agency is, in this action, jointly proposing with NHTSA revisions to the Federal GHG and fuel economy standards based on proposed conclusions that the current (or augural) standards for MY 2021 through 2025 are not feasible. The proposed findings in this notice call into question CARB's projections and assumptions that underlay the technological feasibility findings for its waiver application for the GHG standards and thus the technological findings made by EPA in 2013 in connection with the grant of the waiver for the ACC program.

Similarly, with regard to ZEV standards, this notice also raises

⁵⁶⁵ On March 11, 2013, EPA received a petition for reconsideration from the Association of Global Automakers and Alliance of Automobile Manufacturers of the decision to grant a waiver for MYs 2018 through 2025 ZEV standards.

⁵⁶⁶ Under this provision, a waiver is not permitted if (A) the protectiveness determination of the State is arbitrary and capricious; (B) the State does not need such State standards to meet compelling and extraordinary conditions; or (C) such State standards and accompanying enforcement procedures are not consistent with section 202(a) of the Act.

questions as to CARB's technological projections for ZEV-type technologies, which are a compliance option for both the ZEV mandate and GHG standards. As also previously discussed, above, CARB's ZEV regulations include the travel provision, which previously allowed manufacturers to earn credit for ZEVs sold in California (which, despite very slow ZEV sales, far outpaces any other State in these sales) to comply with credit requirements in section 177 States. Starting with MY 2018, this provision only applies to FCVs. When the travel provision was adopted, it was anticipated that by MY 2018, incentives of this type for BEV sales would no longer be necessary—*i.e.*, that consumers would adopt such vehicles on their own. Unfortunately, there has been a serious lack of market penetration, consumer demand levels, and lack of or slow development of necessary infrastructure for any ZEVs—BEV or otherwise—in such States. This in turn means that manufacturers' sales of ZEVs in section 177 States are unlikely, contrary to CARB's projections in its submissions to support its application for the ACC waiver, to generate sufficient credits to satisfy those manufacturers' obligations to comply with the mandate that a certain percentage of their vehicles sold in California be ZEV (or be credited as such from sales in section 177 States). In short, EPA is now of the view that CARB's projections and assumptions at the time of the waiver request were overly ambitious and likely will not be realized within the provided lead time. Thus, EPA is also proposing to find that CARB's ZEV standards for MY 2021 through 2025, and the GHG standards which rely on the ZEV requirement as a compliance option, are technologically infeasible and therefore, not consistent with section 209(b)(1)(C).

As described above, EPA is proposing to withdraw the waiver with respect to California's ZEV standards based on findings made pursuant to sections 209(b)(1)(B) and 209(b)(1)(C). EPA is proposing to withdraw the waiver with respect to California's GHG standards based on findings made under these three prongs as well as a separate finding made under section 209(b)(1)(B). Additionally, because the ZEV and GHG standards are closely interrelated, as demonstrated by the description above of their complex, overlapping compliance regimes, EPA is proposing to withdraw the waiver of preemption for ZEV standards under the second and third prongs of section 209(b)(1).

EPA believes that a finding made pursuant to any of the prongs of section 209(b)(1) is an independent and

adequate ground to withdraw the waiver. In this regard, EPA notes that the statute provides that “No such waiver shall be granted if the Administrator finds that—(B) the State does not need such State standards to meet compelling and extraordinary conditions; or (C) such State standards and accompanying enforcement procedures are not consistent with section 202(a) of the Act.” (Emphasis added.) Consequently, a final waiver withdrawal decision that relies on more than one of these provisions would present independent and severable bases for the decision to withdraw. And, separate and apart from its analysis under 209(b)(1)(A)–(C), EPA proposes to determine that if NHTSA finalizes its proposed determination that EPCA preempts California’s standards, that would provide an independent and adequate ground to withdraw the waiver for those standards. EPA proposes to interpret section 209(b)(1) to only authorize it to waive CAA preemption for standards that are not independently preempted by EPCA.

Additionally, under CAA section 177, States that have designated nonattainment areas may opt to adopt and enforce standards that are identical to standards for which EPA has granted a waiver of preemption to California under CAA section 209(b). For States that have adopted the ZEV standards, the consequence of any final withdrawal action would be that they cannot implement these standards. (A State may not “make attempt[s] to enforce” California standards for which EPA has not waived preemption. *Motor Vehicle Mfrs. Ass’n v. NYS Dep. of Env’tl Conservation*, 17 F.3d 521, 534 (2d Cir. 1994)). Where states have adopted CARB’s ZEV and GHG standards into their SIPs, under section 177, the provisions of the SIP would continue to be enforceable until revised. If this proposal is finalized, EPA may subsequently consider whether to employ the appropriate provisions of the CAA to identify provisions in section 177 states’ SIPs that may require amendment and to require submission of such amendments.

EPA is taking comments on all aspects of this proposal.

(a) Burden and Standard of Proof in Waiver Decisions

Here, the Administrator is proposing the withdrawal of a previously granted waiver of preemption. As discussed in section III.A. below, EPA proposes to find that there is clear and compelling evidence that California’s protectiveness determination for its ZEV and GHG standards was arbitrary and capricious.

Motor and Equip. Mfrs. Ass’n v. EPA, 627 F.2d 1095, 1112 (D.C. Cir. 1979) (*MEMA I*). Additionally, as discussed in section III.B, below, EPA proposes to find that there is clear and compelling evidence that California does not need its ZEV and GHG standards to meet compelling and extraordinary conditions. Similarly, as discussed in section III.C, below, there is clear and compelling evidence that both the ZEV and GHG standards are not technologically feasible.⁵⁶⁷

In *MEMA I*, 627 F.2d 1095, the U.S. Court of Appeals for D.C. Circuit found that “the burden of proving [that California’s regulations do not comply with the CAA] is on whoever attacks them. California must present its regulations and findings at the hearing and thereafter the parties opposing the waiver request bear the burden of persuading the Administrator that the waiver request should be denied.”⁵⁶⁸

MEMA I dealt with a challenge brought by Motor and Equipment Manufacturers Association against EPA’s grant of a waiver of preemption for California’s accompanying enforcement procedures, which in this instance were vehicle in-use maintenance regulations. The specific challenge to EPA’s action contested EPA’s findings that section 209 allowed for a waiver of preemption for CARB’s in-use maintenance regulations. *MEMA I* also specifically considered the standards of proof for two findings that EPA must make in order to grant a waiver for an “accompanying enforcement procedure” (as opposed to standards): (1) Protectiveness in the aggregate and (2) consistency with section 202(a) findings. The court instructed that “the standard of proof must take account of the nature of the risk of error involved in any given decision, and it therefore varies with the finding involved. We need not decide how this standard operates in every waiver decision.”⁵⁶⁹

The court upheld the Agency’s position that denying a waiver required “clear and compelling evidence” to show that proposed enforcement procedures undermine the protectiveness of California’s standards.⁵⁷⁰ The court noted that this standard of proof “also accords with the congressional intent to provide

California with the broadest possible discretion in setting regulations it finds protective of the public health and welfare.”⁵⁷¹

With respect to the consistency finding, *MEMA I* did not articulate a standard of proof applicable to all proceedings but found that the opponents of the waiver were unable to meet their burden of proof even if the standard were a mere preponderance of the evidence.

As the agency has consistently explained, although *MEMA I* did not explicitly consider the standard of proof for “standards,” as compared to “accompanying enforcement procedures,” nothing in the opinion suggests that the court’s analysis would not apply with equal force to such determinations.⁵⁷² Moreover, the normal standard of proof in civil matters is a preponderance of the evidence. *International Harvester Co. v. Ruckelshaus*, 478 F.2d 615, 643 (D.C. Cir. 1979).

The role of the Administrator in considering California’s application for a preemption waiver is to make a reasonable evaluation of the information in the record in coming to the waiver decision. The Administrator is required to “consider all evidence that passes the threshold test of materiality and . . . thereafter assess such material evidence against a standard of proof to determine whether the parties favoring a denial of the waiver have shown that the factual circumstances exist in which Congress intended a denial of the waiver.”⁵⁷³

As the court in *MEMA I* stated, if the Administrator ignores evidence demonstrating that the waiver should not be granted, or if he seeks to overcome that evidence with unsupported assumptions of his own, he runs the risk of having his waiver decision set aside as “arbitrary and capricious.”⁵⁷⁴ Therefore, the Administrator’s burden is to act “reasonably.”⁵⁷⁵

The instant action involves a decision whether to withdraw a previous grant of a waiver of preemption as compared to the initial evaluation of and decision whether to grant a waiver request from California. Specifically, as discussed in Section III, below, EPA is proposing findings for the withdrawal of preemption for CARB’s ACC program under multiple criteria set out in section 209(b)(1). For example, EPA is proposing to withdraw the waiver based

⁵⁶⁷ EPA is assuming without agreeing that the burden of proof requires clear and compelling evidence but believes a preponderance of the evidence is the proper burden of proof. Regardless, EPA firmly believes that it has clear and compelling evidence to support the agency’s statutory findings.

⁵⁶⁸ *MEMA I*, 627 F.2d at 1122.

⁵⁶⁹ *Id.*

⁵⁷⁰ *Id.*

⁵⁷¹ *Id.*

⁵⁷² 74 FR 32748.

⁵⁷³ *MEMA I*, 627 F.2d at 1122.

⁵⁷⁴ *Id.* at 1126.

⁵⁷⁵ *Id.*

on considerations such as the nature of GHG concentrations as a global air pollution problem, rather than a regional or local air pollution problem, whether or not CARB's particular GHG standards actually would reduce GHG emissions in California, whether a waiver for CARB's GHG standards is permissible if those regulations are preempted by EPCA, and the effect of technological infeasibility for the 2012 Federal GHG standards for MY 2021–2025. *Natural Resources Defense Council v. EPA*, 655 F.2d 318, 331 (D.C. Cir. 1981) (“[T]here is *substantial room for deference* to the EPA’s expertise in projecting the likely course of [technological] development.”) (Emphasis added.) EPA believes that these are kinds of issues that extend well beyond the boundaries of California’s authority under section 209(b). EPA posits, therefore, that the decision to withdraw the waiver would warrant exercise of the Administrator’s judgment.

Furthermore, that decision entails matters not only of policy judgment but of statutory interpretation, chief among which is the question of what is the appropriate inquiry under section 209(b)(1) when the Administrator is faced with a request for a preemption waiver for standards designed to address a global environmental problem. EPA has previously expressed the view that certain waiver requests might call for the Administrator to exercise judgment in determining California’s need for particular standards, under section 209(b)(1)(B). Specifically, in the March 6, 2008 GHG waiver denial, EPA posited that it was neither required nor appropriate for the Agency to defer to California on the statutory interpretation of the Clean Air Act, including the issue of the confines or limits of state authority established by section 209(b)(1)(B), especially given that EPA’s evaluation of California’s request for a waiver to enforce GHG standards would relate to the limits of California’s authority to regulate GHG emissions from new motor vehicles, instead of particular regulatory provisions that California was seeking to enforce. There, EPA construed section 209(b)(1)(B) as calling for either a consideration of environmental problems with *causes* that were specific to California, or in the alternative, environmental *effects* specific to California in comparison to the rest of the nation. EPA further explained that this interpretation called for its own judgment because it necessitated a determination of whether elevated concentrations of GHGs lie within the

confines of state air pollution programs as covered by section 209(b)(1)(B). It would also be consistent with the GHG waiver denial for EPA to exercise its own judgment in making the requisite findings called for under section 209(b)(1)(B) in the instant action.

EPA is, thus, soliciting comments on the appropriate burden and standard of proof for withdrawing a previously issued waiver, taking into consideration that different approaches may apply to the various criteria of Section 209(b) and that EPA is not merely responsible for evaluating a request by California and comments thereon but is proposing withdrawal of a grant of preemption.

3. Discussion: Analysis Under Section 209(b)(1)(B), (C)

(a) Proposed Finding Under Section 209(b)(1)(B): California Does Not Need its Standards To Meet Compelling and Extraordinary Conditions

(1) Introduction

Section 209(b)(1)(B) provides that no waiver of section 209(a) preemption will be granted if the Administrator finds that California does not need “such standards to meet compelling and extraordinary conditions.” EPA is proposing to withdraw the grant of waiver of preemption for CARB’s GHG and ZEV standards for 2021 MY through 2025 MY based on a finding that California does not *need* these standards to meet *compelling and extraordinary conditions*, as contemplated under section 209(b)(1)(B). As shown below, EPA is proposing to determine that the ACC program GHG and ZEV standards are standards that would not meaningfully address global air pollution problems posed by GHG emissions in contrast to local or regional air pollution problem with causal ties to conditions in California. As also shown below, EPA is proposing to find that while potential conditions related to global climate change in California could be substantial, they are not sufficiently different from the potential conditions in the nation as a whole to justify separate state standards under CAA section 209(b)(1)(B). Moreover, the GHG and ZEV standards would not have a meaningful impact on the potential conditions related to global climate change. EPA is thus proposing to find that California does not *need* GHG standards to meet *compelling and extraordinary conditions*, as contemplated under section 209(b)(1)(B). Additionally, California does not need the ZEV requirements to meet “compelling and extraordinary” conditions in California given that it allows manufacturers to generate credits

in section 177 states as a means to satisfy those manufacturers’ obligations to comply with the mandate that a certain percentage of their vehicles sold in California be ZEV (or be credited as such from sales in section 177 States). This finding is premised on agency review of the interpretation and application of section 209(b)(1)(B) in the January 2013 ACC waiver request. Thus, EPA is required to articulate a reasoned basis for the change in its position. *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009).

(2) Historical Waiver Practices Under Section 209(b)(1)(B)

Up until the 2008 GHG waiver denial, EPA had interpreted section 209(b)(1)(B) as requiring a consideration of California’s need for a separate motor vehicle program designed to address local or regional air pollution problems and not whether the specific standard that is the subject of the waiver request is necessary to meet such conditions (73 FR 12156; March 6, 2008). Additionally, California typically would seek a waiver of particular aspects of its new motor vehicle program up until the ACC program waiver request. In the 2008 GHG waiver denial, which was a waiver request for only GHG emissions standards, however, EPA determined that its prior interpretation of section 209(b)(1)(B) was not appropriate for GHG standards because such standards are designed to address global air pollution problems in contrast to local or regional air pollution problems specific to and caused by conditions specific to California (73 FR 12156–60).

In the 2008 denial, EPA further explained that its previous reviews of California’s waiver request under section 209(b)(1)(B) had usually been cursory and undisputed, as the fundamental factors leading to California’s air pollution problems—geography, local climate conditions (like thermal inversions), significance of the motor vehicle population—had not changed over time and over different local and regional air pollutants. These fundamental factors applied similarly for all of California’s air pollution problems that are local or regional in nature.

In the 2008 denial, EPA noted that atmospheric concentrations of GHG are substantially uniform across the globe, based on their long atmospheric life and the resulting mixing in the atmosphere. Therefore, with regard to atmospheric GHG concentrations and their environmental effects, the California-specific causal factors that EPA had considered when reviewing previous waiver applications under section

209(b)(1)(B)—the geography and climate of California, and the large motor vehicle population in California, which were considered the fundamental causes of the air pollution in California—do not have the same relevance to the question at hand. The atmospheric concentration of GHG in California is not affected by the geography and climate of California. The long duration of these gases in the atmosphere means they are well-mixed throughout the global atmosphere, such that their concentrations over California and the U.S. are substantially the same as the global average. The number of motor vehicles in California, while still a notable percentage of the national total and still a notable source of GHG emissions in the State, is not a significant percentage of the global vehicle fleet and bears no closer relation to the levels of GHG in the atmosphere over California than any other comparable source or group of sources of GHG anywhere in the world. Emissions of greenhouse gases from California cars do not generally remain confined within California’s local environment but instead become one part of the global pool of GHG emissions, with this global pool of emissions leading to a relatively homogenous concentration of GHG over the globe. Thus, the emissions of motor vehicles in California do not affect California’s air pollution problem in any way different from emissions from vehicles and other pollution sources all around the world. Similarly, the emissions from California’s cars do not only affect the atmosphere in California but in fact become one part of the global pool of GHG emissions that affect the atmosphere globally and are distributed throughout the world, resulting in basically a uniform global atmospheric concentration.

EPA then applied the reasoning laid out above to the GHG standards at issue in the 2008 waiver denial. Having limited the meaning of this provision to situations where the air pollution problem was local or regional in nature, EPA found that California’s GHG standards did not meet this criterion.

In the 2008 waiver denial, EPA also applied an alternative interpretation where EPA would consider effects of the global air pollution problem in California in comparison to the effects on the rest of the country and again addressed the GHG standards separately from the rest of California’s motor vehicle program. Under this alternative interpretation, EPA considered whether impacts of global climate change in California were sufficiently different from impacts on the rest of the country such that California could be considered

to need its GHG standards to meet compelling and extraordinary conditions. EPA determined that the waiver should be denied under this alternative interpretation as well.

(3) Interpretation of Section 209(b)(1)(B)

Under section 209(b)(1)(B), EPA cannot grant a waiver request if EPA finds that California “does not need such State standards to meet compelling and extraordinary conditions.” The statute does not define the phrase “compelling and extraordinary conditions,” and EPA considers the text of section 209(b)(1)(B), and in particular the meaning and scope of this phrase, to be ambiguous.

First, the provision is ambiguous with respect to the scope of EPA’s analysis. It is unclear whether EPA is meant to evaluate the particular standard or standards at issue in the waiver request or all of California’s standards in the aggregate. Section 209(b)(1)(B) references the need for “such State standards.” Section 209(b)(1)(B) does not specifically employ terms that could only be construed as calling for a standard-by-standard analysis or each individual standard. For example, it does not contain phrases such as “each State standard” or “the State standard.” Nor does the use of the plural term “standards” definitively answer the question of the proper scope of EPA’s analysis, given that the variation in the use of singular and plural form of a word in the same law⁵⁷⁶ is often insignificant and a given waiver request typically encompasses multiple “standards.” Thus, while it is clear that “such State standards” refers at least to all of the standards that are the subject of the particular waiver request before the Administrator, that phrase can reasonably be considered as referring either to the standards in the entire California program, the program for similar vehicles, or the particular standards for which California is requesting a waiver under the pending request.

There are reasons to doubt that the phrase “such State standards” in section 209(b)(1)(B) is intended to refer to all standards in California’s program, including all the standards it has historically adopted and obtained waivers for previously. The waiver under 209(b) is a waiver of, and is logically dependent on and presupposes the existence of, the prohibition under 209(a), which forbids (absent a waiver) any state to “adopt or attempt to enforce

⁵⁷⁶ “Words [in Acts of Congress] importing the singular include and apply to several persons.” 1 U.S.C. 1.

any standard [singular] relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to this part.” (Emphasis added.) States are forbidden from adopting a standard, singular; California requests waivers *seriatim* by submitting a standard or package of standards to EPA; follows that EPA considers those submissions as it receives them, individually, not in the aggregate with all standards for which it has previously granted waivers.

Furthermore, reading the phrase “such State standards” as requiring EPA always and only to consider California’s entire program in the aggregate limits the application of the criterion. Once EPA had determined that California needed its very first set of submitted standards to meet extraordinary and compelling conditions, it is unclear that EPA would ever have the discretion to determine that California did not need any subsequent standards for which it sought a successive waiver—unless EPA is authorized to consider a later submission separate from its earlier finding. Moreover, up until the ACC program waiver request, California’s waiver request involved individual standards or particular aspects of California’s new motor vehicle program.⁵⁷⁷ As previously explained, however, the ACC waiver program could be considered as the entire new motor vehicle program for California given that it is a single coordinated program comprising a suite of standards that California intended to be a cohesive program for addressing emissions from a wide variety of vehicles, specifically, new passenger cars, light duty trucks, medium passenger vehicles, and certain heavy duty vehicles.

The application of the phrase “such State standards” to state standards in the aggregate may have appeared more reasonable in the context of, for example, the 1984 PM waiver request, as opposed to the present context, as it relates to an application for a waiver with regard to GHG and ZEV standards.⁵⁷⁸ In the 1984 request, the agency confronted the need for a reading of “such State standards” in section 209(b)(1)(B) that would be consistent with the State’s “in the aggregate, at least as protective” finding under the root text of 209(b)(1),”

⁵⁷⁷ The 2009 and Subsequent MY GHG standards for New Motor Vehicles, 73 FR 12156 (March 6, 2008); The On-Board diagnostics system requirements (OBD II) 81 FR 78144 (November 7, 2016), The ZEV program regulations 76 FR 61096 (October 3, 2011), 71 FR 78190 (December 26, 2006)) and the Heavy-duty Truck idling requirements 77 FR 9239 (February 16, 2012).

⁵⁷⁸ 49 FR 18887 (May 3, 1984).

because Congress explicitly allows California to adopt some standards that are less stringent than Federal standards. EPA explained that the phrase “in the aggregate” was specifically aimed at allowing California to adopt less stringent CO standards at the same time when California wanted to adopt NO_x standards that were tighter than the Federal NO_x standards, to address ozone problems.⁵⁷⁹ California reasoned that a relaxed CO standard would facilitate the technological feasibility of the desired more stringent NO_x standards. When evaluating that waiver request, EPA noted that it would be inconsistent for Congress to allow EPA to look at each air pollutant separately for purposes of determining compelling and extraordinary conditions for that air pollution problem, while at the same time allowing California to adopt standards for a particular air pollutant that was less stringent than the Federal standards for that same pollutant. EPA proposes to determine that the balance of textual, contextual, purposive, and legislative-history evidence at minimum supports the conclusion that it is ambiguous whether the Administrator may consider whether California needs the *particular* standard or standards under review to meet compelling and extraordinary conditions.

Second, the statute does not speak with precision as to the *substance* of EPA’s analysis. “Compelling and extraordinary conditions,” as the history of the 2008 waiver denial and 2009 reconsideration and grant narrated above demonstrates, is a phrase susceptible of multiple interpretations, particularly in the context of GHG emissions and associated, global environmental problems. EPA believes that the term “extraordinary” is most reasonably read to refer to circumstances that are specific to California and the term is reasonably interpreted to refer to circumstances that are primarily responsible for causing the air pollution problems that the standards are designed to address, such as thermal inversions resulting from California’s local geography and wind patterns. (Conditions that are similar on a global scale are not

“extraordinary,” especially where “extraordinary” conditions are a predicate for a local deviation from national standards.) Support for this interpretation can be found in pertinent legislative history that refers to California’s “peculiar local conditions” and “unique problems.” S. Rep. No. 403, 90th Cong. 1st Sess., at 32 (1967). This legislative history also indicates that California is to demonstrate “compelling and extraordinary circumstances *sufficiently different from the nation as a whole* to justify standards on automobile emissions which may, from time to time, need to be more stringent than national standards.” *Id.* (Emphasis added.) EPA believes this is evidence of Congressional intent that separate standards in California are justified only by a showing of particular circumstances in California that are different from circumstances in the nation as a whole to justify separate standards in California. EPA thus, reads the term “extraordinary” in this statutory context as referring primarily to factors that tend to produce higher levels of pollution: Geographical and climatic conditions (like thermal inversions) that in combination with large numbers and high concentrations of automobiles, create serious air pollution problems in California (73 FR 12156, 12159–60).

Additional relevant legislative history supports a decision to examine California’s need for GHG standards “in the context of global climate change.” *See, e.g.*, 73 FR 12161. Specifically, this legislative history demonstrates that Congress did not justify this provision based on the need for California to enact separate standards to address pollution problems of a more national or global nature. Rather relevant legislative history “indicates that Congress allowed waivers of preemption for California motor vehicle standards based on the particular effects of local conditions in California on the air pollution problems in California.” Congress discussed “the unique problems faced in California as a result of its climate and topography.” H.R. Rep. No. 728, 90th Cong. 1st Sess., at 21 (1967). *See also* Statement of Cong. Holifield (CA), 113 Cong. Rec. 30942–43 (1967). Congress also noted the large effect of local vehicle pollution on such local problems. *See, e.g.*, Statement of Cong. Bell (CA) 113 Cong. Rec. 30946. In particular, Congress focused on California’s smog problem, which is especially affected by local conditions and local pollution. *See* Statement of Cong. Smith (CA) 113 Cong. Rec. 30940–41 (1967); Statement of Cong.

Holifield (CA), *id.*, at 30942. *See also*, *MEMA I*, 627 F.2d at 1109 (noting the discussion of California’s “peculiar local conditions” in the legislative history).

The EPA thus, believes that it is appropriate, in evaluating California’s need for a waiver under section 209(b)(1)(B), to examine California’s program as a whole to the extent that the problem is designed to address local or regional air pollution problems, particularly in light of the fact that the State’s aggregate analysis under the root text of 209(1)(b)(1) is designed in part to permit California to adopt standards for some criteria pollutants that are less stringent than the Federal standards as a trade-off for standards for other criteria pollutants, where the levels of criteria pollutants addressed by California’s standards are caused by conditions specific to California, and contribute primarily to environmental effects that are specific to California. EPA could also review California’s GHG standards themselves even where, as in the instant ACC waiver package, the waiver request is for a single coordinated package of requirements and amendments that include standards designed to address global environmental effects caused by a globally distributed pollutant, such as GHGs as well as requirements for a compliance mechanism that could likely address both criteria pollutants and GHG emissions, which in this instance are the ZEV requirements. The EPA further notes that in keeping with its pre-2008 interpretation, its review of California’s ACC program request under section 209(b)(1)(B) was cursory and undisputed, given that view that the fundamental factors leading to California’s air pollution problems—geography, local climate conditions (like thermal inversions), significance of the motor vehicle population—had not changed over time and over different local and regional air pollutants. Additionally, as previously explained, up until the ACC program waiver, California had relied on the ZEV requirements as a compliance mechanism for criteria pollutants as compared to the ACC program, where CARB for the first time relied on it for GHG emissions reductions. Here, as previously explained, CARB specifically noted that that there was no criteria emissions benefit for its ZEV standards in terms of vehicle emissions because its LEV III criteria pollutant fleet standard was responsible for those emission

⁵⁷⁹ The intent of the 1977 amendment was to accommodate California’s particular concern with NO_x, which the State regards as a more serious threat to public health and welfare than carbon monoxide. California was eager to establish oxides of nitrogen standards considerably higher than applicable Federal standards, but technological developments posed the possibility that emission control devices could not be constructed to meet both the high California oxides of nitrogen standard and the high Federal carbon monoxide standard. *MEMA I*, 627 F.2d at 1110 n.32.

reductions.⁵⁸⁰ The EPA therefore, believes a review of the grant of the ACC program waiver and the agency reasoning underpinning the grant are appropriate at this time. As previously explained, an agency “must consider . . . the wisdom of its policy on a continuing basis.” *Chevron*, 467 U.S. at 863–64. This is true when, as is the case here, review is undertaken “in response to . . . a change in administration.” *Brand X Internet Services*, 545 U.S. at 981. In sum, EPA proposed to conclude that the pre-2008 interpretation of section 209(b)(1)(B) would allow for review of California’s GHG standards in themselves, given that the ACC program is a single coordinated motor vehicle emission control program that is designed to address both traditional, local environmental causes and effects (including via criteria pollutants) and global air pollution problems. Thus, EPA is proposing that at this time its review has led it to propose to determine that California does not need its own GHG and ZEV standards, to the extent California intended the ZEV requirements to serve as a compliance option for GHG standards, because GHG emissions do not present conditions specific to California—in the terms of the legislative history discussed above, GHG emissions do not present “unique problems” in California as compared to the whole country. As shown below, GHG emissions could be associated with potential adverse effects in California, but EPA does not believe that these would be sufficiently different from potential adverse effects in either coastal States like Florida, Massachusetts, and Louisiana or the nation as a whole, to constitute a “need” for separate state standards under section 209(b)(1)(B). EPA is of the view, therefore, that GHG emissions would not be associated with “peculiar local conditions” in California that Congress alluded to in promulgating section 209(b)(1)(B). In the alternative, EPA is proposing to determine that California does not need the ACC program GHG and ZEV standards to address compelling and extraordinary conditions, because they will not meaningfully address global air pollution problems like the kinds associated with GHG emissions and would not have any meaningful impact on potential adverse effects related to global climate change in California. As shown below, based on this reading of section 209(b)(1)(B), the agency is proposing to find that GHG emissions impacts cannot be considered

“compelling and extraordinary conditions” such that California “need[s]” separate GHG and ZEV standards for new motor vehicles for MY 2021 through MY 2025.

(4) Proposed Determination That California Does Not Need Its ACC Program Regulations To Meet Compelling and Extraordinary Conditions

EPA is proposing to withdraw the waiver of preemption of the GHG and ZEV standards on two alternative grounds: (1) California “does not need” the standards “to meet compelling and extraordinary conditions,” under section 209(b)(1)(B); (2) even if California does have compelling and extraordinary conditions in the context of global climate change, California does not “need” these standards under section 209(b)(1)(B) because they will not meaningfully address global air pollution problems of the sort associated with GHG emissions. EPA is interpreting section 209(b)(1)(B) to permit the Agency to specifically review California’s need for GHG standards—*i.e.*, standards for a globally distributed air pollutant which is of concern for its connection to global environmental effects—as opposed to reviewing California’s need for its motor vehicle program as a whole (including both its GHG-targeting and non-GHG-targeting components), in part because the rest of California’s ACC program consists of standards that are designed to address local or regional air pollution problems. Accordingly, EPA is proposing to find that GHG emitted by California motor vehicles become part of the global pool of GHG emissions that affect concentrations of GHGs on a uniform basis throughout the world. The local climate and topography in California have no significant impact on the long-term atmospheric concentrations of greenhouse gases in California. More importantly, California’s standards for GHG emissions (both the GHG and ZEV standards) would not materially affect global concentrations of GHG levels. Accordingly, even if EPA were to assume California had compelling and extraordinary conditions that were uniquely impacted by high levels of GHGs, California’s GHG and ZEV standards would not meaningfully address those concerns and conditions.

In the alternative, EPA believes that even if California has compelling and extraordinary conditions, California does not need these standards under section 209(b)(1)(B) because they will not meaningfully address global air pollution problems like the kinds associated with GHG emissions. EPA

believes that the number of motor vehicles in California bears no significant relationship to the levels of GHGs in California. This is because GHGs emissions from cars located in California are relatively small part of the global pool of GHG emissions. Thus, GHG emissions of motor vehicles in California do not affect California’s conditions related to global climate change in any way different from emissions from vehicles and other pollution sources all around the world. Similarly, the GHG emissions from cars in California become one part of the global pool of GHG emissions that affect the atmosphere globally and are distributed throughout the world, resulting in basically a uniform global atmospheric concentration. This is in contrast to the kinds of motor vehicle emissions normally associated with ozone levels, such as VOCs and NO_x, and the local climate and topography that in the past have led to the conclusion that California has the need for state standards to meet compelling and extraordinary conditions. Therefore, California does not need its GHG and ZEV standards to “meet” the conditions: a problem does not cause you to “need” something that would not meaningfully address the problem.

In justifying the need for its GHG standards, CARB extensively described climatic conditions in California. “Record-setting fires, deadly heat waves, destructive storm surges, loss of winter snowpack—California has experienced all of these in the past decade and will experience more in the coming decades. California’s climate—much of what makes the state so unique and prosperous—is already changing, and those changes will only accelerate and intensify in the future. Extreme weather will be increasingly common as a result of climate change. In California, extreme events such as floods, heat waves, droughts and severe storms will increase in frequency and intensity. Many of these extreme events have the potential to dramatically affect human health and well-being, critical infrastructure and natural systems” (78 FR 2129). CARB also provided a summary report on the third assessment from the California Climate Change Center (2012), which described dramatic sea level rises and increases in temperatures (78 FR 2129). These are similar, if not identical to, the justifications that EPA addressed and rejected in the 2008 GHG waiver denial. Notably, in the 2008 denial EPA observed that some of these events—increased temperatures, heat waves, sea level rises, wildfires—were also

⁵⁸⁰ CARB ACC waiver request at EPA–HQ–OAR–2012–0562–0004.

occurring across the U.S. (73 FR 12163, 12165–68). CARB further noted that the South Coast and San Joaquin Valley Air Basins continue to experience some of the worst air quality in the nation and continue to be in non-attainment with the PM and ozone national ambient air quality standards (78 FR 2128–9). The EPA has typically considered nonattainment air quality in California as falling within the purview of “compelling and extraordinary conditions.” California however, did not indicate how the GHG standards would help California in the attainment efforts for these areas. Moreover, as previously noted, the ACC ZEV requirements are intended in part as a GHG compliance mechanism for MYs 2018 through 2025.

EPA believes that any effects of global climate change would apply to the nation, indeed the world, in ways similar to the conditions noted in California.⁵⁸¹ For instance, California’s claims that it is uniquely susceptible to certain risks because it is a coastal State does not differentiate California from other coastal States such as Massachusetts, Florida, and Louisiana.⁵⁸² Any effects of global climate change (e.g. water supply issues, increases in wildfires, effects on agriculture) could certainly affect California. But those effects would also affect other parts of the United States. Many parts of the United States, especially western States, may have issues related to drinking water (e.g., increased salinity) and wildfires, and effects on agriculture; these occurrences are by no means limited to California. These are issues of national, indeed international, concern. Further, these are some of the effects that EPA considered as bases for the section 202(a) GHG endangerment finding, which was a prerequisite for the Federal GHG standards for motor vehicles.⁵⁸³ EPA has also previously opined that evaluation of whether California’s standards are necessary to meet compelling and extraordinary conditions is not contingent on or directly related to EPA’s cause or contribution finding for the section 202(a) GHG endangerment finding, which was a completely different

determination than whether California needs its mobile source pollution program to meet compelling and extraordinary conditions in California (79 FR 46256, 46262; August 7, 2014).

See also *Utility Air Regulatory Group v. EPA*, 134 S. Ct. 2427 (2014) (partially reversing the GHG “Tailoring” Rule on grounds that the section 202(a) endangerment finding for GHG emissions from motor vehicles did not compel regulation of all sources of GHG emissions under the Prevention of Significant Deterioration and Title V permit programs).

As also previously indicated, California is to demonstrate “compelling and extraordinary circumstances sufficiently different from the nation as a whole to justify standards on automobile emissions which may, from time to time, need to be more stringent than national standards.” S. Rep. No. 403, 90th Cong. 1st Sess., at 32 (1967). (Emphasis added.) EPA does not believe that these conditions, mentioned above, merit separate GHG standards in California. Rather, these effects, as previously explained, are widely shared and do not present “unique problems” with respect to the nature or degree of the effect California would experience. In sum, EPA finds that any effects of global climate change in California are not “extraordinary” as compared to the rest of the country. EPA is thus, proposing to find that CARB has not demonstrated that these negative impacts it attributes to global climate change are “extraordinary” to merit separate GHG and ZEV standards.

The ACC program waiver contained references to the potential GHG benefits or attributes of CARB’s GHG and ZEV standards program (78 FR 2114, 2130–2131). CARB repeatedly touted the benefits of both the ZEV and GHG standards as it related to the GHG emissions reductions in California. In one instance, CARB stated that the ACC program regulations for the 2017 through 2025 MYs were designed to respond to California’s identified goals of reducing GHG emissions to 80% below 1990 levels by 2050 and in the near term to reduce GHG levels to 1990 levels by 2020 (78 FR 2114, 2130–31). CARB’s Resolution 12–11, (January 26, 2012).⁵⁸⁴ In another instance, CARB noted that the ZEV regulation amendments were intended to focus primarily on zero emission drive—that is BEVs, FCVs, and PHEVs in order to move advanced, low GHG vehicles from

demonstration phase to commercialization (78 FR 2130). CARB further noted that “ZEVs have ultra-low GHG emission levels that are far lower than non-ZEV technology” (78 FR 2139). In yet another instance, CARB relied on conclusions from the September 2010 Joint Technical Assessment Report (TAR), which was developed by EPA, NHTSA, and CARB, on effects of the ZEV requirements on GHG standards. This report concluded that “electric drive vehicles including hybrid(s) . . . battery electric vehicles . . . plug-in hybrid(s) . . . and hydrogen fuel cell vehicles . . . can dramatically reduce petroleum consumption and GHG emissions compared to conventional technologies. The future rate of penetration of these technologies into the vehicle fleet is not only related to future GHG and corporate average fuel economy (CAFE) standards, but also to future reductions in HEV/PHEV/EV battery costs, [and] the overall performance and consumer demand for the advanced technologies” (78 FR 2142). But nowhere does CARB either show or purport to show a causal connection between its GHG standards and reducing any adverse effects of climate change in California. EPA does not believe that identifying methods for reducing GHG emissions and then noting the potential dangers of climate change are sufficient to demonstrate that California needs its standards to meet compelling and extraordinary circumstances as contemplated under section 209(b)(1)(B). California also does not need the ZEV requirements to meet “compelling and extraordinary” conditions in California given that the FCV “travel provision” allow manufacturers to generate credits in section 177 states as a means to satisfy those manufacturers’ obligations to comply with the mandate that a certain percentage of their vehicles sold in California be ZEV (or be credited as such from sales in section 177 States). In sum, California did not quantify and demonstrate climate benefits in California that may result from the GHG standards. EPA therefore, proposes to find that it is not appropriate to waive preemption for California to enforce its GHGs standards. EPA continues to believe that any problems related to atmospheric concentrations of GHG are global in nature and any reductions achieved as a result of California’s separate GHG standards will not accrue meaningful benefits to California. Thus, GHG emissions raise issues that do not bear the same causal link between local emissions and local benefits to health and welfare in California as do local or

⁵⁸¹ IPCC. 2015. Intergovernmental Panel on Climate Change (IPCC) Observed Climate Change Impacts Database, available at http://sedac.ipcc-data.org/ddc/observed_ar5/index.html.

⁵⁸² They are also similar to previous claims marshalled by Massachusetts over a decade ago. *Massachusetts v. EPA*, 549 U.S. 497, 522–24 (2007). According to Massachusetts, at the time, global sea levels rose between 10 and 20 centimeters over the 20th century as a result of global warming and had begun to swallow its coastal areas.

⁵⁸³ 74 FR 66496, 66517–19, 66533 (December 15, 2009).

⁵⁸⁴ Available in the docket for the January 2013 waiver decision, Docket No. EPA–HQ–OAR–2012–0562.

regional air pollution problems (such as criteria pollutants). EPA further finds that atmospheric concentrations of GHGs are not the kind of local or regional air pollution problem Congress intended to identify in the second criterion of section 209(b)(1)(B). These findings also apply to the ZEV provisions given that CARB, in a change from prior practice, and as previously explained, cited its ZEV standards as a means to reduce GHG emissions instead of criteria pollutants for MY 2021 through MY 2025. Thus, EPA is proposing to withdraw the waiver of preemption for the GHG and ZEV requirements for MYs 2021 through 2025 because California does not need these provisions to meet compelling and extraordinary conditions.

(b) Proposed Finding Under Section 209(b)(1)(C): California's Standards Are Not Consistent With Section 202(a)

(1) Introduction

Under section 209(b)(1)(C), EPA cannot grant a waiver request if EPA finds that California's "standards and accompanying enforcement procedures are not consistent with section 202(a) of the Act."⁵⁸⁵ The EPA is also proposing to find that both ZEV and GHG standards for new MY 2021 through 2025 are not consistent with Section 202(a) of the Clean Air Act, as contemplated by section 209(b)(1)(C). Specifically, EPA is proposing to determine that there is inadequate lead time to permit the development of technology necessary to meet those requirements, giving appropriate consideration to cost of compliance within the lead time provided in the 2013 waiver. This finding reflects the assessments in today's proposal on the technological feasibility of the Federal GHG standards for MY 2021 through 2025.⁵⁸⁶

As previously explained, the MY 2021 through 2025 Federal and CARB GHG standards were the results of collaboration between CARB and EPA. The respective standards are equally stringent and have the same lead time. (78 FR 2135) CARB's GHG standards

⁵⁸⁵ Section 202(a) provides that an emission standard shall take effect after such period of time as the Administrator finds necessary to permit development and application of the requisite technology, giving appropriate consideration to compliance costs.

⁵⁸⁶ Although this section generally discusses the technological feasibility of CARB's GHG standards for MY 2021–2025, we believe the current Federal standards are sufficiently similar to (if not less stringent than) the current California standards to serve as an appropriate proxy for considering the technological feasibility of the current California standards. *Compare* Cal. Code Regs. Tit. 13, § 1961.3 with 40 CFR 89.1818–12.

also rely on emerging technology that are similar to the ones for the Federal GHG standards, including ZEV-type technologies (78 FR 2136–7). Most importantly, CARB's feasibility finding, and EPA's decision to grant the waiver, noted a "deemed to comply" provision that allowed manufacturers of advanced technology vehicles to comply with CARB GHG standards through compliance with the Federal GHG standards as well as utilize the EPA accounting provisions for these vehicles (78 FR 2136). Revisions to the Federal GHG standards, in light of the technology development and availability assessment for those standards, would therefore, implicate the technological feasibility findings that served as the underpinning for EPA's grant of CARB's GHG standards waiver.

Further, because EPA believes that the ZEV and GHG standards are intertwined as shown in some of the program complexities discussed above, EPA believes that this provides further justification for withdrawing the waiver of preemption for both standards, under section 209(b)(1)(C). For example, in the waiver request CARB stated that the "ZEV regulation must be considered in conjunction with the proposed LEV III amendments. Vehicles produced as a result of the ZEV regulation are part of a manufacturer's light-duty fleet and are therefore included when calculating fleet averages for compliance with the LEV III GHG amendments." CARB's Initial Statement of Reasons at 62–63, which is in the docket for the waiver decision.⁵⁸⁷ CARB also noted "[b]ecause the ZEVs have ultra-low GHG emission levels that are far lower than non-ZEV technology, they are a critical component of automakers' LEV III GHG standard compliance strategies." *Id.* CARB further explained that "the ultra-low GHG ZEV technology is a major component of compliance with the LEV III GHG fleet standards for the overall light duty fleet." *Id.*

Similarly, with regard to CARB's ZEV standards, EPA is now cognizant that certain ZEV sales requirements mandated by CARB are technologically infeasible within the provided lead-time for purposes of CAA 209(b)(1)(C). Specifically, today's proposal also raises questions as to CARB's technological projections for ZEV-type technologies, which are a compliance option for both the ZEV mandate and GHG standards. CARB's ZEV regulations also include the travel provision, which allowed manufacturers of ZEVs sold in California to count toward compliance

⁵⁸⁷ Docket ID No. EPA-HQ-OAR-2012-0562.

in section 177 States, but which was limited to FCVs starting with MY 2018. The manufacturer credit system was premised on ever increasing numbers of ZEVs that would be sold in each of the section 177 States. Challenges for ZEVs in these States include lack of market penetration, consumer demand levels that are lower than projections at the time of the grant of the ACC waiver in 2013, and lack of or slow development of necessary infrastructure. This in turn means that manufacturers in section 177 States are unlikely to meet CARB's projections that their sales in those States will generate the necessary credits as CARB projected to support the ZEV sales requirement mandate in the lead time provided.

Today's proposal indicates challenges for the adoption of all ZEV technologies such as lack of required infrastructure and a lower level of consumer demand for FCVs in both California and individual section 177 States, and EPA believes it is now unlikely that manufacturers will be able to generate requisite credits in section 177 States in the lead time provided. In short, EPA is now of the view that CARB's projections and assumptions that underlay its ACC program and its 2013 waiver application were overly ambitious and likely will not be realized within the provided lead time. Thus, EPA is also proposing to find that CARB's ZEV standards for MY 2021 through 2025 are not technologically feasible and therefore, are not consistent with section 209(b)(1)(C).

(2) Historical Waiver Practices Under Section 209(b)(1)(C)

In prior waivers of Federal preemption, under section 209(b), EPA has explained that California's standards are not consistent with section 202(a) if there is inadequate lead time to permit the development of technology necessary to meet those requirements, given appropriate consideration to the cost of compliance within that time. California's accompanying enforcement procedures would also be inconsistent with section 202(a) if the Federal and California test procedures were inconsistent.

EPA also relies on two key decisions handed down by the U.S. Court of Appeals for the D.C. Circuit for guidance regarding the lead time requirements of section 202(a): *Natural Resources Defense Council v. EPA (NRDC)*, 655 F.2d 318 (D.C. Cir. 1981) (upholding EPA's lead time projections for emerging technologies as reasonable), and *International Harvester v. Ruckelshaus (International Harvester)*, 478 F.2d 615 (D.C. Cir. 1979)

(reversing EPA’s refusal to extend compliance deadline where technology was presently available on grounds that hardship would likely result if it were a wrongful denial of compliance deadline extension.). EPA further notes the court’s conclusion in *NRDC*.

Given this time frame [a 1980 decision on 1985 model year standards], we feel that there is *substantial room for deference* to the EPA’s expertise in projecting the likely course of development. The essential question in this case is the pace of that development, and absent a revolution in the study of industry, defense of such a projection can never possess the inescapable logic of a mathematical deduction. We think that the EPA will have demonstrated the reasonableness of its basis for projection if it answers any theoretical objections to the [projected control technology], identifies the major steps necessary in refinement of the technology, and offers plausible reasons for believing that each of those steps can be completed in the time available.

NRDC, 655 F.2d at 331 (emphasis added).

With regard to appropriate lead time in the section 209(b) waiver context, EPA considers whether adequate control technology is presently available or already in existence and in use at the time CARB adopts standards for which it seeks a waiver. If adequate control technology is not presently available, EPA determines whether CARB has provided adequate lead time for the development and application of necessary technology prior to the effective date of applicable standards. As explained above, considerations under this criterion include adequacy of lead time, technological feasibility and costs as well as test procedures consistency. Notably, there are similar considerations for Federal standards setting under section 202(a). For example, in adopting the MY 2017 through 2025 GHG standards, section 202(a) required and EPA found in October 2012 that the MY 2017 through 2025 GHG standards are feasible in the lead time provided and that technology costs were reasonable (77 FR 62671–73; October 15, 2012). Even where technology is available, EPA can consider hardships that could result to manufacturers from either a short lead time or not granting a compliance extension. *International Harvester*, 478 F.2d at 626.

Where CARB relies on emerging technology (*i.e.*, where technology is unavailable at time of grant of waiver), EPA will review CARB’s prediction of future technological developments and determine whether CARB has provided reasoned explanations for the time period selected. Any projections by CARB would have to be subject to

“restraints of reasonableness and does not open the door to crystal ball inquiry.” *NRDC v. EPA*, 655 F.2d at 329. “The Clean Air Act requires the EPA to look to the future in setting standards, but the agency must also provide a reasoned explanation of its basis for believing that its projection is reliable.” *Id.*

EPA will make a consistency finding where CARB provides for longer lead time in instances in of emerging or unavailable technology at the time CARB adopts its standards. In sum, EPA’s review of CARB’s technological feasibility involves both evaluations of predictions for future technological advances and presently available technology. EPA also believes that a longer lead time would allow CARB “modify its standards if the actual future course of technology diverges from expectation.” *Id.*

As previously mentioned above, costs considerations are also tied to the compliance timing for a particular standard and are thus, relevant for purposes of the consistency determination called for by the third waiver criterion under section 209(b)(1)(C). In evaluating compliance costs for CARB standards, EPA considers the actual cost of compliance in the time provided by applicable California regulations. Compliance costs “relates to the timing of standards and procedures.” *MEMA I*, 627 F.2d at 1118 (emphasis in original). Where technology is not presently available, EPA also considers the period necessary to permit development and application of the requisite technology.

In terms of waiver practice, EPA has previously taken the position that technology control costs must be excessive for EPA to find that California’s standards are inconsistent with section 202(a).⁵⁸⁸ (*See MEMA I*, 627 F.2d at 1118 “Congress wanted to avoid undue economic disruption in the automotive manufacturing industry and also sought to avoid doubling or tripling of the cost of motor vehicles to purchasers.”) Consistent with this practice, in the ACC program waiver, EPA contended that control costs for the ZEV standards were “not excessive.” “Under EPA’s traditional analysis of cost in the waiver context, because [an incremental cost of \$12,900 in MY 2020] does not represent a ‘doubling or tripling’ of the vehicle cost, such cost is not excessive nor does it represent an infeasible standard” (78 FR 2142). EPA now believes that its prior view that a

doubling or tripling of vehicle cost constitutes an excessive cost or represents an infeasible standard was incorrect. Such a bright line (and extreme) test is inappropriate. Instead, the agency should holistically consider whether technology control costs are infeasible by considering the availability of the technology, the reasonableness of costs associated with adopting it within the required lead time, and consumer acceptance.

(3) Interpretation of Section 209(b)(1)(C)

EPA cannot grant a waiver, under section 209(b)(1)(C), if California’s “standards and accompanying enforcement procedures are not consistent with section [202(a)].” Relevant legislative history from the 1967 CAA amendments indicates that EPA is to grant a waiver unless it finds that there is “inadequate time to permit the development of the necessary technology given the cost of compliance within that time period.” This is similar to language found in section 202(a), which is discussed below. Additional relevant legislative history indicates that EPA is not to grant a waiver where “California standards are not consistent with the intent of section 202(a) of the Act, including economic practicability and technological feasibility.” The cross-reference to section 202(a) is an indication of the role EPA plays in reviewing California’s waiver request under section 209(b)(1)(C).

With regard to section 202(a), standards promulgated under section 202(a)(1) “shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period.” Section 202(a). Pertinent legislative history from the 1970 and 1977 amendments indicate that EPA “was expected to press for the development and application of improved technology rather than be limited by that which exists today.” S. Rep. No. 1196, 91st Cong., 2d Sess. 24 (1970); H.R. Rep. No. 294, 95th Cong., 1st Sess. 273 (1977). In sum, EPA believes that section 202(a) allows for a projection of lead time as to future technological developments.

(4) Proposed Finding That California’s Standards Are Not Consistent With Section 202(a)

As previously mentioned, today’s proposal now cast significant doubts on EPA’s predictions for future and timely availability of emerging technologies for compliance with Federal GHG standards for MY 2021–2025. It highlights in

⁵⁸⁸ 74 FR 32744, 32774 (July 8, 2009); 47 FR 7306, 7309 (February 18, 1982); 46 FR 26371, 26373 (May 12, 1981), 43 FR 25735 (June 14, 1978).

particular challenges for ZEV-type technologies, such as BEVs and PHEVs, that California relied on as compliance options for the ZEV mandate requirements and GHG standards. As also previously mentioned CARB's GHG standards were developed jointly by EPA and CARB with the result that CARB's GHG standards share a similar structure with EPA GHG standards in terms of both lead time and stringency. For instance, the methodology and underlying data used by CARB to assess technologies and costs were similar to and, in many instances, the same as those used by EPA to assess the Federal GHG standards (78 FR 2136). Also, the technological feasibility analyses underlying CARB's standards were based on several emerging technologies similar to control technologies considered by EPA and NHTSA in evaluating Federal GHG standards for MYs 2021–2025. *Id.* Additionally, CARB's feasibility finding was premised on a finding of reduced compliance costs and flexibility because of the deemed to comply provisions, which allowed for compliance with Federal GHG standards in lieu of California's standards.⁵⁸⁹ In sum, EPA's findings of technological feasibility for the GHG and ZEV standards were premised on the availability of both current and emerging technologies in the lead-time CARB provided for new MY 2021–2025 motor vehicles (78 FR 2138–2139, 2143). These kinds of control technologies would include ZEV-type technologies, which are used as a compliance option for CARB's GHG standards because their GHG emissions levels are significantly lower than non-ZEV technology. As the NPRM

⁵⁸⁹ On May 7, 2018, California issued a notice seeking comments on “potential alternatives to a potential clarification” of this provision for MY vehicles that would be affected by revisions to the Federal GHG standards. The notice is available at: https://www.arb.ca.gov/msprog/levprog/leviii/leviii_dtc_notice05072018.pdf. EPA proposes to determine that the “deemed to comply” provision in California's program does not prevent EPA from finding that California's ZEV and GHG standards are inconsistent with section 202(a), for two reasons. First, the “deemed to comply” provision is in flux; the state process that may “clarify[]” it renders it unclear whether California will continue to deem a program that may be revised as proposed in this joint rulemaking to comply with its own program. Second, EPA proposes to determine that a “deemed to comply” provision is logically incompatible with a preemption waiver analysis. The entire premise of 209(a) preemption and 209(b)(1) waivers is that California's standards will differ from the Federal standards. If “deemed to comply” provisions in California's program prevented EPA from determining that California's standards are inconsistent with section 202(a), then those provisions' presence would prevent EPA's analysis under this prong (209(b)(1)(C)) from denying it a waiver no matter the content of those standards.

discusses, certain control technology would likely not be fully developed in time for deployment in MY 2021 through 2025 motor vehicles.

With regard to the ZEV standards, CARB's waiver request contained projections and explanations for ZEVs that included projected sales of FCVs in both California and section 177 States. Specifically, CARB's projections, at the time, were that nearly every vehicle manufacturer would be introducing BEVs and PHEVs within the next one to three years, and five manufacturers would be commercially introducing FCVs by 2015.⁵⁹⁰ As explained above, the ZEV regulations contains the travel provision that allow manufacturers to comply with the ZEV sales mandate by generating credits for vehicle sales in section 177 States and vice versa. At the grant of the ACC program waiver, EPA found CARB's assumptions and projections appeared reasonable within the provided lead time for MYs 2021 through 2025 (78 FR 2141–42).

Technological challenges may serve as basis for either a future compliance deadline extension or modifications to the federal GHG standards that would be consistent with today's proposal and would then raise questions as to CARB's predictions and projections of technological feasibility and costs. At this time, however, CARB has shown no indication that it intends to either extend the compliance deadline for or modify its standards by providing additional compliance flexibilities. EPA believes it is reasonable, therefore, to consider any expected hardship that would be posed to manufacturers if EPA does not withdraw CARB's waiver. *NRDC*, 655 F.2d at 330. An early withdrawal of the waiver would also provide a measure of certainty to all manufacturers. “[T]he base hour for commencement of production is relatively distant, and until that time the probable effect of a relaxation of the standard would be to mitigate the consequences of any strictness in the final rule, not to create new hardships.”⁵⁹¹ Further, from past experience with waivers for challenging standards, EPA is aware that CARB has subsequently either modified compliance deadlines or provided additional compliance flexibilities for such standards.⁵⁹² EPA also notes that

⁵⁹⁰ CARB waiver request at 27–28, which can be found in Docket ID No. EPA–HQ–OAR–2012–0562.

⁵⁹¹ *Id.* The “hardships” referred to are hardships that would be created for manufacturers able to comply with the more stringent standards being relaxed late in the process.

⁵⁹² For example, CARB has made multiple revisions to its on-Board diagnostics (OBD) (81 FR

even at the time of the waiver request, CARB was already cognizant of challenges presented by both ZEV and GHG standards. CARB noted that although several individual technologies offered substantial CO₂ reduction potential many of the technologies had only limited deployment in new vehicle models (78 FR 2136). CARB also extended the travel provisions beyond 2017 for FCVs due to insufficient refueling infrastructure in section 177 States as compared to other kinds of ZEV technologies (78 FR 2120; CARB Resolution 12–11 at 15). EPA is, therefore, acting in anticipation of the challenges presented by its GHG and ZEV standards. As previously explained, a late modification or extension of time carries attendant hardships for technologically advanced manufacturers who might have made major investment commitments (*International Harvester*, 478 F.2d 615). EPA believes that today's proposal, when finalized, would be sufficiently ahead of the compliance deadline for MY 2021 through 2025 and thus, manufacturers would not incur any hardships. Indeed, the expectation is that the proposed withdrawal would provide notice to manufacturers of the intended compliance deadline modifications for MYs 2021 through 2025.

Finally, the agency is acting on the likelihood of increased compliance costs as shown in today's proposal. (These are costs that will likely be passed on to consumers in most instances.) As previously explained, because compliance technologies that California relied on for both ZEV and GHG standards are similar to the technologies considered by EPA in evaluating the feasibility of standards for MYs 2021 through 2025, economies of scale were expected to drive down both manufacturing and technology costs. The EPA, however, now expects that manufacturers may no longer be willing to commit to investments for a limited market as compared to the broader national market, which was contemplated by the federal and California GHG standards.

Today's proposal also confirms slower pace of development of ZEV technology and differences in projected manufacturing costs in states that have adopted these standards under section 177 as well as lower consumer demands for FCVs. The EPA also now expects that the pace of technological developments as it relates to infrastructure for FCVs will slow down.

78144 (November 7, 2016)) and the ZEV program regulations (76 FR 61096 (October 3, 2011)).

The EPA is thus, proposing to find that CARB's ZEV standards for MYs 2021 through 2025 are technologically infeasible in the lead time provided and therefore, that CARB's ZEV standards are not consistent with section 202(a).

As previously mentioned EPA is proposing to withdraw the grant of waiver for both standards on grounds that they are not consistent with section 202(a). In light of all the foregoing, the agency finds that is necessary and reasonable to reconsider the grant of waiver for CARB's GHG and ZEV standards. EPA requests comments on all aspects of this proposal, especially specific costs for the ZEV requirements as it relates to MYs 2021 through 2025.

4. States Cannot Adopt California's GHG Standards for NAAQS Nonattainment Purposes Under Section 177

As explained above, CAA section 177 provides that other States, under certain circumstances and with certain conditions, may "adopt and enforce" standards that are "identical to the California standards for which a waiver has been granted for [a given] model year." 42 U.S.C. 7507. The EPA proposes to determine that this section does not apply to CARB's GHG standards.

In this regard, the EPA notes that the section is titled "New motor vehicle emission standards in nonattainment areas" and that its application is limited to "any State which has [state implementation] plan provisions approved under this part"—*i.e.*, under CAA title I part D, which governs "Plan requirements for nonattainment areas." Areas are only designated nonattainment with respect to criteria pollutants for which EPA has issued a NAAQS, and nonattainment SIPs are intended to assure that those areas attain the NAAQS. It would be illogical to require approved nonattainment SIP provisions as a predicate for allowing States to adopt California's standards if states could use this authority to adopt California standards that addressed environmental problems other than nonattainment of criteria pollutant standards. Furthermore, the placement of section 177 in title I part D, rather than title II (the location of the California waiver provision) would make no sense if it functioned as a waiver applicable to all subjects, as does the California-focused provision under section 209(b), rather than as a provision specifically targeting criteria pollutants and nonattainment areas, as does the rest of title I part D.

Therefore, the text, context, and purpose of section 177 suggest, and the EPA proposes to conclude, that it is

limited to providing States the ability, under certain circumstances and with certain conditions, to adopt and enforce standards identical to those for which California has obtained a waiver—provided that those standards are designed to control criteria pollutants to address NAAQS nonattainment. EPA solicits comment on how and when this new interpretation should be adopted and implemented, if finalized (*e.g.*, whether EPA should adopt it as of the effective date of a final rule, or as of a later date, such as model year 2021 or calendar year 2020, in order to allow additional time for planning and transition).

5. Severability and Judicial Review

EPA considers its proposed decision on the appropriate federal standards for light duty greenhouse gas vehicles for MY 2021–2025 to be severable from its decision on withdrawing the ACC waiver, particularly with respect to the requirements of CAA 209(b)(1)(B). Our proposed interpretation of CAA 209(b)(1)(B), and our evaluation of the ACC waiver under that provision, does not depend on our decision to finalize, and a court's decision to uphold, the light duty vehicles standards being proposed today under CAA 202(a). EPA solicits comment on the severability of these actions, particularly with respect to the other criteria of CAA 209(b).

Section 307(b)(1) of the CAA provides in which Federal courts of appeal petitions of review of final actions by EPA must be filed. This section provides, in part, that petitions for review must be filed in the Court of Appeals for the District of Columbia Circuit if (i) the Agency action consists of "nationally applicable regulations promulgated, or final action taken, by the Administrator," or (ii) such action is locally or regionally applicable, but "such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such action is based on such a determination." Separate and apart from whether a court finds this action to be locally or regionally applicable, the Administrator is proposing to find that any final action resulting from this rulemaking is based on a determination of "nationwide scope or effect" within the meaning of section 307(b)(1).

This decision, when finalized, will affect persons in California and those manufacturers and/or owners/operators of new motor vehicles nationwide who must comply with California's new motor vehicle requirements. For instance, manufacturers may generate credits in section 177 states as a means

to satisfy those manufacturers' obligations to comply with the mandate that a certain percentage of their vehicles sold in California be ZEV (or be credited as such from sales in section 177 States). In addition, because other states have adopted aspects of California's ACC program this decision would also affect those states and those persons in such states, which are located in multiple EPA regions and federal circuits. For these reasons, EPA determines and finds for purposes of section 307(b)(1) that any final withdrawal action would be of national applicability, and also that such action would be based on a determination of nationwide scope or effect for purposes of section 307(b)(1). Pursuant to section 307(b)(1), judicial review of this final action may be sought only in the United States Court of Appeals for the District of Columbia Circuit. Judicial review of any final action may not be obtained in subsequent enforcement proceedings, pursuant to section 307(b)(2).

VII. Impacts of the Proposed CAFE and CO₂ Standards

A. Overview

New CAFE and CO₂ standards will have a range of impacts. EPCA/EISA and NEPA require DOT to consider such impacts when making decisions about new CAFE standards, and the CAA requires EPA to do so when making decisions about new emissions standards. Like past rulemakings, today's announcement is supported by the analysis of many potential impacts of new standards. Today's announcement proposes new standards through model year 2026, explicitly estimates manufacturers' responses to standards through model year 2029, and considers impacts, throughout those vehicles' useful lives. The agencies do not *know* today what would actually come to pass decades from now under the proposed standards or under any of alternatives under consideration. The analysis is thus properly interpreted not as a forecast, but rather as an assessment—reflecting the best judgments regarding many different factors—of impacts that *could* occur.⁵⁹³ As discussed below, the analysis was conducted to explore the sensitivity of this assessment to a variety of potential changes in key analytical inputs (*e.g.*, fuel prices).

This section summarizes various impacts of the preferred alternative (*i.e.*, the proposed standards) defined above in Section III. The no-action alternative

⁵⁹³ "Prediction is very difficult, especially if it's about the future." Attributed to Niels Bohr, Nobel laureate in Physics.

dynamically identifies the most cost-effective combination of technologies for each manufacturer's vehicle fleet based on the assumptions about each technology's effectiveness, cost, and interaction with all other technologies. For further discussion of the technology pathways employed in the CAFE model, please refer to Section II.D above.

XI. Public Participation

NHTSA and EPA request comment on all aspects of this NPRM. This section describes how you can participate in this process.

A. How do I prepare and submit comments?

In this NPRM, there are many issues common to both NHTSA's and EPA's proposals. For the convenience of all parties, comments submitted to the NHTSA docket will be considered comments to the EPA docket and vice versa. An exception is that comments submitted to the NHTSA docket on NHTSA's Draft Environmental Impact Statement (EIS) will not be considered submitted to the EPA docket. Therefore, commenters only need to submit comments to either one of the two agency dockets, although they may submit comments to both if they so choose. Comments that are submitted for consideration by only one agency should be identified as such, and comments that are submitted for consideration by both agencies should also be identified as such. Absent such identification, each agency will exercise its best judgment to determine whether a comment is submitted on its proposal.

Further instructions for submitting comments to either the NHTSA or the EPA docket are described below.

NHTSA: Your comments must be written and in English. To ensure that your comments are correctly filed in the docket, please include the docket number NHTSA-2018-0067 in your comments. Your comments must not be more than 15 pages long.⁹²⁵ NHTSA established this limit to encourage you to write your primary comments in a concise fashion. However, you may attach necessary additional documents to your comments, and there is no limit on the length of attachments. If you are submitting comments electronically as a PDF (Adobe) file, we ask that the documents please be scanned using the Optical Character Recognition (OCR) process, thus allowing the agencies to search and copy certain portions of your submissions.⁹²⁶ Please note that

⁹²⁵ 49 CFR 553.21.
⁹²⁶ Optical character recognition (OCR) is the process of converting an image of text, such as a

pursuant to the Data Quality Act, in order for substantive data to be relied upon and used by the agency, it must meet the information quality standards set forth in the OMB and DOT Data Quality Act guidelines. Accordingly, we encourage you to consult the guidelines in preparing your comments. OMB's guidelines may be accessed at <https://www.gpo.gov/fdsys/pkg/FR-2002-02-22/pdf/R2-59.pdf>. DOT's guidelines may be accessed at <https://www.transportation.gov/regulations/dot-information-dissemination-quality-guidelines>.

EPA: Direct your comments to Docket ID No. EPA-HQ-OAR-2018-0283. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through <http://www.regulations.gov> or email. The <http://www.regulations.gov> website is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to EPA without going through <http://www.regulations.gov>, your email address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket visit the EPA Docket Center homepage at <https://www.epa.gov/dockets>.

B. Tips for Preparing Your Comments

When submitting comments, please remember to:

- Identify the rulemaking by docket number and other identifying information

scanned paper document or electronic fax file, into computer-editable text.

(subject heading, **Federal Register** date and page number).

- Explain why you agree or disagree, suggest alternatives, and substitute language for your requested changes.
- Describe any assumptions and provide any technical information and/or data that you used.
- If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
- Provide specific examples to illustrate your concerns and suggest alternatives.
- Explain your views as clearly as possible, avoiding the use of profanity or personal threats.
- Make sure to submit your comments by the comment period deadline identified in the **DATES** section above.

C. How can I be sure that my comments were received?

NHTSA: If you submit your comments to NHTSA's docket by mail and wish DOT Docket Management to notify you upon its receipt of your comments, please enclose a self-addressed, stamped postcard in the envelope containing your comments. Upon receiving your comments, Docket Management will return the postcard by mail.

D. How do I submit confidential business information?

Any confidential business information (CBI) submitted to one of the agencies will also be available to the other agency. However, as with all public comments, any CBI information only needs to be submitted to either one of the agencies' dockets and it will be available to the other. Following are specific instructions for submitting CBI to either agency:

EPA: Do not submit CBI to EPA through <http://www.regulations.gov> or email. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD-ROM that you mail to EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with the procedures set forth in 40 CFR part 2.

NHTSA: If you wish to submit any information under a claim of confidentiality, you should submit three copies of your complete submission, including the information you claim to be confidential business information, to the Chief Counsel, NHTSA, at the

address given above under **FOR FURTHER INFORMATION CONTACT**. When you send a comment containing confidential business information, you should include a cover letter setting forth the information specified in 49 CFR part 512.

In addition, you should submit a copy from which you have deleted the claimed confidential business information to the Docket by one of the methods set forth above.

E. Will the agencies consider late comments?

NHTSA and EPA will consider all comments received before the close of business on the comment closing date indicated above under **DATES**. To the extent practicable, we will also consider comments received after that date. If interested persons believe that any information that the agencies place in the docket after the issuance of the NPRM affects their comments, they may submit comments after the closing date concerning how the agencies should consider that information for the final rule. However, the agencies' ability to consider any such late comments in this rulemaking will be limited due to the time frame for issuing a final rule.

If a comment is received too late for us to practicably consider in developing a final rule, we will consider that comment as an informal suggestion for future rulemaking action.

F. How can I read the comments submitted by other people?

You may read the materials placed in the dockets for this document (*e.g.*, the comments submitted in response to this document by other interested persons) at any time by going to <http://www.regulations.gov>. Follow the online instructions for accessing the dockets. You may also read the materials at the EPA Docket Center or the DOT Docket Management Facility by going to the street addresses given above under **ADDRESSES**.

G. How do I participate in the public hearings?

NHTSA and EPA will jointly host two public hearings on the dates and locations to be announced in a separate notice. At all hearings, both agencies will accept comments on the rulemaking, and NHTSA will also accept comments on the EIS.

NHTSA and EPA will conduct the hearings informally, and technical rules of evidence will not apply. We will arrange for a written transcript of each hearing, to be posted in the dockets as soon as it is available, and keep the official record of each hearing open for

30 days following that hearing to allow you to submit supplementary information.

XII. Regulatory Notices and Analyses

A. Executive Order 12866, Executive Order 13563

Executive Order 12866, "Regulatory Planning and Review" (58 FR 51735, Oct. 4, 1993), as amended by Executive Order 13563, "Improving Regulation and Regulatory Review" (76 FR 3821, Jan. 21, 2011), provides for making determinations whether a regulatory action is "significant" and therefore subject to the Office of Management and Budget (OMB) review and to the requirements of the Executive Order. Under section 3(f)(1) of Executive Order 12866, this action is an "economically significant regulatory action" because if adopted, it is likely to have an annual effect on the economy of \$100 million or more. Accordingly, EPA and NHTSA submitted this action to the OMB for review and any changes made in response to OMB recommendations have been documented in the docket for this action. The benefits and costs of this proposal are described above and in the Preliminary Regulatory Impact Analysis (PRIA), which is located in the docket and on the agencies' websites.

B. DOT Regulatory Policies and Procedures

The rule, if adopted, would also be significant within the meaning of the Department of Transportation's Regulatory Policies and Procedures. The benefits and costs of this proposal are described above and in the PRIA, which is located in the docket and on NHTSA's website.

C. Executive Order 13771 (Reducing Regulation and Controlling Regulatory Costs)

This proposed rule is expected to be an E.O. 13771 deregulatory action. Details on the estimated cost savings of this proposed rule can be found in PRIA, which is located in the docket and on the agencies' websites.

D. Executive Order 13211 (Energy Effects)

Executive Order 13211 applies to any rule that: (1) Is determined to be economically significant as defined under E.O. 12866, and is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (2) that is designated by the Administrator of the Office of Information and Regulatory Affairs as a significant energy action. If the regulatory action meets either criterion, the agencies must evaluate the adverse

energy effects of the proposed rule and explain why the proposed regulation is preferable to other potentially effective and reasonably feasible alternatives considered.

The proposed rule seeks to establish passenger car and light truck fuel economy standards and greenhouse gas emissions standards. An evaluation of energy effects of the proposed action and reasonably feasible alternatives considered is provided in NHTSA's Draft EIS and in the PRIA. To the extent that EPA's CO₂ standards are substantially related to fuel economy and accordingly, petroleum consumption, the Draft EIS and PRIA analyses also provide an estimate of impacts of EPA's proposed rule.

E. Environmental Considerations

1. National Environmental Policy Act (NEPA)

Concurrently with this NPRM, NHTSA is releasing a Draft Environmental Impact Statement (Draft EIS), pursuant to the National Environmental Policy Act, 42 U.S.C. 4321-4347, and implementing regulations issued by the Council on Environmental Quality (CEQ), 40 CFR part 1500, and NHTSA, 49 CFR part 520. NHTSA prepared the Draft EIS to analyze and disclose the potential environmental impacts of the proposed CAFE standards and a range of alternatives. The Draft EIS analyzes direct, indirect, and cumulative impacts and analyzes impacts in proportion to their significance.

The Draft EIS describes potential environmental impacts to a variety of resources. Resources that may be affected by the proposed action and alternatives include fuel and energy use, air quality, climate, land use and development, hazardous materials and regulated wastes, historical and cultural resources, noise, and environmental justice. The Draft EIS also describes how climate change resulting from global GHG emissions (including the U.S. light duty transportation sector under the Proposed Action and alternatives) could affect certain key natural and human resources. Resource areas are assessed qualitatively and quantitatively, as appropriate, in the Draft EIS.

NHTSA has considered the information contained in the Draft EIS as part of developing its proposal. The Draft EIS is available for public comment; instructions for the submission of comments are included inside the document. NHTSA will simultaneously issue the Final Environmental Impact Statement and Record of Decision, pursuant to 49

U.S.C. 304a(b), and U.S. Department of Transportation *Final Guidance on MAP-21 Section 1319 Accelerated Decisionmaking in Environmental Reviews* (http://www.dot.gov/sites/dot.gov/files/docs/MAP-21_1319_Final_Guidance.pdf) unless it is determined that statutory criteria or practicability considerations preclude simultaneous issuance. For additional information on NHTSA's NEPA analysis, please see the Draft EIS.

2. Clean Air Act (CAA) as Applied to NHTSA's Action

The CAA (42 U.S.C. 7401 *et seq.*) is the primary Federal legislation that addresses air quality. Under the authority of the CAA and subsequent amendments, EPA has established National Ambient Air Quality Standards (NAAQS) for six criteria pollutants, which are relatively commonplace pollutants that can accumulate in the atmosphere as a result of human activity. EPA is required to review each NAAQS every five years and to revise those standards as may be appropriate considering new scientific information.

The air quality of a geographic region is usually assessed by comparing the levels of criteria air pollutants found in the ambient air to the levels established by the NAAQS (taking into account, as well, the other elements of a NAAQS: Averaging time, form, and indicator). Concentrations of criteria pollutants within the air mass of a region are measured in parts of a pollutant per million parts (ppm) of air or in micrograms of a pollutant per cubic meter ($\mu\text{g}/\text{m}^3$) of air present in repeated air samples taken at designated monitoring locations using specified types of monitors. These ambient concentrations of each criteria pollutant are compared to the levels, averaging time, and form specified by the NAAQS in order to assess whether the region's air quality is in attainment with the NAAQS.

When the measured concentrations of a criteria pollutant within a geographic region are below those permitted by the NAAQS, EPA designates the region as an attainment area for that pollutant, while regions where concentrations of criteria pollutants exceed Federal standards are called nonattainment areas. Former nonattainment areas that are now in compliance with the NAAQS are designated as maintenance areas. Each State with a nonattainment area is required to develop and implement a State Implementation Plan (SIP) documenting how the region will reach attainment levels within time periods specified in the CAA. For maintenance areas, the SIP must document how the

State intends to maintain compliance with the NAAQS. When EPA revises a NAAQS, each State must revise its SIP to address how it plans to attain the new standard.

No Federal agency may "engage in, support in any way or provide financial assistance for, license or permit, or approve" any activity that does not "conform" to a SIP or Federal Implementation Plan after EPA has approved or promulgated it.⁹²⁷ Further, no Federal agency may "approve, accept, or fund" any transportation plan, program, or project developed pursuant to title 23 or chapter 53 of title 49, U.S.C., unless the plan, program, or project has been found to "conform" to any applicable implementation plan in effect.⁹²⁸ The purpose of these conformity requirements is to ensure that Federally sponsored or conducted activities do not interfere with meeting the emissions targets in SIPs, do not cause or contribute to new violations of the NAAQS, and do not impede the ability of a State to attain or maintain the NAAQS or delay any interim milestones. EPA has issued two sets of regulations to implement the conformity requirements:

(1) The Transportation Conformity Rule⁹²⁹ applies to transportation plans, programs, and projects that are developed, funded, or approved under title 23 or chapter 53 of title 49, U.S.C.

(2) The General Conformity Rule⁹³⁰ applies to all other federal actions not covered under transportation conformity. The General Conformity Rule establishes emissions thresholds, or de minimis levels, for use in evaluating the conformity of an action that results in emissions increases.⁹³¹ If the net increases of direct and indirect emissions are lower than these thresholds, then the project is presumed to conform and no further conformity evaluation is required. If the net increases of direct and indirect emissions exceed any of these thresholds, and the action is not otherwise exempt, then a conformity determination is required. The conformity determination can entail air quality modeling studies, consultation with EPA and state air quality agencies, and commitments to revise the SIP or to implement measures to mitigate air quality impacts.

The proposed CAFE standards and associated program activities are not

developed, funded, or approved under title 23 or chapter 53 of title 49, U.S.C. Accordingly, this action and associated program activities are not subject to transportation conformity. Under the General Conformity Rule, a conformity determination is required where a Federal action would result in total direct and indirect emissions of a criteria pollutant or precursor originating in nonattainment or maintenance areas equaling or exceeding the rates specified in 40 CFR 93.153(b)(1) and (2). As explained below, NHTSA's proposed action results in neither direct nor indirect emissions as defined in 40 CFR 93.152.

The General Conformity Rule defines direct emissions as "those emissions of a criteria pollutant or its precursors that are caused or initiated by the Federal action and originate in a nonattainment or maintenance area and occur at the same time and place as the action and are reasonably foreseeable."⁹³² Because NHTSA's action would set fuel economy standards for light duty vehicles, it would cause no direct emissions consistent with the meaning of the General Conformity Rule.⁹³³

Indirect emissions under the General Conformity Rule are "those emissions of a criteria pollutant or its precursors (1) That are caused or initiated by the federal action and originate in the same nonattainment or maintenance area but occur at a different time or place as the action; (2) That are reasonably foreseeable; (3) That the agency can practically control; and (4) For which the agency has continuing program responsibility."⁹³⁴ Each element of the definition must be met to qualify as indirect emissions. NHTSA has determined that, for purposes of general conformity, emissions that may result from the proposed fuel economy standards would not be caused by NHTSA's action, but rather would occur because of subsequent activities the agency cannot practically control. "[E]ven if a Federal licensing, rulemaking, or other approving action is a required initial step for a subsequent activity that causes emissions, such initial steps do not mean that a Federal agency can practically control any resulting emissions."⁹³⁵

⁹³² 40 CFR 93.152.

⁹³³ *Department of Transportation v. Public Citizen*, 541 U.S. 752, 772 (2004) ("[T]he emissions from the Mexican trucks are not 'direct' because they will not occur at the same time or at the same place as the promulgation of the regulations."). NHTSA's action is to establish fuel economy standards for MY 2021–2026 passenger car and light trucks; any emissions increases would occur well after promulgation of the final rule.

⁹³⁴ 40 CFR 93.152.

⁹³⁵ 40 CFR 93.152.

⁹²⁷ 42 U.S.C. 7506(c)(1).

⁹²⁸ 42 U.S.C. 7506(c)(2).

⁹²⁹ 40 CFR part 51, subpart T, and part 93, subpart A.

⁹³⁰ 40 CFR part 51, subpart W, and part 93, subpart B.

⁹³¹ 40 CFR 93.153(b).

As the CAFE program uses performance-based standards, NHTSA cannot control the technologies vehicle manufacturers use to improve the fuel economy of passenger cars and light trucks. Furthermore, NHTSA cannot control consumer purchasing (which affects average achieved fleetwide fuel economy) and driving behavior (*i.e.*, operation of motor vehicles, as measured by VMT). It is the combination of fuel economy technologies, consumer purchasing, and driving behavior that results in criteria pollutant or precursor emissions. For purposes of analyzing the environmental impacts of the proposal and alternatives under NEPA, NHTSA has made assumptions regarding all of these factors. The agency's Draft EIS predicts that increases in air toxic and criteria pollutants would occur in some nonattainment areas under certain alternatives. However, the proposed standards and alternatives do not mandate specific manufacturer decisions, consumer purchasing, or driver behavior, and NHTSA cannot practically control any of them.⁹³⁶

In addition, NHTSA does not have the statutory authority to control the actual VMT by drivers. As the extent of emissions is directly dependent on the operation of motor vehicles, changes in any emissions that result from NHTSA's proposed standards are not changes the agency can practically control or for which the agency has continuing program responsibility. Therefore, the proposed CAFE standards and alternative standards considered by NHTSA would not cause indirect emissions under the General Conformity Rule, and a general conformity determination is not required.

3. National Historic Preservation Act (NHPA)

The NHPA (54 U.S.C. 300101 *et seq.*) sets forth government policy and procedures regarding "historic properties"—that is, districts, sites, buildings, structures, and objects included on or eligible for the National Register of Historic Places. Section 106 of the NHPA requires federal agencies to "take into account" the effects of their actions on historic properties.⁹³⁷ The agencies conclude that the NHPA is not applicable to this proposal because the promulgation of CAFE and GHG

⁹³⁶ See, e.g., *Department of Transportation v. Public Citizen*, 541 U.S. 752, 772–73 (2004); *South Coast Air Quality Management District v. Federal Energy Regulatory Commission*, 621 F.3d 1085, 1101 (9th Cir. 2010).

⁹³⁷ Section 106 is now codified at 54 U.S.C. 306108. Implementing regulations for the Section 106 process are located at 36 CFR part 800.

emissions standards for light duty vehicles is not the type of activity that has the potential to cause effects on historic properties. However, NHTSA includes a brief, qualitative discussion of the impacts of the alternatives on historical and cultural resources in Section 7.3 of the Draft EIS.

4. Fish and Wildlife Conservation Act (FWCA)

The FWCA (16 U.S.C. 2901 *et seq.*) provides financial and technical assistance to States for the development, revision, and implementation of conservation plans and programs for nongame fish and wildlife. In addition, the Act encourages all Federal departments and agencies to utilize their statutory and administrative authorities to conserve and to promote conservation of nongame fish and wildlife and their habitats. The agencies conclude that the FWCA is not applicable to this proposal because it does not involve the conservation of nongame fish and wildlife and their habitats.

5. Coastal Zone Management Act (CZMA)

The Coastal Zone Management Act (16 U.S.C. 1451 *et seq.*) provides for the preservation, protection, development, and (where possible) restoration and enhancement of the nation's coastal zone resources. Under the statute, States are provided with funds and technical assistance in developing coastal zone management programs. Each participating State must submit its program to the Secretary of Commerce for approval. Once the program has been approved, any activity of a Federal agency, either within or outside of the coastal zone, that affects any land or water use or natural resource of the coastal zone must be carried out in a manner that is consistent, to the maximum extent practicable, with the enforceable policies of the State's program.⁹³⁸

The agencies conclude that the CZMA is not applicable to this proposal because it does not involve an activity within, or outside of, the nation's coastal zones that affects any land or water use or natural resource of the coastal zone. NHTSA has, however, conducted a qualitative review in its Draft EIS of the related direct, indirect, and cumulative impacts, positive or negative, of the alternatives on potentially affected resources, including coastal zones.

⁹³⁸ 16 U.S.C. 1456(c)(1)(A).

6. Endangered Species Act (ESA)

Under Section 7(a)(2) of the ESA federal agencies must ensure that actions they authorize, fund, or carry out are "not likely to jeopardize the continued existence" of any federally listed threatened or endangered species or result in the destruction or adverse modification of the designated critical habitat of these species. 16 U.S.C. 1536(a)(2). If a federal agency determines that an agency action may affect a listed species or designated critical habitat, it must initiate consultation with the appropriate Service—the U.S. Fish and Wildlife Service of the Department of the Interior and/or the National Oceanic and Atmospheric Administration's National Marine Fisheries Service of the Department of Commerce, depending on the species involved—in order to ensure that the action is not likely to jeopardize the species or destroy or adversely modify designated critical habitat. See 50 CFR 402.14. Under this standard, the federal agency taking action evaluates the possible effects of its action and determines whether to initiate consultation. See 51 FR 19926, 19949 (June 3, 1986).

Pursuant to Section 7(a)(2) of the ESA, the agencies have considered the effects of the proposed standards and have reviewed applicable ESA regulations, case law, and guidance to determine what, if any, impact there might be to listed species or designated critical habitat. The agencies have considered issues related to emissions of CO₂ and other GHGs and issues related to non-GHG emissions. Based on this assessment, the agencies have determined that the actions of setting CAFE and GHG emissions standards does not require consultation under Section 7(a)(2) of the ESA. Accordingly, NHTSA and EPA have concluded its review of this action under Section 7 of the ESA.

7. Floodplain Management (Executive Order 11988 and DOT Order 5650.2)

These Orders require Federal agencies to avoid the long- and short-term adverse impacts associated with the occupancy and modification of floodplains, and to restore and preserve the natural and beneficial values served by floodplains. Executive Order 11988 also directs agencies to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains through evaluating the potential effects of any actions the agency may take in a floodplain and ensuring that its program

planning and budget requests reflect consideration of flood hazards and floodplain management. DOT Order 5650.2 sets forth DOT policies and procedures for implementing Executive Order 11988. The DOT Order requires that the agency determine if a proposed action is within the limits of a base floodplain, meaning it is encroaching on the floodplain, and whether this encroachment is significant. If significant, the agency is required to conduct further analysis of the proposed action and any practicable alternatives. If a practicable alternative avoids floodplain encroachment, then the agency is required to implement it.

In this proposal, the agencies are not occupying, modifying and/or encroaching on floodplains. The agencies, therefore, conclude that the Orders are not applicable to this action. NHTSA has, however, conducted a review of the alternatives on potentially affected resources, including floodplains, in its Draft EIS.

8. Preservation of the Nation’s Wetlands (Executive Order 11990 and DOT Order 5660.1a)

These Orders require Federal agencies to avoid, to the extent possible, undertaking or providing assistance for new construction located in wetlands unless the agency head finds that there is no practicable alternative to such construction and that the proposed action includes all practicable measures to minimize harms to wetlands that may result from such use. Executive Order 11990 also directs agencies to take action to minimize the destruction, loss or degradation of wetlands in “conducting Federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.” DOT Order 5660.1a sets forth DOT policy for interpreting Executive Order 11990 and requires that transportation projects “located in or having an impact on wetlands” should be conducted to assure protection of the Nation’s wetlands. If a project does have a significant impact on wetlands, an EIS must be prepared.

The agencies are not undertaking or providing assistance for new construction located in wetlands. The agencies, therefore, conclude that these Orders do not apply to this proposal. NHTSA has, however, conducted a review of the alternatives on potentially affected resources, including wetlands, in its Draft EIS.

9. Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act (BGEPA), Executive Order 13186

The MBTA (16 U.S.C. 703–712) provides for the protection of certain migratory birds by making it illegal for anyone to “pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export” any migratory bird covered under the statute.⁹³⁹

The BGEPA (16 U.S.C. 668–668d) makes it illegal to “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import” any bald or golden eagles.⁹⁴⁰ Executive Order 13186, “Responsibilities of Federal Agencies to Protect Migratory Birds,” helps to further the purposes of the MBTA by requiring a Federal agency to develop a Memorandum of Understanding (MOU) with the Fish and Wildlife Service when it is taking an action that has (or is likely to have) a measurable negative impact on migratory bird populations.

The agencies conclude that the MBTA, BGEPA, and Executive Order 13186 do not apply to this proposal because there is no disturbance, take, measurable negative impact, or other covered activity involving migratory birds or bald or golden eagles involved in this rulemaking.

10. Department of Transportation Act (Section 4(f))

Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 303), as amended, is designed to preserve publicly owned park and recreation lands, waterfowl and wildlife refuges, and historic sites. Specifically, Section 4(f) provides that DOT agencies cannot approve a transportation program or project that requires the use of any publicly owned land from a public park, recreation area, or wildlife or waterfowl refuge of national, State, or local significance, or any land from a historic site of national, State, or local significance, unless a determination is made that:

- (1) There is no feasible and prudent alternative to the use of land, and
- (2) The program or project includes all possible planning to minimize harm to the property resulting from the use.

These requirements may be satisfied if the transportation use of a Section 4(f) property results in a de minimis impact on the area.

NHTSA concludes that Section 4(f) is not applicable to its proposal because this rulemaking is not an approval of a transportation program or project that requires the use of any publicly owned land.

11. Executive Order 12898: “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”

Executive Order (E.O.) 12898 (59 FR 7629 (Feb. 16, 1994)) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

With respect to GHG emissions, EPA has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it impacts the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any population, including any minority or low-income population. The increases in CO₂ and other GHGs associated with the standards will affect climate change projections, and EPA has estimated marginal increases in projected global mean surface temperatures and sea-level rise in this NPRM. Within settlements experiencing climate change, certain parts of the population may be especially vulnerable; these include the poor, the elderly, those already in poor health, the disabled, those living alone, and/or indigenous populations dependent on one or a few resources. However, the potential increases in climate change impacts resulting from this rule are so small that the impacts are not considered “disproportionately high and adverse” on these populations.

For non-GHG co-pollutants such as ozone, PM_{2.5}, and toxics, EPA has concluded that reductions in downstream emissions would have beneficial human health or environmental effects on near-road populations. Therefore, the proposed rule would not result in “disproportionately high and adverse”

⁹³⁹ 16 U.S.C. 703(a).

⁹⁴⁰ 16 U.S.C. 668(a).

human health or environmental effects regarding these pollutants on minority and/or low income populations.

NHTSA has also evaluated whether its proposal would have disproportionately high and adverse human health or environmental effects on minority or low-income populations. The agency includes its analysis in Section 7.5 (*Environmental Justice*) of its Draft EIS.

12. Executive Order 13045: “Protection of Children from Environmental Health Risks and Safety Risks”

This action is subject to E.O. 13045 (62 FR 19885, April 23, 1997) because it is an economically significant regulatory action as defined by E.O. 12866, and the agencies have reason to believe that the environmental health or safety risks related to this action may have a disproportionate effect on children. Specifically, children are more vulnerable to adverse health effects related to mobile source emissions, as well as to the potential long-term impacts of climate change. Pursuant to E.O. 13045, NHTSA and EPA must prepare an evaluation of the environmental health or safety effects of the planned regulation on children and an explanation of why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the agencies. Further, this analysis may be included as part of any other required analysis.

This preamble and NHTSA’s Draft EIS discuss air quality, climate change, and their related environmental and health effects, noting where these would disproportionately affect children. The Administrator has also discussed the impact of climate-related health effects on children in the Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act (74 FR 66496, December 15, 2009). Additionally, this preamble explains why the agencies’ proposal is preferable to other alternatives considered. Together, this preamble and NHTSA’s Draft EIS satisfy the agencies’ responsibilities under E.O. 13045.

F. Regulatory Flexibility Act

Pursuant to the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*, as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996), whenever an agency is required to publish a notice of proposed rulemaking or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effect of the rule on small entities (*i.e.*, small businesses, small organizations, and small governmental jurisdictions). No regulatory flexibility analysis is required if the head of an agency certifies the proposal will not have a significant economic impact on a substantial number of small entities. SBREFA amended the Regulatory

Flexibility Act to require Federal agencies to provide a statement of the factual basis for certifying that a proposal will not have a significant economic impact on a substantial number of small entities.

The agencies considered the impacts of this notice under the Regulatory Flexibility Act and certify that this rule would not have a significant economic impact on a substantial number of small entities. The following is the agencies’ statement providing the factual basis for this certification pursuant to 5 U.S.C. 605(b).

Small businesses are defined based on the North American Industry Classification System (NAICS) code.⁹⁴¹ One of the criteria for determining size is the number of employees in the firm. For establishments primarily engaged in manufacturing or assembling automobiles, as well as light duty trucks, the firm must have less than 1,500 employees to be classified as a small business. This proposed rule would affect motor vehicle manufacturers. There are 14 small manufacturers of passenger cars and SUVs of electric, hybrid, and internal combustion engines.

⁹⁴¹ Classified in NAICS under Subsector 336—Transportation Equipment Manufacturing for Automobile Manufacturing (336111), Light Truck (336112), and Heavy Duty Truck Manufacturing (336120). <https://www.sba.gov/document/support-table-size-standards>.

Table XII-1 - Small Domestic Vehicle Manufacturers

Manufacturers	Founded	Employees ⁹⁴²	Estimated Annual Production ⁹⁴³	Sale Price per Unit
Karma Automotive	2014	625	900	\$130,000
BXR Motors	2008	< 10	< 100	\$155,000 to \$185,000
Falcon Motorsports	2009	5	< 100	\$300,000 to \$400,000
Lucra Cars	2005	8	< 100	\$100,000
Lyons Motor Car	2012	< 10	< 100	\$1,400,000
Rezvani Motors	2014	6	< 100	\$95,000 to \$270,000
Rossion Automotive	2007	6	< 100	\$90,000
Saleen	1984	51	< 100	\$100,000
Shelby American	1962	61	< 100	\$60,000 to \$250,000
Panoz	1988	20	< 100	\$155,000 to \$175,000
Faraday Future	2014	790	0	\$200,000 to \$300,000
Lucid Motor Car	2007	269	0	\$60,000
Rivian Automotive	2009	208	0	N/A
SF Motors	2016	204	0	N/A

NHTSA believes that the rulemaking would not have a significant economic impact on the small vehicle manufacturers because under 49 CFR part 525, passenger car manufacturers making less than 10,000 vehicles per year can petition NHTSA to have alternative standards set for those manufacturers. These manufacturers do not currently meet the 27.5 mpg standard and must already petition the agency for relief. If the standard is raised, it has no meaningful impact on these manufacturers—they still must go through the same process and petition for relief. Given there already is a mechanism for relieving burden on small businesses, which is the purpose of the Regulatory Flexibility Act, a regulatory flexibility analysis was not prepared.

EPA believes this rulemaking would not have a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act, as amended by the Small Business Regulatory Enforcement Fairness Act. EPA is exempting from the CO₂ standards any manufacturer, domestic or foreign, meeting SBA’s size definitions of small business as described in 13 CFR 121.201. EPA adopted the same type of exemption for

small businesses in the 2017 and later rulemaking. EPA estimates that small entities comprise less than 0.1% of total annual vehicle sales and exempting them will have a negligible impact on the CO₂ emissions reductions from the standards. Because EPA is exempting small businesses from the CO₂ standards, we are certifying that the rule will not have a significant economic impact on a substantial number of small entities. Therefore, EPA has not conducted a Regulatory Flexibility Analysis or a SBREFA SBAR Panel for the rule.

EPA regulations allow small businesses to voluntarily waive their small business exemption and optionally certify to the CO₂ standards. This allows small entity manufacturers to earn CO₂ credits under the CO₂ program, if their actual fleetwide CO₂ performance is better than their fleetwide CO₂ target standard. However, the exemption waiver is optional for small entities and thus we believe that manufacturers opt into the CO₂ program if it is economically advantageous for them to do so, for example in order to generate and sell CO₂ credits. Therefore, EPA believes this voluntary option does not affect EPA’s determination that the standards will impose no significant adverse impact on small entities.

G. Executive Order 13132 (Federalism)

Executive Order 13132 requires federal agencies to develop an accountable process to ensure “meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.” The Order defines the term “Policies that have federalism implications” to include regulations that have “substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.” Under the Order, agencies may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or the agencies consult with State and local officials early in the process of developing the proposed regulation. The agencies complied with Order’s requirements.

See Section VI above for further detail on the agencies’ assessment of the federalism implications of this proposal.

⁹⁴² Number of employees as of March 2018, source: *LinkedIn.com*.

⁹⁴³ Rough estimate for model year 2017.

H. Executive Order 12988 (Civil Justice Reform)

Pursuant to Executive Order 12988, “Civil Justice Reform,”⁹⁴⁴ NHTSA has considered whether this rulemaking would have any retroactive effect. This proposed rule does not have any retroactive effect.

I. Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments)

This proposed rule does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). This rule will be implemented at the Federal level and impose compliance costs only on vehicle manufacturers. Thus, Executive Order 13175 does not apply to this rule.

J. Unfunded Mandates Reform Act

Section 202 of the Unfunded Mandates Reform Act of 1995 (UMRA) requires Federal agencies to prepare a written assessment of the costs, benefits, and other effects of a proposed or final rule that includes a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of more than \$100 million in any one year (adjusted for inflation with base year of 1995). Adjusting this amount by the implicit gross domestic product price deflator for 2016 results in \$148 million ($111.416/75.324 = 1.48$).⁹⁴⁵ Before promulgating a rule for which a written statement is needed, section 205 of UMRA generally requires NHTSA and EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objective of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows NHTSA and EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the agency publishes with the proposed rule an explanation of why that alternative was not adopted.

This proposed rule will not result in the expenditure by State, local, or tribal governments, in the aggregate, of more than \$148 million annually, but it will result in the expenditure of that magnitude by vehicle manufacturers and/or their suppliers. In developing this proposal, NHTSA and EPA considered a variety of alternative

average fuel economy standards lower and higher than those proposed. The proposed fuel economy standards for MYs 2021–2026 are the least costly, most cost-effective, and least burdensome alternative that achieve the objective of the rule.

K. Regulation Identifier Number

The Department of Transportation assigns a regulation identifier number (RIN) to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. You may use the RIN contained in the heading at the beginning of this document to find this action in the Unified Agenda.

L. National Technology Transfer and Advancement Act

Section 12(d) of the National Technology Transfer and Advancement Act (NTTAA) requires NHTSA and EPA to evaluate and use existing voluntary consensus standards in its regulatory activities unless doing so would be inconsistent with applicable law (e.g., the statutory provisions regarding NHTSA’s vehicle safety authority, or EPA’s testing authority) or otherwise impractical.⁹⁴⁶

Voluntary consensus standards are technical standards developed or adopted by voluntary consensus standards bodies. Technical standards are defined by the NTTAA as “performance-based or design-specific technical specification and related management systems practices.” They pertain to “products and processes, such as size, strength, or technical performance of a product, process or material.”

Examples of organizations generally regarded as voluntary consensus standards bodies include the American Society for Testing and Materials (ASTM), the Society of Automotive Engineers (SAE), and the American National Standards Institute (ANSI). If the agencies do not use available and potentially applicable voluntary consensus standards, we are required by the Act to provide Congress, through OMB, an explanation of the reasons for not using such standards.

For CO₂ emissions, EPA is proposing to collect data over the same tests that are used for the MY 2012–2016 CO₂ standards and for the CAFE program. This will minimize the amount of testing done by manufacturers, since manufacturers are already required to run these tests. For A/C credits, EPA is

proposing to use a consensus methodology developed by the Society of Automotive Engineers (SAE) and also a new A/C test. EPA knows of no consensus standard available for the A/C test.

There are currently no voluntary consensus standards that NHTSA administers relevant to today’s proposed CAFE standards.

M. Department of Energy Review

In accordance with 49 U.S.C. 32902(j)(1), NHTSA submitted this proposed rule to the Department of Energy for review.

N. Paperwork Reduction Act

The Paperwork Reduction Act (PRA) of 1995, Public Law 104–13,⁹⁴⁷ gives the Office of Management and Budget (OMB) authority to regulate matters regarding the collection, management, storage, and dissemination of certain information by and for the Federal government. It seeks to reduce the total amount of paperwork handled by the government and the public. The PRA requires Federal agencies to place a notice in the **Federal Register** seeking public comment on the proposed collection of information. NHTSA strives to reduce the public’s information collection burden hours each fiscal year by streamlining external and internal processes.

To this end, NHTSA seeks to continue to collect information to ensure compliance with its CAFE program. NHTSA intends to reinstate its previously-approved collection of information for Corporate Average Fuel Economy (CAFE) reports specified in 49 CFR part 537 (OMB control number 2127–0019), add the additional burden for reporting changes adopted in the October 15, 2012 final rule that recently came into effect (see 77 FR 62623), and account for the change in burden as proposed in this rule as well as for other CAFE reporting provisions required by Congress and NHTSA. NHTSA is also changing the name of this collection to more accurately represent the breadth of all CAFE regulatory reporting. Although NHTSA seeks to add additional burden hours to its CAFE report requirement in 49 CFR 537, the agency believes there will be a reduction in burden due to the standardization of data and the streamlined process. NHTSA is seeking public comment on this collection.

In compliance with the PRA, this notice announces that the information collection request (ICR) abstracted below has been forwarded to OMB for review and comment. The ICR describes

⁹⁴⁴ 61 FR 4729 (Feb. 7, 1996).

⁹⁴⁵ Bureau of Economic Analysis, National Income and Product Accounts (NIPA), Table 1.1.9 Implicit Price Deflators for Gross Domestic Product. https://bea.gov/iTable/index_nipa.cfm.

⁹⁴⁶ 15 U.S.C. 272.

⁹⁴⁷ Codified at 44 U.S.C. 3501 *et seq.*

the nature of the information collection and its expected burden.

Title: Corporate Average Fuel Economy.

Type of Request: Reinstatement and amendment of a previously approved collection.

OMB Control Number: 2127-0019.

Form Numbers: NHTSA Form 1474 (CAFE Projections Reporting Template) and NHTSA Form 1475 (CAFE Credit Template).

Requested Expiration Date of Approval: Three years from date of approval.

Summary of the collection of information: As part of this rulemaking, NHTSA is reinstating and modifying its previously-approved collection for CAFE-related collections of information. NHTSA and EPA have coordinated their compliance and reporting requirements in an effort not to impose duplicative burden on regulated entities. This information collection contains three different components: Burden related NHTSA's CAFE reporting requirements, burden related to CAFE compliance, but not via reporting requirements, and information gathered by NHTSA to help inform CAFE analyses. All templates referenced in this section will be available in the rulemaking docket for comment.

1. CAFE Compliance Reports

NHTSA seeks to reinstate⁹⁴⁸ its collection related to the reporting requirements in 49 U.S.C. 32907 "Reports and tests of manufacturers." In that section, manufacturers are statutorily required to submit CAFE compliance reports to the Secretary of Transportation.⁹⁴⁹ The reports must state if a manufacturer will comply with its applicable fuel economy standard(s), what actions the manufacturer intends to take to comply with the standard(s), and include other information as required by NHTSA. Manufacturers are required to submit two CAFE compliance reports—a pre-model year report (PMY) and mid-model year (MMY) reporter—each year. In the event a manufacturer needs to correct previously-submitted information, a manufacturer may need to file additional reports.⁹⁵⁰

⁹⁴⁸ This collection expired on April 30, 2016.
⁹⁴⁹ 49 U.S.C. 32907 (delegated to the NHTSA Administrator at 49 CFR 1.95). Because of this delegation, for purposes of discussion, statutory references to the Secretary of Transportation in this section will be discussed in terms of NHTSA or the NHTSA administrator.

⁹⁵⁰ Specifically, a manufacturer shall submit a report containing the information during the 30 days before the beginning of each model year, and during the 30 days beginning the 180th day of the model year. When a manufacturer decides that

To implement this statute, NHTSA issued 49 CFR part 537, "Automotive Fuel Economy Reports," which adds additional definition to § 32907. The first report, the PMY report must be submitted to NHTSA before December 31 of the calendar year prior to the corresponding model year and contain manufacturers' projected information for that upcoming model year. The second report, the MMY report must be submitted by July 31 of the given model year and contain updated information from manufacturers based upon actual and projected information known midway through the model year. Finally, the last report, a supplementary report, is required to be submitted anytime a manufacture needs to correct information previously submitted to NHTSA.

Compliance reports must include information on passenger and non-passenger automobiles (trucks) describing the projected and actual fuel economy standards, fuel economy performance values, production sales volumes and information on vehicle design features (e.g., engine displacement and transmission class) and other vehicle attribute characteristics (e.g., track width, wheel base and other light truck off-road features). Manufacturers submit confidential and non-confidential versions of these reports to NHTSA. Confidential reports differ by including estimated or actual production sales information, which is withheld from public disclosure to protect each manufacturer's competitive sales strategies. NHTSA uses the reports as the basis for vehicle auditing and testing, which helps manufacturers correct reporting errors prior to the end of the model year and facilitate acceptance of their final CAFE report by the Environmental Protection Agency (EPA). The reports also help the agency, as well as the manufacturers who prepare them, anticipate potential compliance issues as early as possible, and help manufacturers plan their compliance strategies.

Further, NHTSA is modifying this collection to account for additional information manufacturers are required to include in their reports. In the 2017 and beyond final rule,⁹⁵¹ NHTSA allowed for manufacturers to gain additional fuel economy benefits by installing certain technologies on their

actions reported are not sufficient to ensure compliance with that standard, the manufacturer shall report additional actions it intends to take to comply with the standard and include a statement about whether those actions are sufficient to ensure compliance.

⁹⁵¹ 77 FR 62623 (Oct. 15, 2012).

vehicles beginning with MY 2017.⁹⁵² These technologies include air-conditioning systems with increased efficiency, off-cycle technologies whose benefits are not adequately captured on the Federal Test Procedure and/or the Highway Fuel Economy Test,⁹⁵³ and hybrid electric technologies installed on full-size pickup trucks. Prior to MY 2017, manufacturers were unable to earn a fuel economy benefit for these technologies, so NHTSA's reporting requirements did not include an opportunity to report them. Now, manufacturers must provide information on these technologies in their CAFE reports. NHTSA requires manufacturers to provide detailed information on the model types using these technologies to gain fuel economy benefits. These details are necessary to facilitate NHTSA's technical analyses and to ensure the agency can perform random enforcement audits when necessary.

In addition to a list of all fuel consumption improvement technologies utilized in their fleet, 49 CFR 537 requires manufacturers to report the make, model type, compliance category, and production volume of each vehicle equipped with each technology and the associated fuel consumption improvement value (FCIV). NHTSA is proposing to add the reporting and enforcement burden hours and cost for these new incentives to this collection. Manufacturers can also petition the EPA and NHTSA, in accordance with 40 CFR 86.1868-12 or 40 CFR 86.1869-12, to gain additional credits based upon the improved performance of any of the new incentivized technologies allowed for model year 2017. EPA approves these petitions in collaboration with NHTSA and any adjustments are taken into account for both programs. As a part of the agencies' coordination, NHTSA provides EPA with an evaluation of each new technology to ensure its direct impact on fuel economy and an assessment on the suitability of each technology for use in increasing a manufacturer's fuel economy performance. Furthermore, at times, NHTSA may independently request additional information from a manufacturer to support its evaluations. This information along with any research conclusions shared with EPA and NHTSA in the petitions is required to be submitted in manufacturer's CAFE reports.

⁹⁵² These technologies were not included in the burden for part 537 at the time as the additional reporting requirements would not take effect until years later.

⁹⁵³ E.g., engine idle stop-start systems, active transmission warmup systems, etc.

NHTSA is seeking to change the burden hours for its CAFE reporting requirements in 49 CFR part 537. NHTSA plans to reduce the total amount of time spent collecting the required reporting information by standardizing the required data and streamlining the collection process using a standardized reporting template. The standardized template will be used by manufacturers to collect all the required CAFE information under 49 CFR 537.7(b) and (c) and provides a format which ensures accuracy, completeness and better alignment with the final data provided to EPA.

2. Other CAFE Compliance Collections

NHTSA is proposing a new standardized template for manufacturers buying CAFE credits and for manufacturers submitting credit transactions in accordance with 49 CFR part 536. In 49 CFR part 536.5(d), NHTSA is required to assess compliance with fuel economy standards each year, utilizing the certified and reported CAFE data provided by the Environmental Protection Agency for enforcement of the CAFE program pursuant to 49 U.S.C. 32904(e). Credit values are calculated based on the CAFE data from the EPA. If a manufacturer's vehicles in a particular compliance category performs better than its required fuel economy standard, NHTSA adds credits to the manufacturer's account for that compliance category. If a manufacturer's vehicles in a particular compliance category performs worse than the required fuel economy standard, NHTSA will add a credit deficit to the manufacturer's account and will provide written notification to the manufacturer concerning its failure to comply. The manufacturer will be required to confirm the shortfall and must either: Submit a plan indicating how it will allocate existing credits or earn, transfer and/or acquire credits or pay the equivalent civil penalty. The manufacturer must submit a plan or payment within 60 days of receiving notification from NHTSA.

NHTSA is proposing for manufacturers to use the credit transaction template any time a credit transaction request is sent to NHTSA. For example, manufacturers that purchase credits and want to apply them to their credit accounts will use

the credit transaction template. The template NHTSA is proposing is a simple spreadsheet that trading parties fill out. When completed, parties will be able to click a button on the spreadsheet to generate a joint transaction letter for the parties to sign and submit to NHTSA, along with the spreadsheet. NHTSA believes these changes will significantly reduce the burden on manufacturers in managing their CAFE credit accounts.

Finally, NHTSA is accounting for the additional burden due to existing CAFE program elements. In 49 CFR part 525, small volume manufacturers submit petitions to NHTSA for exemption from an applicable average fuel economy standard and to request to comply with a less stringent alternative average fuel economy standard. In 49 CFR part 534, manufacturers are required to submit information to NHTSA when establishing a corporate controlled relationship with another manufacturer. A controlled relationship exists between manufacturers that control, are controlled by, or are under common control with, one or more other manufacturers. Accordingly, manufacturers that have entered into written contracts transferring rights and responsibilities to other manufacturers in controlled relationships for CAFE purposes are required to provide reports to NHTSA. There are additional reporting requirements for manufacturers submitting carry back plans and when manufacturers split apart from controlled relationships and must designate how credits are to be allocated between the parties.⁹⁵⁴ Manufacturers with credit deficits at the end of the model year, can carry back future earned credits up to three model years in advance of the deficit to resolve a current shortfall. The carryback plan proving the existence of a manufacturers future earned credits must be submitted and approved by NHTSA, pursuant to 49 U.S.C. 32903(b).

3. Analysis Fleet Composition

As discussed in Section II., in setting CAFE standards, NHTSA creates an analysis fleet from which to model potential future economy improvements. To compose this fleet, the agency uses a mixture of compliance data and information from other sources to best replicate the fleet from a recent model year. While refining the analysis

fleet, NHTSA occasionally asks manufacturers for information that is similar to information submitted as part of EPA's final model year report (e.g., final model year vehicle volumes). Periodically, NHTSA may ask manufacturers for more detailed information than what is required for compliance (e.g., what engines are shared across vehicle models). Often, NHTSA requests this information from manufacturers after manufacturers have submitted their final model year reports to EPA, but before EPA processes and releases final model year reports.

Information like this, which is used to verify and supplement the data used to create the analysis fleet, is tremendously valuable to generating an accurate analysis fleet, and setting maximum feasible standards. The more accurate the analysis fleet is, the more accurate the modeling of what technologies could be applied will be. Therefore, NHTSA is accounting for the burden on manufacturers to provide the agency with this additional information. In almost all instances, manufacturers already have the information NHTSA seeks, but it might need to be reformatted or recompiled. Because of this, NHTSA believes the burden to provide this information will often be minimal.

Affected Public: Respondents are manufacturers of engines and vehicles within the North American Industry Classification System (NAICS) and use the coding structure as defined by NAICS including codes 33611, 336111, 336112, 33631, 336311, 33632, 336320, 33635, and 336350 for motor vehicle and parts manufacturing.

Respondent's obligation to respond: Regulated entities required to respond to inquiries covered by this collection. 49 U.S.C. 32907. 49 CFR part 525, 534, 536, and 537.

Frequency of response: Variable, based on compliance obligation. Please see PRA supporting documentation in the docket for more detailed information.

Average burden time per response: Variable, based on compliance obligation. Please see PRA supporting documentation in the docket for more detailed information.

Number of respondents: 23.

4. Estimated Total Annual Burden Hours and Costs

⁹⁵⁴ See 49 CFR part 536.

Table XII-2 - Estimated Burden for Reporting Requirements

	Manufacturers		Government	
	Hours	Cost	Hours	Cost
Prior Collection	3,189.00	\$24,573.50	975.00	\$31,529.00
Current Collection	5,337.50	\$266,326.83	3,038.00	\$141,246.78
Difference	2,148.50	\$241,753.33	2,023.00	\$109,717.78

O. Privacy Act

In accordance with 5 U.S.C. 553(c), the agencies solicit comments from the public to better inform the rulemaking process. These comments are posted, without edit, to *www.regulations.gov*, as described in DOT's system of records notice, DOT/ALL-14 FDMS, accessible through *www.transportation.gov/privacy*. In order to facilitate comment tracking and response, we encourage commenters to provide their name, or the name of their organization; however, submission of names is completely optional.

List of Subjects

49 CFR Parts 523, 531, and 533

Fuel economy.

49 CFR Parts 536 and 537

Fuel economy, Reporting and recordkeeping requirements.

Regulatory Text

In consideration of the foregoing, under the authority of 49 U.S.C. 32901, 32902, and 32903, and delegation of authority at 49 CFR 1.95, NHTSA proposes to amend 49 CFR Chapter V as follows:

PART 523—VEHICLE CLASSIFICATION

- 1. The authority citation for part 523 continues to read as follows:

Authority: 49 U.S.C 32901, delegation of authority at 49 CFR 1.95.

- 2. Amend § 523.2 by revising the definitions of “Curb weight” and “Full-size pickup truck” to read as follows:

§ 523.2 Definitions.

* * * * *

Curb weight has the meaning given in 40 CFR 86.1803.

* * * * *

Full-size pickup truck means a light truck or medium duty passenger vehicle that meets the requirements specified in 40 CFR 86.1803.

* * * * *

PART 531—PASSENGER AUTOMOBILE AVERAGE FUEL ECONOMY STANDARDS

- 3. The authority citation for part 531 continues to read as follows:

Authority: 49 U.S.C. 32902; delegation of authority at 49 CFR 1.95.

- 4. Amend § 531.5 by revising Table III to paragraph (c), and paragraph (d), deleting paragraph (e), and redesignating paragraph (f) as paragraph (e) to read as follows:

§ 531.5 Fuel economy standards.

* * * * *

(c) * * *

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**Table III – Parameters for the Passenger Automobile Fuel Economy Targets, MYs
 2012-2026**

Model year	Parameters			
	<i>a</i> (mpg)	<i>b</i> (mpg)	<i>c</i> (gal/mi/ft ²)	<i>d</i> (gal/mi)
2012.....	35.95	27.95	0.0005308	0.006057
2013.....	36.80	28.46	0.0005308	0.005410
2014.....	37.75	29.03	0.0005308	0.004725
2015.....	39.24	29.90	0.0005308	0.003719
2016.....	41.09	30.96	0.0005308	0.002573

Model year	Parameters			
	<i>a</i> (mpg)	<i>b</i> (mpg)	<i>c</i> (gal/mi/ft ²)	<i>d</i> (gal/mi)
2017.....	43.61	32.65	0.0005131	0.001896
2018.....	45.21	33.84	0.0004954	0.001811
2019.....	46.87	35.07	0.0004783	0.001729
2020.....	48.74	36.47	0.0004603	0.001643
2021.....	48.74	36.47	0.0004603	0.001643

Model year	Parameters			
	<i>a</i> (mpg)	<i>b</i> (mpg)	<i>c</i> (gal/mi/ft ²)	<i>d</i> (gal/mi)
2022.....	48.74	36.47	0.0004603	0.001643
2023.....	48.74	36.47	0.0004603	0.001643
2024.....	48.74	36.47	0.0004603	0.001643
2025.....	48.74	36.47	0.0004603	0.001643
2026.....	48.74	36.47	0.0004603	0.001643

(d) In addition to the requirements of paragraphs (b) and (c) of this section, each manufacturer shall also meet the minimum fleet standard for domestically manufactured passenger automobiles expressed in Table IV:

Table IV – Minimum Fuel Economy Standards for Domestically Manufactured Passenger Automobiles, MYs 2011-2026

Model year	Minimum standard
2011.....	27.8
2012.....	30.7
2013.....	31.4
2014.....	32.1
2015.....	33.3
2016.....	34.7
2017.....	36.8
2018.....	38.0
2019.....	39.4
2020.....	40.9

Model year	Minimum standard
2021.....	40.2
2022.....	40.2
2023.....	40.2
2024.....	40.2
2025.....	40.2
2026.....	40.2

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* * * * *

■ 5. Amend § 531.6 by revising paragraphs (a) and (b) to read as follows:

§ 531.6 Measurement and calculation procedures.

(a) The fleet average fuel economy performance of all passenger automobiles that are manufactured by a manufacturer in a model year shall be determined in accordance with procedures established by the Administrator of the Environmental Protection Agency under 49 U.S.C. 32904 and set forth in 40 CFR part 600. For model years 2017 to 2026, a manufacturer is eligible to increase the fuel economy performance of passenger cars in accordance with procedures established by EPA set forth in 40 CFR 600, Subpart F, including any adjustments to fuel economy EPA allows, such as for fuel consumption improvements related to air conditioning efficiency and off-cycle technologies.

(1) A manufacturer that seeks to increase its fleet average fuel economy performance through the use of technologies that improve the efficiency of air conditioning systems must follow the requirements in 40 CFR 86.1868-12. Fuel consumption improvement values

resulting from the use of those air conditioning systems must be determined in accordance with 40 CFR 600.510-12(c)(3)(i).

(2) A manufacturer that seeks to increase its fleet average fuel economy performance through the use of off-cycle technologies must follow the requirements in 40 CFR 86.1869-12. A manufacturer is eligible to gain fuel consumption improvements for predefined off-cycle technologies in accordance with 40 CFR 86.1869-12(b) or for technologies tested using EPA's 5-cycle methodology in accordance with 40 CFR 86.1869-12(c). The fuel consumption improvement is determined in accordance with 40 CFR 600.510-12(c)(3)(ii).

(b) A manufacturer is eligible to increase its fuel economy performance through use of an off-cycle technology requiring an application request made to EPA in accordance with 40 CFR 86.1869-12(d). The request must be approved by EPA in consultation with NHTSA. To expedite NHTSA's consultation with EPA, a manufacturer shall concurrently submit its application to NHTSA if the manufacturer is seeking off-cycle fuel economy improvement values under the CAFE program for those technologies.

For off-cycle technologies that are covered under 40 CFR 86.1869-12(d), NHTSA will consult with EPA regarding NHTSA's evaluation of the specific off-cycle technology to ensure its impact on fuel economy and the suitability of using the off-cycle technology to adjust the fuel economy performance. NHTSA will provide its views on the suitability of the technology for that purpose to EPA. NHTSA's evaluation and review will consider:

(1) Whether the technology has a direct impact upon improving fuel economy performance;

(2) Whether the technology is related to crash-avoidance technologies, safety critical systems or systems affecting safety-critical functions, or technologies designed for the purpose of reducing the frequency of vehicle crashes;

(3) Information from any assessments conducted by EPA related to the application, the technology and/or related technologies; and

(4) Any other relevant factors.

* * * * *

■ 6. Add § 531.7 to read as follows:

§ 531.7 Preemption.

(a) *General.* When an average fuel economy standard prescribed under this chapter is in effect, a State or a political subdivision of a State may not adopt or

enforce a law or regulation related to fuel economy standards or average fuel economy standards for automobiles covered by an average fuel economy standard under this chapter.

(b) *Requirements Must Be Identical.* When a requirement under section 32908 of this title is in effect, a State or a political subdivision of a State may adopt or enforce a law or regulation on disclosure of fuel economy or fuel operating costs for an automobile covered by section 32908 only if the law or regulation is identical to that requirement.

(c) *State and Political Subdivision Automobiles.* A State or a political subdivision of a State may prescribe requirements for fuel economy for automobiles obtained for its own use.

■ 7. Redesignate Appendix to Part 531—Example of Calculating Compliance under § 531.5(c) as Appendix A to Part 531—Example of Calculating Compliance under § 531.5(c) and amend newly redesignated Appendix A by removing all all references to “Appendix” and adding in their place, “Appendix A.”

■ 8. Add Appendix B to Part 531 to read as follows:

Appendix B to Part 531—Preemption

(a) Express Preemption:
(1) To the extent that any state law or regulation regulates or prohibits tailpipe carbon dioxide emissions from automobiles,

such a law or regulation relates to average fuel economy standards within the meaning of 49 U.S.C. 32919.

(A) Automobile fuel economy is directly and substantially related to automobile tailpipe emissions of carbon dioxide;
(B) Carbon dioxide is the natural by-product of automobile fuel consumption;
(C) The most significant and controlling factor in making the measurements necessary to determine the compliance of automobiles with the fuel economy standards in this Part is their rate of tailpipe carbon dioxide emissions;

(D) Almost all technologically feasible reduction of tailpipe emissions of carbon dioxide is achievable through improving fuel economy, thereby reducing both the consumption of fuel and the creation and emission of carbon dioxide;

(E) Accordingly, as a practical matter, regulating fuel economy controls the amount of tailpipe emissions of carbon dioxide, and regulating the tailpipe emissions of carbon dioxide controls fuel economy.

(2) As a state law or regulation related to fuel economy standards, any state law or regulation regulating or prohibiting tailpipe carbon dioxide emissions from automobiles is expressly preempted under 49 U.S.C. 32919.

(3) A state law or regulation having the direct effect of regulating or prohibiting tailpipe carbon dioxide emissions or fuel economy is a law or regulation related to fuel economy and expressly preempted under 49 U.S.C. 32919.

(b) Implied Preemption:
(1) A state law or regulation regulating tailpipe carbon dioxide emissions from automobiles, particularly a law or regulation

that is not attribute-based and does not separately regulate passenger cars and light trucks, conflicts with:

(A) The fuel economy standards in this Part;
(B) The judgments made by the agency in establishing those standards; and
(C) The achievement of the objectives of the statute (49 U.S.C. Chapter 329) under which those standards were established, including objectives relating to reducing fuel consumption in a manner and to the extent consistent with manufacturer flexibility, consumer choice, and automobile safety.

(2) Any state law or regulation regulating or prohibiting tailpipe carbon dioxide emissions from automobiles is impliedly preempted under 49 U.S.C. Chapter 329.

(3) A state law or regulation having the direct effect of regulating or prohibiting tailpipe carbon dioxide emissions or fuel economy is impliedly preempted under 49 U.S.C. Chapter 329.

PART 533—LIGHT TRUCK FUEL ECONOMY STANDARDS

■ 9. The authority citation for part 533 continues to read as follows:

Authority: 49 U.S.C. 32902; delegation of authority at 49 CFR 1.95.

■ 10. Amend § 533.5 by revising Table VII to paragraph (a) to read as follows and removing paragraph (k).

§ 533.5 Requirements.

(a) * * *

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Table VII – Parameters for the Light Truck Fuel Economy Targets for MYs 2017-2026

Model year	Parameters							
	<i>a</i> (mpg)	<i>b</i> (mpg)	<i>c</i> (gal/mi/f t ²)	<i>d</i> (gal/mi)	<i>e</i> (mpg)	<i>F</i> (mpg)	<i>g</i> (gal/mi/f t ²)	<i>h</i> (gal/mi)
2017	36.26	25.09	0.00054 84	0.00509 7	35.10	25.09	0.00045 46	0.009851
2018	37.36	25.20	0.00053 58	0.00479 7	35.31	25.20	0.00045 46	0.009682
2019	38.16	25.25	0.00052 65	0.00462 3	35.41	25.25	0.00045 46	0.009603
2020	39.11	25.25	0.00051 40	0.00449 4	35.41	25.25	0.00045 46	0.009603
2021	39.11	25.25	0.00051 40	0.00449 4	35.41	25.25	0.00045 46	0.009603
2022	39.11	25.25	0.00051	0.00449	35.41	25.25	0.00045	0.009603

			40	4			46	
2023	39.11	25.25	0.00051 40	0.00449 4	35.41	25.25	0.00045 46	0.009603
2024	39.11	25.25	0.00051 40	0.00449 4	35.41	25.25	0.00045 46	0.009603
2025	39.11	25.25	0.00051 40	0.00449 4	35.41	25.25	0.00045 46	0.009603
2026	39.11	25.25	0.00051 40	0.00449 4	35.41	25.25	0.00045 46	0.009603

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* * * * *

■ 11. Amend § 533.6 by revising paragraphs (b) and (c) as follows:

§ 533.6 Measurement and calculation procedures.

* * * * *

(b) The fleet average fuel economy performance of all light trucks that are manufactured by a manufacturer in a model year shall be determined in accordance with procedures established by the Administrator of the Environmental Protection Agency under 49 U.S.C. 32904 and set forth in 40 CFR part 600. For model years 2017 to 2026, a manufacturer is eligible to increase the fuel economy performance of light trucks in accordance with procedures established by EPA set forth in 40 CFR part 600, subpart F, including any adjustments to fuel economy EPA allows, such as for fuel consumption improvements related to air conditioning efficiency, off-cycle technologies, and hybridization and other performance-based technologies for full-size pickup trucks that meet the requirements specified in 40 CFR 86.1803.

(1) A manufacturer that seeks to increase its fleet average fuel economy

performance through the use of technologies that improve the efficiency of air conditioning systems must follow the requirements in 40 CFR 86.1868-12. Fuel consumption improvement values resulting from the use of those air conditioning systems must be determined in accordance with 40 CFR 600.510-12(c)(3)(i).

(2) A manufacturer that seeks to increase its fleet average fuel economy performance through the use of off-cycle technologies must follow the requirements in 40 CFR 86.1869-12. A manufacturer is eligible to gain fuel consumption improvements for predefined off-cycle technologies in accordance with 40 CFR 86.1869-12(b) or for technologies tested using the EPA's 5-cycle methodology in accordance with 40 CFR 86.1869-12(c). The fuel consumption improvement is determined in accordance with 40 CFR 600.510-12(c)(3)(ii).

(3) The eligibility of a manufacturer to increase its fuel economy using hybridized and other performance-based technologies for full-size pickup trucks must follow 40 CFR 86.1870-12 and the fuel consumption improvement of these full-size pickup truck technologies must

be determined in accordance with 40 CFR 600.510-12(c)(3)(iii).

(c) A manufacturer is eligible to increase its fuel economy performance through use of an off-cycle technology requiring an application request made to EPA in accordance with 40 CFR 86.1869-12(d). The request must be approved by EPA in consultation with NHTSA. To expedite NHTSA's consultation with EPA, a manufacturer shall concurrently submit its application to NHTSA if the manufacturer is seeking off-cycle fuel economy improvement values under the CAFE program for those technologies. For off-cycle technologies that are covered under 40 CFR 86.1869-12(d), NHTSA will consult with EPA regarding NHTSA's evaluation of the specific off-cycle technology to ensure its impact on fuel economy and the suitability of using the off-cycle technology to adjust the fuel economy performance. NHTSA will provide its views on the suitability of the technology for that purpose to EPA. NHTSA's evaluation and review will consider:

(1) Whether the technology has a direct impact upon improving fuel economy performance;

(2) Whether the technology is related to crash-avoidance technologies, safety critical systems or systems affecting safety-critical functions, or technologies designed for the purpose of reducing the frequency of vehicle crashes;

(3) Information from any assessments conducted by EPA related to the application, the technology and/or related technologies; and

(4) Any other relevant factors.

* * * * *

■ 12. Add § 533.7 to read as follows:

§ 533.7 Preemption.

(a) *General.* When an average fuel economy standard prescribed under this chapter is in effect, a State or a political subdivision of a State may not adopt or enforce a law or regulation related to fuel economy standards or average fuel economy standards for automobiles covered by an average fuel economy standard under this chapter.

(b) *Requirements Must Be Identical.* When a requirement under section 32908 of this title is in effect, a State or a political subdivision of a State may adopt or enforce a law or regulation on disclosure of fuel economy or fuel operating costs for an automobile covered by section 32908 only if the law or regulation is identical to that requirement.

(c) *State and Political Subdivision Automobiles.*—A State or a political subdivision of a State may prescribe requirements for fuel economy for automobiles obtained for its own use.

■ 13. Redesignate Appendix to Part 533—Example of Calculating Compliance under § 533.5(i) as Appendix A to Part 533—Example of Calculating Compliance under § 533.5(i) and amend newly redesignated Appendix A by removing all references to “Appendix” and adding in their place, “Appendix A”.

■ 14. Add Appendix B to Part 533 to read as follows:

Appendix B to Part 533—Preemption

(a) Express Preemption:

(1) To the extent that any state law or regulation regulates or prohibits tailpipe carbon dioxide emissions from automobiles, such a law or regulation relates to average fuel economy standards within the meaning of 49 U.S.C. 32919.

(A) Automobile fuel economy is directly and substantially related to automobile tailpipe emissions of carbon dioxide;

(B) Carbon dioxide is the natural by-product of automobile fuel consumption;

(C) The most significant and controlling factor in making the

measurements necessary to determine the compliance of automobiles with the fuel economy standards in this Part is their rate of tailpipe carbon dioxide emissions;

(D) Almost all technologically feasible reduction of tailpipe emissions of carbon dioxide is achievable through improving fuel economy, thereby reducing both the consumption of fuel and the creation and emission of carbon dioxide;

(E) Accordingly, as a practical matter, regulating fuel economy controls the amount of tailpipe emissions of carbon dioxide, and regulating the tailpipe emissions of carbon dioxide controls fuel economy.

(2) As a state law or regulation related to fuel economy standards, any state law or regulation regulating or prohibiting tailpipe carbon dioxide emissions from automobiles is expressly preempted under 49 U.S.C. 32919.

(3) A state law or regulation having the direct effect of regulating or prohibiting tailpipe carbon dioxide emissions or fuel economy is a law or regulation related to fuel economy and expressly preempted under 49 U.S.C. 32919.

(b) Implied Preemption:

(1) A state law or regulation regulating tailpipe carbon dioxide emissions from automobiles, particularly a law or regulation that is not attribute-based and does not separately regulate passenger cars and light trucks, conflicts with:

(A) The fuel economy standards in this Part;

(B) The judgments made by the agency in establishing those standards; and

(C) The achievement of the objectives of the statute (49 U.S.C. Chapter 329) under which those standards were established, including objectives relating to reducing fuel consumption in a manner and to the extent consistent with manufacturer flexibility, consumer choice, and automobile safety.

(2) Any state law or regulation regulating or prohibiting tailpipe carbon dioxide emissions from automobiles is impliedly preempted under 49 U.S.C. Chapter 329.

(3) A state law or regulation having the direct effect of regulating or prohibiting tailpipe carbon dioxide emissions or fuel economy is impliedly preempted under 49 U.S.C. Chapter 329.

PART 535—MEDIUM- AND HEAVY-DUTY VEHICLE FUEL EFFICIENCY PROGRAM

■ 15. The authority citation for part 535 continues to read as follows:

Authority: 49 U.S.C. 32902 and 30101; delegation of authority at 49 CFR 1.95.

■ 16. Amend § 535.6 by revising paragraph (a)(4)(ii) to read as follows:

* * * * *

(a) * * *

(4) * * *

(ii) Calculate the equivalent fuel consumption test group results as follows for spark-ignition vehicles and alternative fuel spark-ignition vehicles. CO₂ emissions test group result (grams per mile)/8,887 grams per gallon of gasoline fuel) × (10²) = Fuel consumption test group result (gallons per 100 mile).

* * * * *

■ 16. Amend § 535.6 by revising paragraphs (a)(4)(ii) and (d)(5)(ii) to read as follows:

* * * * *

(a) * * *

(4) * * *

(ii) Calculate the equivalent fuel consumption test group results as follows for spark-ignition vehicles and alternative fuel spark-ignition vehicles. CO₂ emissions test group result (grams per mile)/8,877 grams per gallon of gasoline fuel) × (10⁻²) = Fuel consumption test group result (gallons per 100 mile).

* * * * *

(d) * * *

(5) * * *

(ii) Calculate equivalent fuel consumption FCL values for spark-ignition engines and alternative fuel spark-ignition engines. CO₂ FCL value (grams per hp-hr)/8,887 grams per gallon of gasoline fuel) × (10⁻²) = Fuel consumption FCL value (gallons per 100 hp-hr).

* * * * *

■ 17. Amend § 535.7 by revising the equations in paragraphs (b)(1), (c)(1), (d)(1), (e)(2) and (f)(2)(iii)(E) to read as follows:

§ 535.7 Averaging, banking, and trading (ABT) credit program.

* * * * *

(b) * * *

(1) * * *

Total MY Fleet FCC (gallons) = (Std – Act) × (Volume) × (UL) × (10⁻²)

Where:

Std = Fleet average fuel consumption standard (gal/100 mile).

Act = Fleet average actual fuel consumption value (gal/100 mile).

Volume = the total U.S.-directed production of vehicles in the regulatory subcategory.

UL = the useful life for the regulatory subcategory. The useful life value for heavy-pickup trucks and vans manufactured for model years 2013 through 2020 is equal to the 120,000 miles. The useful life for model years 2021 and later is equal to 150,000 miles.

* * * * *

ENVIRONMENTAL PROTECTION AGENCY

[FRL-9768-1]

California State Motor Vehicle Pollution Control Standards; Notice of Decision Granting a Waiver of Clean Air Act Preemption for California's Advanced Clean Car Program and a Within the Scope Confirmation for California's Zero Emission Vehicle Amendments for 2017 and Earlier Model Years

SUMMARY: The Environmental Protection Agency (EPA) is granting the California Air Resources Board's (CARB's) request for a waiver of Clean Air Act preemption to enforce its Advanced Clean Car (ACC) regulations. The ACC combines the control of smog and soot causing pollutants and greenhouse gas (GHG) emissions into a single coordinated package of requirements for passenger cars, light-duty trucks and medium-duty passenger vehicles (and limited requirements related to heavy-duty vehicles). The ACC program includes revisions to California's Low Emission Vehicle (LEV) program as well as its Zero Emission Vehicle (ZEV) program. By today's decision, EPA has also determined that CARB's amendments to the ZEV program as they affect 2017 and prior model years (MYS) are within the scope of previous waivers of preemption granted to California for its ZEV regulations. In the alternative, EPA's waiver of preemption for CARB's ACC regulations includes a waiver of preemption for CARB's ZEV amendments as they affect all MYS, including 2017 and prior MYS. In addition, EPA is including CARB's recently adopted "deemed to comply" rule for GHG emissions in today's waiver decision. This decision is issued under section 209(b) of the Clean Air Act (the "Act"), as amended.

DATES: Petitions for review must be filed March 11, 2013.

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2012-0562. All documents and public comments in the docket are listed on the www.regulations.gov Web site. Publicly available docket materials are available either electronically through www.regulations.gov or in hard copy at the Air and Radiation Docket in the EPA Headquarters Library, EPA West Building, Room 3334, 1301 Constitution Ave. NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding holidays. The telephone number for the Reading Room is (202)

566-1744. The Air and Radiation Docket and Information Center's Web site is <http://www.epa.gov/oar/docket.html>. The electronic mail (email) address for the Air and Radiation Docket is: a-and-r-Docket@epa.gov, the telephone number is (202) 566-1742 and the fax number is (202) 566-9744.

FOR FURTHER INFORMATION CONTACT: Specific questions may be addressed to David Dickinson, Office of Transportation and Air Quality, Compliance Division (6405J-NLD), EPA, 1200 Pennsylvania Ave. NW., Washington, DC 20460, telephone: (202) 343-9256, email: Dickinson.David@epa.gov.

SUPPLEMENTARY INFORMATION:

Table of Contents

- I. Executive Summary
- II. Background
 - A. California's Advanced Clean Cars Program for New Motor Vehicles
 - B. EPA's Consideration of CARB's Request
- III. Analysis of Preemption Under Section 209 of the Clean Air Act
 - A. Clean Air Act Preemption Provisions
 - B. Deference to California
 - C. Burden of Proof
 - D. Comments Received on EPA's Application of the Section 209(b) Criteria
- IV. California's Within the Scope Request for Its Zero Emission Vehicle Amendments
 - A. Chronology
 - B. CARB's ZEV Amendments
 - C. EPA's Determination Regarding the Appropriateness of CARB's Within the Scope Request for the 2012 ZEV Amendments
 - D. Application of the Within the Scope Waiver Criteria to CARB's 2012 ZEV Amendments Regarding 2017 and Earlier MYS
 - 1. Public Health and Welfare
 - 2. Consistency With Section 202(a)
 - 3. New Issues
- V. Consideration of the Advance Clean Car Regulations Under the Full Waiver Criteria
 - A. California's Protectiveness Determination
 - 1. Comments on CARB's Protectiveness Determination
 - 2. Is California's protectiveness determination arbitrary and capricious?
 - 3. Section 209(b)(1)(A) Conclusion
 - B. Does California need its standards to meet compelling and extraordinary conditions?
 - 1. EPA's March 6, 2008 GHG Waiver Denial
 - 2. EPA's July 9, 2009 GHG Waiver
 - 3. Response to Comments Received
 - 4. CARB's GHG Emission Standards
 - 5. CARB's ZEV Emission Standards
 - 6. CARB's PM Emission Standards
 - 7. Section 209(b)(1)(B) Conclusion
 - C. Are the California ACC standards consistent with section 202(a) of the Clean Air Act?
 - 1. Historical Approach
 - 2. LEV III Criteria Pollutant Standards
 - a. Particulate Matter Standards

- b. EPA's Response to Comments
- 3. LEV III Greenhouse Gas Emission Standards
 - a. Comments on CARB's 2017 Through 2025 GHG Emission Standards
 - b. EPA's Response to Comments
- 4. California's ZEV Amendments as They Affect 2018 Through 2025 Model Years
 - a. Comments on CARB's ZEV Amendments
 - b. EPA's Response to Comments
 - c. Conclusion on Technological Feasibility
- 5. Consistency of Certification Test Procedures
- 6. Relevance of the Energy Policy and Conservation Act (EPCA) to the Waiver Decision
- VI. Decision
- VII. Statutory and Executive Order Reviews

I. Executive Summary

Today, as Assistant Administrator of the EPA's Office of Air and Radiation, I am granting California's request for a waiver of Clean Air Act preemption for California's ACC that combines the control of smog and soot causing pollutants and GHG emissions into a single coordinated package of requirements for MY 2015 through 2025 passenger cars (PCs), light-duty trucks (LDTs), medium-duty passenger vehicles (MDPVs), and limited requirements related to heavy-duty vehicles (HDVs). The ACC program regulations include revisions to both California's LEV and ZEV programs. By letter dated June 27, 2012, CARB submitted a request (CARB waiver request) that EPA grant a waiver of preemption under section 209(b) of the Clean Air Act (CAA), 42 U.S.C. 7543(b) for the revisions to the LEV program (LEV III).¹ CARB also sought confirmation that the amendments to the ZEV program are within the scope of prior waiver decisions issued by EPA, or in the alternative requested a waiver for these revisions (the LEV III and ZEV amendments, together known as the ACC, are considered as CARB's waiver request). By letter dated December 7, 2012, CARB submitted additional information (CARB supplemental request) to EPA requesting that EPA consider as part of CARB's pending ACC waiver request the CARB's Executive Officer adopted "deemed to comply" regulation.² CARB's "deemed to comply" regulation, adopted by CARB's Board on November 15, 2012 and final action taken by CARB's Executive Officer on December 6, 2012, allows automobile manufacturers to demonstrate compliance with CARB's GHG standards by complying with

¹ CARB waiver request at EPA-HQ-OAR-2012-0562-0004. The cover letter to CARB's Waiver Request is at EPA-HQ-OAR-2012-0562-0004.

² CARB supplemental request at EPA-HQ-OAR-2012-0562-0374.

EPA's GHG standards which were published for those MYs.

By today's decision we are confirming that CARB's ZEV amendments, as they affect 2017 and prior MYs are within the scope of previous ZEV waivers. EPA also finds that the entire ACC program meets the criteria for a waiver of Clean Air Act preemption and thus we are granting a waiver for CARB's ACC program. Included in EPA's full waiver are CARB's "deemed to comply" regulations, and the ZEV regulations as they affect 2017 and prior MYs.

The legal framework for this decision stems from the waiver provision first adopted by Congress in 1967, and later modified in 1977. Congress established that there would be only two programs for control of emissions from new motor vehicles—EPA emission standards adopted under the Clean Air Act, and California emission standards adopted under state law. Congress accomplished this by preempting all state and local governments from adopting or enforcing emission standards for new motor vehicles, while at the same time providing that California could receive a waiver of preemption for its emission standards and enforcement procedures. Other states can only adopt standards that are identical to California's standards. This struck an important balance that protected manufacturers from multiple and different state emission standards, and preserved a pivotal role for California in the control of emissions from new motor vehicles. Congress recognized that California could serve as a pioneer and a laboratory for the nation in setting new motor vehicle emission standards. Congress intentionally structured this waiver provision to restrict and limit EPA's ability to deny a waiver. The provision was designed to ensure California's broad discretion to determine the best means to protect the health and welfare of its citizens.

Section 209(b) specifies that EPA must grant California a waiver if California determines that its standards are, in the aggregate, at least as protective of the public health and welfare as applicable federal standards. EPA may deny a waiver only if it makes at least one of three findings specified under the Clean Air Act (including whether California's "protectiveness finding" noted above is arbitrary and capricious). Therefore, EPA's role upon receiving a request for waiver of preemption from California is to determine whether it is appropriate to make any of the three findings specified by the Clean Air Act and if the Agency cannot make at least one of the three findings then the waiver must be

granted. The three waiver criteria are properly seen as criteria for a denial—EPA must grant the waiver unless at least one of three criteria for a denial is met. This is different from most waiver situations before the Agency, where EPA typically determines whether it is appropriate to make certain findings necessary for granting a waiver, and if the findings are not made then a waiver is denied. This reversal of the normal statutory structure embodies and is consistent with the congressional intent of providing deference to California to maintain its own new motor vehicle emissions program.

The three criteria for denial of a waiver are: first, whether California's determination that its standards are, in the aggregate, at least as protective as applicable federal standards is arbitrary and capricious (Section 209(b)(1)(A)); second, whether California has a need for such standards to meet compelling and extraordinary conditions (Section 209(b)(1)(B)); and third, whether California's standards are consistent with Section 202(a) of the Clean Air Act (Section 209(b)(1)(C)). EPA and the Court of Appeals for the District of Columbia Circuit have consistently interpreted section 209(b) as placing the burden on the opponents of a waiver to demonstrate that one of the criteria for a denial has been met.³

If California acts to amend a previously waived standard or accompanying enforcement procedure, the amendment may be considered within the scope of a previously granted waiver provided that it does not undermine California's determination that its standards in the aggregate are as protective of public health and welfare as applicable federal standards, does not affect its consistency with section 202(a) of the Clean Air Act, and raises no new issues affecting EPA's previous waiver decisions.⁴

In this case, California is combining three sets of motor vehicle emission standards into a single ACC waiver request. The standards are complimentary in the way they address interrelated ambient air quality needs and climate change. EPA has previously granted a series of waiver and within the scope decisions regarding CARB's LEV, ZEV and GHG emission programs.⁵

³ *Motor and Equipment Manufacturers Ass'n v. EPA (MEMA I)*, 627 F.2d 1095, 1120–1121 (D.C. Cir. 1979).

⁴ Decision Documents accompanying within the scope of waiver determinations in 66 FR 7751 (January 25, 2001) at p. 5 and 51 FR 12391 (April 10, 1986) at p. 2, *see also, e.g.*, 46 FR 36742 (July 15, 1981).

⁵ EPA's LEV waiver decisions are found at 58 FR 4166 (January 13, 1993); 64 FR 42689 (August 5,

As part of EPA's public comment process for CARB's ACC waiver request, we have received comments from: several states and organizations representing states; health and environmental organizations; industry; and other stakeholders.⁶ The vast majority of comments EPA received were in support of the waiver. EPA received opposition to certain elements of the waiver, including a joint comment submitted by the Association of Global Automakers and the Alliance of Automobile Manufacturers (Manufacturers or Manufacturers comment).⁷ We also received opposition to the ACC waiver request from the National Automobile Dealers Association (NADA or Dealers, or NADA comment).⁸

After a thorough evaluation of the record, we have determined that the waiver opponents have not met their burden of proof in order for us to deny the CARB's waiver request under any of the three criteria in section 209(b)(1). EPA also confirms that CARB's ZEV amendments, as they affect the 2017 and earlier MYs are within the scope of previous waivers of preemption. In the alternative, EPA's waiver of preemption for CARB's ACC regulations includes a

1999); 68 FR 19811 (April 22, 2003); 70 FR 22034 (April 28, 2005); and 75 FR 44951 (July 30, 2010). EPA's GHG waiver decisions are found at 73 FR 12156 (March 6, 2008) (GHG waiver denial); 74 FR 32744 (July 8, 2009) (GHG waiver); and 76 FR 34693 (June 14, 2011) (This prior within the scope decision included CARB's prior "deemed to comply" regulation for the 2012–2016 MYs). EPA's most recent ZEV waiver decisions are found at 71 FR 78190 (December 28, 2006); and 76 FR 61095 (October 3, 2011).

⁶ EPA received support for CARB's waiver request, in the form of oral testimony and/or written comment (all docket references are to EPA-HQ-OAR-2012-0562-XXXX, with the last four numbers associated with each comment) from: Environmental Defense Fund (EDF)—0025 and 0353, the National Association of Clean Air Agencies (NACAA)—0028, American Lung Association—0029, Advanced Engine Systems Institute—0030, Environment America—0031, Consumer Federation of America (CFA)—0032, Manufacturers of Emission Control (MECA)—0033, Natural Resources Defense Council (NRDC)—0347, South Coast Air Quality Management District (SCAQMD)—0346, Sierra Club—0348, Northeast States for Coordinated Air Uses Management (NESCAUM)—0350, New York State Department of Environmental Conservation—0351, Consumers Union—0354, and Union of Concerned Scientists—0355. EPA also received similar comment at the waiver public hearing, transcript found at EPA-HQ-OAR-2012-0562-0026.

⁷ EPA-HQ-OAR-2012-0562-0349. EPA also received written comment from Toyota Motor North America (Toyota) at EPA-HQ-OAR-2012-0562-0372 which notes that "Toyota could be forced to employ a variety of costly marketing programs to ensure compliance if the market does not accept ZEV technology in the volumes anticipated by California." Toyota notes that its further concerns are expressed in detail in the Manufacturers comments.

⁸ EPA-HQ-OAR-2012-0562-0352.

waiver of preemption for CARB's ZEV amendments as they affect all MYs, including 2017 and prior MYs.

II. Background

A. California's Advanced Clean Car Program for New Motor Vehicles

As further explained below, CARB has adopted amendments to title 13, California Code of Regulations (CCR), and has established a single coordinated package that includes amendments to three sets of regulations regulating emissions from new PCs, LDTs, MDPVs, and certain HDVs:⁹ the LEV regulation which includes two components—standards relating to criteria pollutants and standards to regulate GHG emissions, and the ZEV program.

This single ACC program combines the control of smog-causing pollutants and GHG emissions into a coordinated package of amendments and requirements for MY 2015 through 2025 in order to address near and long term smog issues within California and identified GHG emission reduction goals. The program also includes amended ZEV regulations and a Clean Fuels Outlet regulation. These additional program elements are designed to address these goals as well.¹⁰ The ACC program, together, provides the regulated manufacturers with the ability to plan and integrate their product designs in order to meet applicable CARB emission requirements.

In order to achieve further emission reductions from the light- and medium-duty fleet, CARB adopted several amendments that represent a strengthening of its ongoing LEV regulations, including: a reduction of fleet average emissions of new PCs, LDTs, and MDPVs to super ultra-low-emission vehicle (SULEV) levels by 2025; replacement of separate non-methane organic gas (NMOG) and oxides of nitrogen (NO_x) standards with combined NMOG plus NO_x standards, which provides automobile manufacturers with additional flexibility in meeting the new stringent standards; an increase of full useful life durability requirements from 120,000 miles to 150,000 miles, which guarantees vehicles sustain these extremely low emission levels longer; a backstop to assure continued production of super-ultra-low-emission

vehicles after partial-zero-emission vehicles (PZEVs) as a category are moved from the ZEV regulations to the LEV regulations in 2018; more stringent particulate matter (PM) standards for light- and medium-duty vehicles, which will reduce the health effects and premature deaths associated with these emissions; zero fuel evaporative emission standards for PCs and LDTs, and more stringent standards for medium- and heavy-duty vehicles (MDVs); and, more stringent supplemental federal test procedure (SFTP) standards for PC and LDTs, which reflect more aggressive real world driving and, for the first time, require MDVs to meet SFTP standards.

The second component of CARB's LEV III regulations includes amendments to its GHG emission standards. CARB's GHG standards for the 2017 through 2025 MYs are designed to respond to California's identified goals of reducing GHG emissions to 80 percent below 1990 levels by 2050 and in the near term to reduce GHG levels to 1990 levels by 2020. As such, CARB's GHG amendments: reduce new light-duty CO₂ emissions from new light-duty regulatory MY 2016 levels by approximately 34 percent by MY 2025, and from about 251 grams of CO₂ per mile to 166 grams, based on the projected mix of vehicles sold in California; set emission standards for CO₂, CH₄, and N₂O; establish footprint based CO₂ emission standards, as distinguished from the current California GHG requirement of a fleet average GHG standard (this will allow manufacturers' new vehicle fleet CO₂ emissions to fluctuate according to their car-truck composition and sales according to vehicle footprint and will align the requirement with current federal GHG requirements); provide credits toward the CO₂ standard if a manufacturer reduces refrigerant emissions from the vehicle's air conditioning system; provide credits toward the ZEV standards if a manufacturer over complies with the LEV III GHG fleet requirement; provide credits towards the CO₂ standards if a manufacturer produces full size pickups with high efficiency drive trains; provide credits for deployment of technologies that reduce off-cycle CO₂ emissions; and require upstream emissions from zero-emission vehicles to be counted towards a manufacturer's light-duty vehicle GHG emissions. CARB's GHG emission regulations also include an optional compliance path whereby manufacturers may demonstrate compliance with CARB's

GHG emission regulations by complying with applicable EPA GHG emission requirements.

Lastly, CARB's ACC regulations include amendments to its ZEV regulations that can be described within two timeframes: (1) MY 2012 through 2017; and (2) MY 2018 and beyond. CARB's stated goal for amendments to the current ZEV regulation through MY 2017 is to make corrections and clarifications to its regulations and to enable manufacturers to successfully meet the 2018 and later MY requirements. These amendments include: A provision of compliance flexibility whereby carry forward credit limitations for ZEVs were removed, allowing manufacturers to bank ZEV credits indefinitely for use in later years (the flexibility also included slightly reducing the 2015 through 2017 credit requirement for intermediate volume manufacturers (IVM, less than 60,000 vehicles produced each year), to allow them to better prepare for requirements in 2018, and included a provision that allows ZEVs placed in any state that has adopted the California ZEV regulation to count towards the ZEV requirement through 2017 (i.e. extending the "travel provision" for BEVs through 2017); an adjustment of credits and allowances; and an addition of a new vehicle category (collectively "BEVx" vehicles) as a compliance option for manufacturers to meet up to half of their minimum ZEV requirement.

CARB's stated goal for its amendments affecting 2018 and subsequent MYs is the commercialization of ZEVs and "transitional zero-emission vehicles (TZEV; commonly a plug-in hybrid electric vehicle—PHEV). California would achieve this objective by simplifying its regulation and pushing higher production volumes which in turn would achieve cost reductions. These amendments include: an increased ZEV requirement for 2018 and subsequent MYs that pushes ZEVs and TZEVs to more than 15 percent of new sales by 2025; the removal of PZEV (near-zero emitting conventional technologies) and advanced technology PZEV (AT PZEV, typically non-plug-in HEVs) credits as compliance options for manufacturers; an allowance for manufacturers to use banked PZEV and AT PZEV credits earned in 2017 and previous MYs, but discount the credits, and place a cap on usage in 2018 and subsequent MYs; amended manufacturer size definitions that bring all but the smallest manufacturers under the full ZEV requirements by MY 2018; a *modified credit system that bases credits for ZEVs on range, with 50 mile*

⁹Medium-duty vehicles (MDVs) are vehicles in California's regulations between 8,500 and 114,000 lbs GVWR that are also called Class 2b/Class 3 vehicles. These vehicles are generally termed Heavy-duty vehicles under EPA's regulations.

¹⁰CARB's Clean Fuel Outlet Regulation is not subject to preemption under section 209 of the Clean Air Act.

BEVs earning 1 credit each and 350 Mile FCVs earning 4 credits each (the range of credit reflects the utility of the vehicle (i.e. the zero emitting miles it may travel) and its expected timing for commercialization) along with a simplified and streamlined TZEV credits system; a modified “travel” provision that ends the travel provision for BEVs after MY 2017 and extends the travel provision for FCVs; and provisions allowing manufacturers who systematically over comply with the LEV III GHG fleet standard to offset a portion of their ZEV requirement in 2018 through 2021 MYs only.

B. EPA’s Consideration of CARB’s Request

By letter dated June 27, 2012, CARB submitted a request (CARB waiver request) seeking a waiver of Section 209(a)’s prohibition for its ACC standards.¹¹ On August 31, 2012, a **Federal Register** notice (FR Notice) was published announcing an opportunity for hearing and comment on CARB’s request.¹² EPA held a public hearing in Washington, DC on September 19, 2012. The written comment period closed on October 19, 2012.

EPA’s FR Notice on CARB’s waiver request asked for comment on several matters. Since CARB had submitted a within the scope request for its ZEV amendments as they affect both the 2012–2017 MYs and 2018 and subsequent MYs, EPA invited comment on the following issues: first, should California’s ZEV amendments, as they affect the 2012–2017 MYs and/or the 2018 and later MYs, be considered under the within the scope criteria or should they be considered under the full waiver criteria?; second, to the extent part or all of those ZEV amendments should be considered as a within the scope request, do such amendments meet the criteria for EPA to confirm that they are within the scope of prior waivers? EPA also solicited comment in the event that EPA cannot confirm that some or all of CARB’s ZEV amendments are within the scope of previous waivers. We also requested comment on all aspects of the full waiver analysis with regard to the ACC program (the LEV III criteria pollutant and GHG regulations, and the ZEV amendments to the extent EPA does not consider them under the within the scope analysis noted above). Therefore, we asked commenters to consider the following three criteria: whether (a) California’s determination that its motor vehicle emission standards are, in the

aggregate, at least as protective of public health and welfare as applicable Federal standards is arbitrary and capricious, (b) California needs such standards to meet compelling and extraordinary conditions, and (c) California’s standards and accompanying enforcement procedures are consistent with section 202(a) of the Clean Air Act.

Because CARB noted (in its waiver request and in its incorporated Board Resolution 12–11) its commitment to propose a “deemed to comply” rule for its GHG standards shortly after EPA finalized its light-duty vehicle GHG emission standards, EPA specifically invited comment on CARB’s waiver request in light of CARB’s explicit plans concerning adoption of a “deemed to comply” provision into its LEV III GHG standards.

III. Analysis of Preemption Under Section 209 of the Clean Air Act

A. Clean Air Act Preemption Provisions

Section 209(a) of the Act provides:

No State or any political subdivision thereof shall adopt or attempt to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to this part. No State shall require certification, inspection or any other approval relating to the control of emissions from any new motor vehicle or new motor vehicle engine as condition precedent to the initial retail sale, titling (if any), or registration of such motor vehicle, motor vehicle engine, or equipment.¹³

Section 209(b)(1) of the Clean Air Act requires the Administrator, after an opportunity for public hearing, to waive application of the prohibitions of section 209(a) for any State that has adopted standards (other than crankcase emission standards) for the control of emissions from new motor vehicles or new motor engines prior to March 30, 1966, if the State determines that its State standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards.¹⁴ However, no such waiver shall be granted by the Administrator if she finds that: (A) The protectiveness determination of the State is arbitrary and capricious; (B) the State does not need such State standards to meet compelling and extraordinary conditions; or (C) such State standards and accompanying enforcement procedures are not consistent with section 202(a) of the Act. In previous waiver decisions, EPA has stated that

Congress intended EPA’s review of California’s decision-making be narrow. This has led EPA to reject arguments that are not specified in the statute as grounds for denying a waiver:

The law makes it clear that the waiver requests cannot be denied unless the specific findings designated in the statute can properly be made. The issue of whether a proposed California requirement is likely to result in only marginal improvement in air quality not commensurate with its cost or is otherwise an arguably unwise exercise of regulatory power is not legally pertinent to my decision under section 209, so long as the California requirement is consistent with section 202(a) and is more stringent than applicable Federal requirements in the sense that it may result in some further reduction in air pollution in California.¹⁵

Thus, my consideration of all the evidence submitted concerning a waiver decision is circumscribed by its relevance to those questions that I may consider under section 209(b).

B. Deference to California

In previous waiver decisions, EPA has recognized that the intent of Congress in creating a limited review based on the section 209(b)(1) criteria was to ensure that the federal government did not second-guess state policy choices. This has led EPA to state:

It is worth noting * * * I would feel constrained to approve a California approach to the problem which I might also feel unable to adopt at the federal level in my own capacity as a regulator. The whole approach of the Clean Air Act is to force the development of new types of emission control technology where that is needed by compelling the industry to “catch up” to some degree with newly promulgated standards. Such an approach * * * may be attended with costs, in the shaped of reduced product offering, or price or fuel economy penalties, and by risks that a wider number of vehicle classes may not be able to complete their development work in time. Since a balancing of these risks and costs against the potential benefits from reduced emissions is a central policy decision for any regulatory agency under the statutory scheme outlined above, I believe I am required to give very substantial deference to California’s judgments on this score.¹⁶

EPA has stated that the text, structure, and history of the California waiver provision clearly indicate both a congressional intent and appropriate EPA practice of leaving the decision on “ambiguous and controversial matters of

¹⁵ 36 FR 17458 (Aug. 31, 1971). Note that the more stringent standard expressed here, in 1971, was superseded by the 1977 amendments to section 209, which established that California must determine that its standards are, in the aggregate, at least as protective of public health and welfare as applicable Federal standards.

¹⁶ 40 FR 23103–23104; see also LEV I (58 FR 4166), January 13, 1993) Decision Document at 64.

¹³ Clean Air Act (CAA) section 209(a), 42 U.S.C. § 7543(a).

¹⁴ CAA section 209(b), 42 U.S.C. § 7543(b). California is the only State which meets section 209(b)(1)’s requirement for obtaining a waiver. See S. Rep. No. 90–403 at 632 (1967).

¹¹ EPA–HQ–OAR–2012–0562–0004.

¹² 77 FR 53199 (August 31, 2012).

public policy” to California’s judgment.¹⁷

The House Committee Report explained as part of the 1977 amendments to the Clean Air Act, where Congress had the opportunity to restrict the waiver provision, it elected instead to explain California’s flexibility to adopt a complete program of motor vehicle emission controls. The amendment is intended to ratify and strengthen the California waiver provision and to affirm the underlying intent of that provision, i.e., to afford California the broadest possible discretion in selecting the best means to protect the health of its citizens and the public welfare.¹⁸

C. Burden of Proof

In *Motor and Equip. Mfrs Assoc. v. EPA*, 627 F.2d 1095 (D.C. Cir. 1979) (*MEMA I*), the U.S. Court of Appeals stated that the Administrator’s role in a section 209 proceeding is to:

consider all evidence that passes the threshold test of materiality and * * * thereafter assess such material evidence against a standard of proof to determine whether the parties favoring a denial of the waiver have shown that the factual circumstances exist in which Congress intended a denial of the waiver.¹⁹

The court in *MEMA I* considered the standards of proof under section 209 for the two findings necessary to grant a waiver for an “accompanying enforcement procedure” (as opposed to the standards themselves): (1) Protectiveness in the aggregate and (2) consistency with section 202(a) findings. The court instructed that “the standard of proof must take account of the nature of the risk of error involved in any given decision, and it therefore varies with the finding involved. We need not decide how this standard operates in every waiver decision.”²⁰

The court upheld the Administrator’s position that, to deny a waiver, there must be ‘clear and compelling evidence’ to show that proposed procedures undermine the protectiveness of California’s standards.²¹ The court noted that this standard of proof also accords with the congressional intent to provide California with the broadest possible discretion in setting regulations it finds protective of the public health and welfare.²²

With respect to the consistency finding, the court did not articulate a

standard of proof applicable to all proceedings, but found that the opponents of the waiver were unable to meet their burden of proof even if the standard were a mere preponderance of the evidence. As we explained in the GHG waiver decision, although *MEMA I* did not explicitly consider the standards of proof under section 209 concerning a waiver request for “standards,” as compared to accompanying enforcement procedures, there is nothing in the opinion to suggest that the court’s analysis would not apply with equal force to such determinations.²³ EPA’s past waiver decisions have consistently made clear that: “[E]ven in the two areas conceded reserved for Federal judgment by this legislation—the existence of compelling and extraordinary’ conditions and whether the standards are technologically feasible—Congress intended that the standards of EPA review of the State decision to be a narrow one.”²⁴

Finally, opponents of the waiver bear the burden of showing that the criteria for a denial of California’s waiver request has been met. As found in *MEMA I*, this obligation rests firmly with opponents of the waiver in a section 209 proceeding, holding that: “[t]he language of the statute and it’s legislative history indicate that California’s regulations, and California’s determinations that they must comply with the statute, when presented to the Administrator are presumed to satisfy the waiver requirements and that the burden of proving otherwise is on whoever attacks them. California must present its regulations and findings at the hearing and thereafter the parties opposing the waiver request bear the burden of persuading the Administrator that the waiver request should be denied.”²⁵

The Administrator’s burden, on the other hand, is to make a reasonable evaluation of the information in the record in coming to the waiver decision. As the court in *MEMA I* stated, Ahere, too, if the Administrator ignores evidence demonstrating that the waiver should not be granted, or if he seeks to overcome that evidence with unsupported assumptions of his own, he runs the risk of having his waiver decision set aside as ‘arbitrary and capricious.’²⁶ Therefore, the Administrator’s burden is to act “reasonably.”²⁷

D. Comments Received on EPA’s Application of the Section 209(b) Criteria

The Dealers provided a series of suggestions on several threshold issues for how EPA should evaluate CARB’s ACC waiver request. While the ACC regulatory components are interrelated, the Dealers state that EPA should evaluate them separately by applying each of the three waiver criteria under section 209(b).²⁸

This commenter also suggests that it is CARB’s burden to make a determination that its standards are at least as protective of the public health and welfare as any applicable federal standards, and to determine that the standards are technologically feasible.²⁹ This commenter also suggests that Congress allowed for a limited waiver only if California is able to show that its standards are necessary to address “the unique problems facing [the state] as a result of its climate and topography.”³⁰

In addition, the Dealers suggest that a decision to deny a CARB waiver request only need meet a “preponderance of the evidence” standard. This commenter maintains that such a standard would preserve the traditional presumption in favor of CARB’s protectiveness determination while affording EPA or those opposed to the waiver the ability to uphold section 209’s general preemption. The commenter suggests that EPA mischaracterizes the *MEMA I* decision within its prior GHG waiver decision when EPA stated “there is nothing in the opinion to suggest that the court’s analysis would not apply with equal force to such determinations.”³¹ The commenter states that because the Court opined that the “preponderance of the evidence standard governs the inquiry into technological feasibility,” and the Court determined that the appropriate standard of proof “must take into account the nature of risk of error involved in any given decision” it is therefore appropriate that EPA must use its discretion to determine the appropriate standard when evaluating a waiver request under each element of

²⁸ NADA does not address the application of the three waiver criteria to CARB’s LEV III criteria pollutant regulations.

²⁹ NADA comment at 3.

³⁰ *Id.*

³¹ 74 FR 32748. EPA notes that the language following this statement, in the same paragraph of the GHG waiver decision, states “EPA’s past waiver decisions have consistently made clear that: “[E]ven in the two area conceded reserved for Federal judgment by this legislation—the existence of compelling and extraordinary conditions and whether the standards are technologically feasible—Congress intended that the standards of EPA review of the State decision to be a narrow one.”

¹⁷ 40 FR 23104; 58 FR 4166.

¹⁸ *MEMA I*, 627 F.2d at 1110 (citing H.R.Rep. No 294, 95 Cong., 1st Sess. 301–02 (1977)).

¹⁹ *MEMA I*, 627 F.2d at 1122.

²⁰ *Id.*

²¹ *Id.*

²² *Id.*

²³ 74 FR 32748

²⁴ See, e.g., 40 FR 21102–103 (May 28, 1975).

²⁵ *MEMA I*, 627 F.2d at 1121.

²⁶ *Id.* at 1126.

²⁷ *Id.*

Section 209(b). To settle the question of the appropriate burden of proof the commenter cites *International Harvester v. Ruckelshaus* wherein the decision over burden of proof is informed by an analysis that balances the cost of a wrong decision on feasibility against the gains of a correct one: “These costs * * * and the impact on jobs and the economy from a decision which is only partially accurate * * * against the environmental savings.”

With regard to the Dealers’ first suggestion that EPA should separately apply the waiver criteria to each of the ACC regulatory components (e.g., GHG emission standards and ZEV), EPA notes that each part of CARB’s regulations are subject to EPA waiver review. As such, by today’s decision we address any adverse comments in that regard. However (and as explained in further detail under EPA’s analysis of each waiver criteria below), we believe the Dealers fundamentally misunderstand the specific language of the section 209(b), its congressional history, and EPA’s past administrative waiver practice. For example, although EPA would typically examine whether CARB’s regulation of each pollutant is as stringent as any applicable federal standard, we nevertheless recognize both the statutory language and legislative history that requires EPA to consider the protectiveness of a CARB standard “in the aggregate” of all emission standards covering that particular industry category (e.g., light-duty vehicles, etc). Furthermore, under the second waiver criterion of section 209(b), EPA continues to evaluate whether those opposed to a waiver have demonstrated that CARB no longer experiences compelling and extraordinary conditions. As such, for any standard or set of standards presented to EPA for waiver consideration, EPA’s evaluation continues to be whether CARB has a need for its motor vehicle emission program to address the underlying compelling and extraordinary conditions. This is further explained in our discussion of this waiver criterion. Similarly, although the Dealers might suggest that EPA only be obligated to determine whether each of CARB’s ACC regulatory components, in isolation, is consistent with section 202(a) we believe the better approach is to determine the technological feasibility of each standard in the context of the entire regulatory program for the particular industry category. In this case, we believe CARB has in fact recognized the interrelated, integrated

approach the industry must take in order to address the regulatory components of the ACC program. As noted above, the House Committee Report explained as part of the 1977 amendments to the Clean Air Act that California was to be afforded flexibility to adopt a *complete* program of motor vehicle emission controls (emphasis added). As such, EPA believes that Congress intended EPA to afford California the broadest possible discretion in selecting the best means to protect the health of its citizens and the public welfare.³² EPA believes this intent extends to CARB’s flexibility in designing its motor vehicle emission program and evaluating the aggregate effect of regulations within the program.

With regard to CARB’s initial burden in submitting a waiver request to EPA, we believe this commenter misreads both section 209(b) along with the case law and legislative history it cites. California is only required to make a protectiveness finding as a threshold matter before submitting its waiver request to EPA. Section 209(b) of the Clean Air Act plainly states that “The Administrator shall, * * *, waive application of this section * * *, if the State determines that the State standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards. No such waiver shall be granted if the Administrator finds that * * *.” Nothing on the face of section 209(b) requires California to make affirmative findings or showings under section 209(b)(1)(B) or (C). The *MEMA I* decision cited to by the commenter does not support the suggestion that CARB must initially make an affirmative determination or showing beyond the protectiveness determination. Of course, whether or not CARB has such a burden, CARB has clearly provided in its initial waiver request considerable support for its view that its waiver request meets the requirements of section 209(b)(1)(B) and (C).³³

EPA continues to believe that the burden of proof for each waiver criteria lies on the opposing party. As earlier explained, this is inherent in the statutory provision that requires EPA to grant a waiver unless it makes one of the specific negative findings listed in section 209(b)(1).

The language of the statute and its legislative history indicate that California’s regulations, and California’s determination that they comply with the statute, when presented to

the Administrator are presumed to satisfy the waiver requirements and that the burden of proving otherwise is on whoever attacks them. California must present its regulations and findings at the hearing, and thereafter the parties opposing the waiver request bear the burden of persuading the Administrator that the waiver request should be denied.³⁴

Further, pertinent legislative history evinces Congressional intent to place the burden of proof on the party opposing a waiver. This appears most dramatically from the debates on the floor of the House over two alternative versions of the statutory language. One, sponsored by the relevant legislative committee, would have permitted the federal government, upon application showing by California, to set special California standards if certain conditions were met. The second, which was sponsored by the entire California delegation, see 113 Cong. Rec. H 14428 (Cong. Moss) (daily ed. Nov. 2, 1967), and eventually adopted on the floor, would have required the federal government to waive preemption of standards promulgated by California unless certain findings were made. Despite the understandable efforts of some sponsors of the committee language to portray the differences between the two versions as purely verbal the majority of the House clearly disagreed. 113 Cong. Rec. H 14404 (Cong. Herlong); H 14432 (Cong. Rogers) (daily ed. Nov. 2, 1967). Sponsors of the language eventually adopted (the language sponsored by the California delegation) referred repeatedly to their intent to make sure that no “Federal bureaucrat” would be able to tell the people of California what auto emission standards were good for them, as long as they were stricter than Federal standards. 113 Cong. Rec. H 14393 (Cong. Sess); H 14395 (Cong. Smith); H 14396 (Cong. Holfield); H 14399 (Cong. Hosmer); H 14408 (Cong. Roybal); H 14409 (Cong. Reinicke); H 14429 (Cong. Wilson) (daily ed. Nov. 2, 1967). Thus, at the close of the debate, the House rejected language that would have imposed the burden of proof on California and instead accepted language that which places the burden on those who allege, in effect, that EPA’s GHG emission standards are adequate to California’s needs. They also viewed the change as necessary to their intent to preserve the California state auto emission control program in its original form, see HR. Rep. No. 728, 90th Cong. 1st Se. 96–97 (1967) (separate views of Congressmen Moss and Van Deerlin), 113 Cong. Rec. H 14415 (daily ed. Nov. 2, 1967) (Cong.

³² H.R. Rep No. 294, 95 Cong., 1st sess. 301–02 (1977).

³³ CARB waiver request and supporting attachments.

³⁴ *MEMA I*, 627 F.2d at 1121.

Van Deerlin) and to continuing the national benefits that might flow from allowing California to continue to act as a pioneer in this field. 113 Cong. Rec. H 14407 (Cong. Moss) (daily ed. Nov. 2, 1967); S 16395 (daily ed. Nov. 14, 1967) (Senator Murphy). These points had also previously been made by the Senate Public Works Committee in reporting out waiver language identical to that eventually adopted by the House. S. Rep. No. 403, 90th Cong. 1st Sess. 32–33 (1967).

As also explained in *MEMA I*:

Legislative history makes clear that the burden of proof lies with the parties favoring denial of the waiver. Petitioners lost the battle they now wage twelve years ago when Congress specifically declined to adopt a provision which would have imposed on California the burden to demonstrate that it met the waiver requirements. As noted, the Senate version of the Air Quality Act of 1967 contained the language which was ultimately adopted by Congress. It vested the power to make the protectiveness determination in California and sharply restricted the Secretary's role in a waiver proceeding. The Senate Report explained that under the proposal the "Secretary is required to waive application unless he finds" one of the factual circumstances set out in section 209(b)(1)(A)–(C). S. Rep. No. 403, 90th Cong., 1st Sess. 33 (1967).

Finally, with regard to the Dealers' arguments about the burden of proof, we believe it necessary to differentiate between two separate questions: 1) who has the burden of proof; and 2) what is the appropriate level of proof? A discussion of who holds the burden of proof is addressed above. Below is a discussion regarding the appropriate "level" of proof. EPA agrees with the Dealers that EPA has the discretion to determine the appropriate level of proof, and we are guided by the language of the statute, relevant case law, and our prior administrative practice.

With regard to the standard of proof applicable to CARB's protectiveness determination, EPA rejects any contention that the standard should be anything other than "clear and compelling evidence." The language of section 209(b)(1)(A) requires that the Administrator find that CARB's protectiveness determination is "arbitrary and capricious" suggesting that EPA or others that may oppose the waiver must demonstrate that CARB's factual findings lacked any acceptable reasoning. As noted above, the *MEMA I* court upheld the Administrator's position that, to deny a waiver, there must be 'clear and compelling evidence' to show that proposed procedures undermine the protectiveness of

California's standards.³⁵ The court noted that this standard of proof also accords with the congressional intent to provide California with the broadest possible discretion in setting regulations it finds protective of the public health and welfare.³⁶ EPA believes there is no reason to jettison the precedent along with its past administrative waiver practice merely because CARB seeks a waiver for "standards" as opposed to "accompanying enforcement procedures."

With respect to the second and third waiver criteria of section 209(b); however, EPA is also guided by the principles of deference noted above and by case law, as explained below in EPA's examination of technological feasibility. As the commenter notes, in the GHG waiver EPA reasoned that *MEMA I*'s holding on the applicable standard of proof should be extended to waiver of standards. EPA continues to believe that it is appropriate to impose a standard of preponderance of evidence on the proponent of denial of a waiver of standards, for the second and third waiver criteria. This standard would also be similar to the standard in civil matters. "This view of the standard of proof dictates the standard normally adopted in civil matters, a preponderance of the evidence."³⁷ EPA also believes that it should apply such a standard in a way that accords with congressional intent to provide California with the broadest possible discretion in setting regulations that it finds protective of the public health and welfare³⁸ while limiting EPA's review to a narrow role that provides substantial deference to the State.³⁹

Further, EPA agrees with the commenter that in making its determination, EPA should be mindful of the risk of error involved.⁴⁰ But this does not change the burden of proof. "The Administrator is not entitled to ignore the evidence adduced at the hearing. He must consider all evidence that passes the threshold test of materiality and he must thereafter assess such material evidence against a standard of proof to determine whether the parties favoring a denial of the waiver have shown that the factual circumstances exist in which Congress intended denial of the waiver."⁴¹

In sum, based on the statutory structure of section 209(b)(1) and

legislative history, the burden of proof falls on those who wish EPA to deny the waiver.

IV. California's Within the Scope Request for its Zero Emission Vehicle Amendments

CARB's waiver request sought confirmation from EPA that the ZEV amendments (2012 ZEV Amendments), as they relate to 2017 and prior MYs are within the scope of existing waivers. The ACC waiver request also sought confirmation that the 2012 ZEV amendments as they relate to 2018 and later MYs are within the scope of existing waivers, or, in the alternative, meets the criteria for a full waiver.

A. Chronology

California's initial ZEV program was included as part of its first low-emission vehicle program known as LEV I. The ZEV component of this program had a ZEV sales requirement starting with the 1998 MY and phasing in to a 10 percent sales requirement by the 2003 MY. EPA issued a waiver of preemption for these regulations on January 13, 1993.⁴² CARB subsequently amended the ZEV regulations in March, 1996, by eliminating the ZEV sales requirement for the 1998–2002 MYs and retaining the 10 percent sales requirement for the 2003 and later MYs. EPA issued a within the scope determination for these amendments on January 5, 2001.⁴³ CARB again amended the ZEV regulations in 1999, 2001, and 2003 and on December 21, 2006, EPA waived preemption for these amendments through the 2011 MY.⁴⁴ The 2006 EPA action included a within the scope decision for certain components of the regulations and a full waiver authorization for other components. Specifically, EPA determined that certain provisions of the 1999–2003 amendments to the ZEV regulations affecting 2006 and prior MYs were within the scope of previous waivers of preemption. EPA's 2006 decision concurrently granted California's request for a waiver of preemption to enforce certain provisions of the ZEV regulations as they affected 2007 through 2011 MY vehicles. EPA also stated that although we believed it appropriate to grant a full waiver of preemption for the 2007 MY, we also believed it appropriate to consider the 2007 MY regulations (with one exception noted) as within the scope of previous waivers of preemption, as they applied to certain vehicles that were

³⁵ *Id.*

³⁶ *Id.*

³⁷ *International Harvester v. Ruckelshaus*, 478 F.2d 615, 643 (D.C. Cir.) (*International Harvester*).

³⁸ *MEMA I*, 627 F.2d at 1122.

³⁹ 40 FR 23103–104.

⁴⁰ *MEMA I*, 627 F.2d at 1122.

⁴¹ *Id.*

⁴² 58 FR 4166 (January 13, 1993).

⁴³ 66 FR 7751 (January 25, 2001).

⁴⁴ 71 FR 78190 (December 28, 2006).

already subject to the pre-existing ZEV regulations. The 2006 waiver decision did not make any findings or determinations with regard to CARB's ZEV regulations as they pertained to the 2012 and later MYs. On October 3, 2011, EPA determined that additional CARB amendments to the ZEV regulations, as they affected 2011 and prior MYs, were within the scope of previous waivers for the ZEV regulations (or in the alternative qualified for a new waiver). At that time EPA also granted a waiver allowing California to enforce the ZEV amendments as they affected 2012 and later MYs.⁴⁵

B. CARB's ZEV Amendments

CARB's stated goal for the 2012 ZEV amendments, as they affect the ZEV regulation through MY 2017, was to make minor corrections and clarifications and to enable manufacturers to successfully meet the 2018 and later MY ZEV requirements. As such, the 2012 ZEV amendments included compliance flexibility provisions, adjustment of credits and allowances, and the addition of a new vehicle category that can earn credits to help manufacturers satisfy their sales requirement.

The compliance flexibility provisions include several modifications to the ZEV program credit and travel provisions. The limitations on carry forward credits for ZEVs are removed, allowing for indefinite banking of ZEV credits. The travel provision for credits from ZEV sales in Section 177 states is extended through 2017. Travel provision credits limit the credits manufacturers need to generate to those necessary for California, no matter how many states adopt the ZEV program under Section 177. Vehicles sold in section 177 states generate credits for California and vice versa under the travel provisions. The travel provision amendments allow for the continued travel of ZEV credits through MY 2017. Carry forward credits for ZEVs were previously limited to two additional model years. This limitation is removed by the 2012 amendments, allowing manufacturers to bank credits for all future model years. This modification is a flexibility to enable automakers to comply with the 2018 and later provisions.

In addition, the 2012 ZEV amendments provide for an adjustment of credits and allowances to incentivize longer-term technology. For example, the credits for Type V ZEVs (fuel cell vehicles with range of 300 miles or greater) are increased. Finally, the 2012

ZEV amendments create the addition of a new vehicle category that includes two new near-ZEV vehicle types: Type I.5x and Type IIx. These vehicles are plug-in hybrid electric vehicles (PHEVs) with more capable electric drive systems, but smaller engines that are not expected to be used often and have diminished performance. These vehicles can be used to meet up to one half of a manufacturer's minimum ZEV credit requirement. These vehicles will be eligible for the same credits as current Type I.5 (2.5 credits) and Type II (3 credits) and will qualify for travel provision credits through 2017.

Separately, CARB's stated goal for its 2012 ZEV amendments, as they affect 2018 and later MYs, is to achieve the commercialization of ZEVs and near-ZEVs such as PHEVs (with sales of approximately 15 percent of the new car market in California by 2025) by simplifying the regulation and pushing technology to higher volume production in order to achieve cost reductions. The amendments cover six major areas: increased ZEV requirements phased-in through 2025; the removal of "commercialized" technology from the ZEV program; amended manufacturer size definitions, ownership requirements and transitions; a modified credit system, a modified travel provision; and a new opportunity for manufacturers to generate additional ZEV credits via over compliance with applicable GHG emission standards during this time period.

The increased ZEV credit requirements are equivalent to approximately 15 percent ZEV and near-ZEV sales by 2025. This sales level is deemed by CARB to be the threshold at which costs will decrease due to volume effects. The credit requirement is being ramped up from the current program's static level of 16 percent total, which includes PZEVs and AT PZEVs. The new requirement consists of a 2 percent minimum ZEV and 2.5 percent minimum TZEV (4.5 percent total) requirement, ramping up to 16 percent minimum ZEV and 6 percent minimum TZEV (22 percent total) requirement in 2025 and beyond. The 2012 ZEV amendment revisions to credit calculations for ZEVs and TZEVs result in a projected market share of 15.4 percent of new sales in 2025.

Under the previous ZEV mandate, credits were allowed for PZEV-certified vehicles and HEVs which are not plugged in. CARB is removing these vehicle types from the credit scheme in MY 2018 and later. Remaining credits that are banked can continue to be used, but with discounts and caps applied.

Manufacturer size definitions have been amended to apply full ZEV mandate to all but the smallest manufacturers. Manufacturer sales volumes will be combined if joint ownership exceeds 33.4 percent and the transition period for manufacturers changing size categories has been modified. Under this system, 97 percent of the light-duty market will be covered by the ZEV mandate.

Currently, manufacturers with sales volumes exceeding 60,000 units in California are classified as large volume manufacturers (LVM). This modification reduces the threshold to 20,000 units, which will bring most manufacturers under the full ZEV mandate. This modification is being made because many of these current intermediate vehicle manufactures (IVMs) have a large market presence outside California. Remaining IVMs will be allowed to comply with the ZEV mandate with no restrictions on ZEV technology type, meaning an IVM can fully comply with TZEVs, but not PZEVs or AT PZEVs.

Additionally, ownership thresholds for treatment of automakers as one entity are being modified to more closely align them with GHG fleet regulations and changes are being made to the lead time provisions as manufacturers move between size classes.

CARB also modified its credit system. ZEV credits are based on range and technology reflecting utility of the vehicle and expected timing for commercialization. BEVs with a 50-mile range earn one credit and FCVs with 350 miles of range earn four credits each. Up to half a manufacturer's credit requirement may be met with more capable PHEVs which are meant to operate mainly as EVs, but are equipped with a small range-extending engine.

TZEVs, which are essentially PHEVs of the type available today such as the Chevrolet Volt have simplified credits based on electric range and a minimum requirement of 10 miles all-electric on the US06 test cycle. The TZEV credit ranges from a minimum of 0.2 to a maximum of 1.3 with a greater than 80 mile range.

Excess credits earned and banked from PZEVs and AT PZEVs will be discounted in 2018 and later years. Their use will then be limited to 25 percent of a manufacturer's TZEV requirement. No portion of the ZEV requirement may be met with banked credits. Smaller manufacturers (IVMs) will not have their credits capped for 2018 or 2019. In 2020 and later, the IVM cap will be 25 percent, but applied to their combined ZEV/TZEV requirement.

⁴⁵ 76 FR 61095 (October 3, 2011).

CARB has also modified the credit levels for various ZEV types. The current tiered CARB system, which encouraged manufacturers to design vehicles to meet a given range threshold is replaced with an equation that calculates credits based on the UDSS electric driving range.

In addition, CARB has modified its “travel provisions.” The travel provision, which allows for the sale of a qualifying vehicle in a Section 177 state to count towards a manufacturer’s credit requirement in California, ends for BEVs after 2017. Since FCVs are far behind BEVs in development and market penetration, travel credits are extended for FCVs. California intends to extend travel credits until sufficient refueling infrastructure exists to support FCVs in the market.

Lastly, the 2012 ZEV amendments provide that automakers who over comply with the LEVIII GHG standard may use the extra GHG reductions to offset a portion of their ZEV requirement in MYs 2018 through 2021. Manufacturers may offset 50 percent of their ZEV mandate in 2018, ramping down to 30 percent in 2021, subject to certain requirements.

C. EPA’s Determination Regarding the Appropriateness of CARB’s Within the Scope Request for the 2012 ZEV Amendments

CARB primarily relies upon EPA’s prior waiver and within the scope findings to demonstrate the appropriateness of applying the within the scope criteria to its 2012 ZEV amendments. In EPA’s 2006 waiver determination, EPA stated that it will conduct a two-part inquiry when considering whether CARB amendments to a previously waived regulation fall within the scope of the previously granted waiver or whether the amendments require a new waiver:

EPA believes it is important to distinguish between the threshold issue of whether CARB’s amendments should be subjected to either the within-the-scope criteria or the full waiver, and separately determining whether the same amendments actually meet the applicable criteria for actually confirming the within-the-scope request or granting a full waiver of federal preemption.

In determining the threshold question, EPA will consider whether the amendments make minor technical revisions or provide compliance flexibility on the one hand or whether the amendments add new or more stringent pollutant standards or new motor vehicle categories on the other.⁴⁶

With regard to the 2017 and earlier MYs, following the precedent noted

⁴⁶ Decision Document accompanying waiver determination in 71 FR 78190 (December 28, 2006).

above, CARB maintains that the 2012 ZEV amendments create no new issues affecting the previous waiver determinations concerning the ZEV program and that the 2012 ZEV amendments do not undermine CARB’s original protectiveness determination and the ZEV regulations remain consistent with section 202(a). With regard to the 2018 and later MYs, CARB maintains that the within the scope criteria are appropriate since the overall ZEV credit requirement for MYs 2018 through 2022 is less burdensome than the currently waived program.

EPA received comment from the Manufacturers stating agreement that the amendments to the MYs 2009 through 2017 ZEV regulations qualify for a within the scope determination since the amendments increase the flexibility available to manufacturers to comply with those standards and otherwise lessen the burdens placed on manufacturers. However, the Manufacturers did not agree that the amendments to the ZEV regulation for 2018 and later MYs properly fall under the within the scope review. The commenter notes that in addition to the increase in the minimum ZEV credit requirements in 2018 MY and beyond, the CARB amendments also eliminate certain vehicle types (e.g., PZEVs and AT PZEVs) that were previously accepted towards compliance with the ZEV requirements during this time period. In addition, the Manufacturer notes that the changes to CARB’s travel provisions are significant and raise serious compliance concerns.

The Dealers commented generally that the ZEV waiver should be denied, but raised no specific concerns about a within-the-scope determination for MYs 2012–2017.

Therefore, EPA has received no explicit comment suggesting that EPA reject CARB’s request for confirmation that EPA evaluate the 2012 ZEV amendments as they affect the 2017 MY and earlier. EPA believes that it is appropriate to evaluate such amendments (which provide compliance flexibilities) under the within the scope criteria and applies such criteria below. However, with respect to the 2018 and later MYs, EPA agrees with the commenters that CARB’s 2012 ZEV amendments have, in total, added to the level of stringency and compliance obligations. Therefore, EPA does not believe it is appropriate to apply within the scope analysis to the ZEV amendments as they apply in the 2018 and later MYs. As explained below, because EPA is applying the full waiver criteria for the 2012 ZEV amendments as they pertain to the 2018

and later MYs, EPA will in the alternative also examine the revisions for the 2017 and earlier MYs using the full waiver criteria.

D. Application of the Within the Scope Waiver Criteria to CARB’s 2012 ZEV Amendments Regarding 2017 and Earlier MYs

1. Public Health and Welfare

Under section 209(b)(1)(A) of the Act, EPA cannot grant a waiver if the Agency finds that CARB was arbitrary and capricious in its determination that its State standards are, in the aggregate, at least as protective of public health and welfare as applicable federal standards. Similarly, under the criteria for a within the scope determination, the CARB amendments to an existing program may be considered within-the-scope of a previously granted waiver provided that the amendments do not undermine California’s determination that its standards in the aggregate are as protective of public health and welfare as applicable Federal standards. Thus, in the within the scope context CARB may rely on the “protectiveness determination” that the Board made at the time of the initial regulations (the regulations which subsequently received a waiver of federal preemption from EPA) and then CARB must only demonstrate why the protectiveness determination has not been undermined by CARB’s amendments or any other intervening events such as the adoption of EPA regulations since the initial waiver of federal preemption.

CARB asserts that its 2012 ZEV amendments as applied to MYs 2009 to 2017 are a critical component of the ACC package that will result in fleet standards that are at least as protective as would exist under federal standards. The Board resolved “that the Board hereby determines that the proposed regulations approved for adoption herein will not cause the California motor vehicle emission standards, in the aggregate, to be less protective of public health and welfare than applicable federal standards.”⁴⁷

EPA received no comments suggesting that CARB’s request should be denied on the basis of CARB failing to meet its burden associated with the protectiveness findings under section 209(b)(1)(A) of the Clean Air Act.

Therefore, based on the record before us, we cannot find that CARB’s 2012 ZEV amendments, as the affect 2017 and earlier MYs, would undermine CARB’s prior protectiveness determinations nor would it cause the California motor

⁴⁷ CARB Resolution 12–11 at EPA–HQ–OAR–2012–0562–0005.

vehicle emission standards, in the aggregate, to be less protective of public health and welfare than applicable federal standards.

2. Consistency With Section 202(a)

Under section 209(b)(1)(C), EPA cannot grant California its waiver request if the Agency finds that California standards and accompanying enforcement procedures are not consistent with section 202(a) of the Clean Air Act. Previous waivers of federal preemption have stated that California's standards are not consistent with section 202(a) if there is inadequate lead time to permit the development of technology necessary to meet those requirements, given appropriate consideration to the cost of compliance within that time. California's accompanying enforcement procedures would also be inconsistent with section 202(a) if the federal and California test procedures were inconsistent.

The scope of EPA's review of whether California's action is consistent with section 202(a) is narrow. EPA has previously found that the determination is limited to whether those opposed to the waiver have met their burden of establishing that California's standards are technologically infeasible, or that California's test procedures impose requirements inconsistent with the federal test procedure.⁴⁸

As previously noted, CARB maintains that the 2012 ZEV amendments, as they pertain to the 2017 and previous MYs, provide manufacturers with additional flexibility without increasing on balance the overall stringency of the preexisting ZEV requirements. EPA has received no comments explicitly questioning the feasibility of the amendments as they apply to these MYs. In the discussion below, EPA addresses the limited comments regarding the technological feasibility concerns with regard to 2018 and later MYs and EPA provides further analysis of the general technological feasibility concerns in the full waiver discussion. With regard to whether test procedures are consistent, CARB notes that the federal Tier 2 regulations require manufacturers to measure emissions from ZEVs in accordance with the California test procedures.⁴⁹ In addition, EPA has not received comment suggesting the test procedures are inconsistent. Therefore, based on the record before us, we cannot deny CARB's within the scope request for

2017 and prior MYs based on an inconsistency with section 202(a).

3. New Issues

As noted above, included in the within the scope criteria, is a determination of whether the amendments raise new issues affecting the previous waiver decisions. As previously noted, EPA examines any new information when reviewing whether CARB's amendments affect the ZEV program's consistency with section 202(a). If the amendments had increased the stringency of the standards upon the manufacturers (for the specific model years being reviewed in the within the scope analysis), or if the amendments had regulated or subjected new types of vehicles to be included in the ZEV program (or in this instance regulated the same vehicle types but for model years not previously waived by EPA), or added additional pollutants to the program, then likely new issues would have been created. However, in this instance no party has presented evidence that new issues exist for MYs 2017 and earlier as a result of the 2012 ZEV amendments. Therefore, EPA cannot deny CARB's request for a within the scope determination for MYs 2017 and earlier based on this criterion.

Therefore, based on the record before us, we cannot deny CARB's request for confirmation that its 2012 ZEV amendments, as they affect the 2017 and earlier MYs, are within the scope of previous waiver determinations. As such, we confirm CARB's request regarding the 2012 ZEV amendments as they affect 2017 and earlier MYs.

V. Consideration of Advanced Clean Car Regulations Under the Full Waiver Criteria

CARB's ACC program regulations include revisions to both California's LEV and ZEV programs. CARB's request seeks a waiver of preemption under section 209(b) of the Clean Air Act (CAA), 42 U.S.C. 7543(b) for the revisions to the LEV III program. CARB's request also seeks a waiver for the ZEV amendments included in the ACC program regulations. Subsequent to CARB's initial ACC waiver request, CARB's Executive Officer took action to formally adopt a "deemed to comply" regulation affecting the GHG component of the ACC package. CARB submitted this additional information to EPA and requested that EPA consider the "deemed to comply" regulation as part of CARB's pending ACC waiver request. EPA's application of the section 209(b) waiver request, including the "deemed to comply" regulation, is set forth below.

A. California's Protectiveness Determination

Section 209(b)(1)(A) of the Clean Air Act requires EPA to deny a waiver if the Administrator finds that California was arbitrary and capricious in its determination that its State standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards. EPA recognizes that the phrase "States standards" means the entire California new motor vehicle emissions program. Therefore, as explained below, when evaluating California's protectiveness determination, EPA compares the California-to-Federal standards. That comparison is undertaken within the broader context of the previously waived California program, which relies upon protectiveness determinations that EPA have previously found were not arbitrary and capricious.⁵⁰

Traditionally, EPA has evaluated the stringency of California's standards relative to comparable EPA emission standards.⁵¹ That evaluation follows the instruction of section 209(b)(2), which states: "If each State standard is at least as stringent as the comparable applicable Federal standard, such State standard shall be deemed to be at least as protective of health and welfare as such Federal standards for purposes of [209(b)(1)]."

To review California's protectiveness determination in light of section 209(b)(2), EPA conducts its own analysis of the newly adopted California standards to comparable applicable Federal standards. The comparison quantitatively answers whether the new

⁵⁰ In situations where there are no Federal standards directly comparable to the specific California standards under review, the analysis then occurs against the backdrop of previous waivers which determined that the California program was at least as protective of the federal program ((LEV II + ZEV) + GHG). See 71 FR 78190 (December 28, 2006), Decision Document for Waiver of Federal Preemption for California Zero Emission Vehicle (ZEV) Standards (December 21, 2006).

⁵¹ 36 FR 17458 (Aug. 31, 1971). ("The law makes it clear that the waiver requests cannot be denied unless the specific finding designated in the statute can properly be made. The issue of whether a proposed California requirement is likely to result in only marginal improvement in air quality not commensurate with its cost or is otherwise an arguably unwise exercise of regulatory power is not legally pertinent to my decision under section 209, so long as the California requirement is consistent with section 202(a) and is more stringent than applicable Federal requirements in the sense that it may result in some further reduction in air pollution in California."). The "more stringent" standard expressed here in 1971 was superseded by the 1977 amendments to section 209, which established that California's standards must be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards. The stringency standard remains, though, in section 209(b)(2).

⁴⁸ See *MEMA I*, at 1126.

⁴⁹ CARB waiver request at 29, citing 40 CFR 86.1811-04(n).

standards are more or less protective than the Federal standards. That comparison of the newly adopted California standards to the applicable Federal standards is conducted in light of prior waiver determinations. That is, the California-to-Federal analysis is undertaken within the broader context of the previously waived California program, which relies upon protectiveness determinations that EPA has not found arbitrary and capricious.⁵²

A finding that California's determination was arbitrary and capricious under section 209(b)(1)(A) must be based upon "clear and compelling evidence" to show that proposed [standards] undermine the protectiveness of California's standards."⁵³ Even if EPA's own analysis of comparable protectiveness or that suggested by a commenter might diverge from California's protectiveness finding, that is not a sufficient basis on its own for EPA to make a section 209(b)(1)(A) finding that California's protectiveness finding is arbitrary and capricious.⁵⁴

CARB has made a series of protectiveness determinations with regard to its ACC program. California made a protectiveness determination with regard to the 2012 ZEV and LEV amendments in CARB's Resolution 12-11, finding that the amendments would not cause the California motor vehicle emission standards, in the aggregate, to be less protective of public health and welfare than applicable federal standards.⁵⁵ CARB noted that this protectiveness determination is the logical extension of the comparable findings that were found to be sufficient in the analyses of California's previous protectiveness determinations for its ZEV, LEV, and GHG regulations.⁵⁶ As

explained in CARB's waiver request, the ACC program will result in reductions of both criteria pollutants and GHG emissions that, in the aggregate, are more protective than the pre-existing federal standards. CARB's Resolution 12-11 also sets forth the Board finding that "It is appropriate to accept compliance with the 2017 through 2025 MY National Program as compliance with California's GHG emission standards up through the 2017 through 2025 MYs, once U.S. EPA issues their Final Rule on or after its current July 2012 planned release, provided that the GHG reductions set forth in U.S. EPA's December 1, 2011 Notice of Proposed Rulemaking for 2017 through 2025 model year passenger vehicles are maintained, except that California shall maintain its own reporting requirements." Further, CARB's Resolution 12-21 sets forth that the CARB staff "prepared three separate Regulatory Notices * * * for these amendments [LEV III/GHG and ZEV] and presented them to the Board with a single coordinated analysis of emissions, costs, and associated environmental impacts and benefits."⁵⁷ CARB's Resolution 12-21 also resolves that the "recitals and findings contained in Resolution 12-11, are incorporated by reference herein."⁵⁸

In addition, at the time CARB adopted the "deemed to comply" regulation, the CARB Board found that such amendments do not undermine the Board's previous determination that the regulation's emission standards, other emission related requirements, and associated enforcement procedures are, in the aggregate, at least as protective of public health and welfare as applicable federal standards and are consistent with section 209 of the Clean Air Act.⁵⁹ Therefore, subsequent to the finalization of EPA's GHG regulation (August 31, 2012), and as part of the CARB Board's adoption of the "deemed to comply" rule on November 15, 2012, the Board resolved and determined "that the proposed regulations approved for adoption herein will not cause California motor vehicle emission standards, in the aggregate, to be less protective of public health and welfare than applicable federal standards."⁶⁰

With regard to criteria pollutants, CARB notes that the primary fleet average emission requirement, beginning in 2015, declines every year to a fleet average NMOG plus NO_x

emission standard of 0.030 g/mi in 2025. CARB notes that this is clearly more stringent than the current federal Tier 2 fleet average NO_x emission requirement with its implied fleet average NMOG and plus NO_x requirement. In addition, the LEV III PM standards 3 mg/mi and 1 mg/mi are also significantly more stringent than the federal Tier 2 p.m. standards. CARB also notes that while there is no criteria emissions benefit with its ZEV requirements in terms of vehicle (tank-to-wheel—TTW) emissions since the LEV III criteria pollutant fleet standard is responsible for the emission reductions, but CARB notes that in terms of upstream emission impacts (well-to-wheel—WTW) there are emission reductions achieved from the ZEV requirements. There are no comparable federal standards.

CARB also notes that with regard to GHG emissions, the ACC program as a whole would provide major reductions in GHG emissions (e.g., by 2025 CO₂ emissions would be reduced by almost 14 million metric tonnes (MMT) per year, which is 12 percent from baseline levels). CARB's ACC waiver request, notes that the federal GHG standards do not become more stringent in the 2017-2025 MYs, as CARB's do. However, CARB states that it understands more stringent standards will "soon be finalized."

At the time the Board adopted the "deemed to comply" amendments it had before it the "Staff Report: Initial Statement of Reasons demonstrating that if a National Program standard was theoretically applied only to California new vehicle sales alone, it might create a GHG deficit of roughly two million tons compared to the California standards."⁶¹ CARB notes that there might be a GHG emission deficit if the National Program applied in California, and thus CARB's GHG emission standards are at least as stringent as the EPA GHG emission standards.

1. Comments on CARB's Protectiveness Determination

The Dealers commented on CARB's protectiveness determinations for both its GHG emission standards and its ZEV regulations. At the outset, NADA claims that EPA must conduct a separate preemption waiver evaluation for each set of standards in the ACC program

⁶¹ EPA-HQ-OAR-2012-0562-0374 at 3. CARB also notes that to the extent a manufacturer chooses not to exercise their National Program compliance option in California this would actually provide additional GHG benefits in California, so compliance in California can never yield fewer cumulative greenhouse gas reductions from the industry wide fleet certified in California.

⁵⁷ CARB Resolution 12-21 at 7.

⁵⁸ *Id.* at 10.

⁵⁹ See CARB's Resolution 12-35; EPA-HQ-OAR-2012-0562-0374.

⁶⁰ *Id.* at p. 9.

⁵² In situations where there are no Federal standards directly comparable to the specific California standards under review, the analysis then occurs against the backdrop of previous waivers which determined that the California program was at least as protective of the federal program ((LEV II + ZEV) + GHG). See 71 FR 78190 (December 28, 2006), Decision Document for Waiver of Federal Preemption for California Zero Emission Vehicle (ZEV) Standards (December 21, 2006).

⁵³ *MEMA I*, 627 F.2d at 1122.

⁵⁴ "Once California has come forward with a finding that the procedures it seeks to adopt will not undermine the protectiveness of its standards, parties opposing the waiver request must show that this finding is unreasonable." *MEMA I*, 627 F.2d at 1124.

⁵⁵ See CARB's Resolution 12-11, EPA-HQ-OAR-2012-0562-0006 at 22. EPA notes that the CARB Board also resolved that it found that separate California standards and test procedures are necessary to meet compelling and extraordinary conditions. *Id.* at 23.

⁵⁶ CARB's waiver request at 13, citing 76 FR 61095 (October 3, 2011), 68 FR 19811 (April 22, 2003), and 74 FR 32744 (July 8, 2009), respectively.

(e.g., LEV III criteria pollutants, GHG, and ZEV). EPA notes that NADA did not address the preemption waiver request for the CARB LEV III standards.

In the context of considering the ACC standards individually, NADA states that EPA must reject CARB's GHG preemption waiver request because CARB's finding is premature. NADA maintains that CARB has not conducted the necessary investigation to support its protectiveness determination because EPA has now finalized its GHG emission standards. NADA claims that CARB's determination should measure the standards that exist at the time EPA makes its waiver decision. NADA contends that rather than allowing CARB to look at the program as a whole, CARB must be required to examine each standard before the Agency, including the GHG standards at issue. In the alternative, the commenter suggests that CARB's protectiveness determination is arbitrary and capricious since CARB itself cites the absence of the federal GHG standards as reason for its protectiveness determination. Finally, the commenter argues that CARB's conclusions are not backed by facts or analysis and contradict the actuality that emissions from other parts of the world and the United States affect global concentrations, and therefore concentrations in California. The Dealers state that it therefore follows that GHG concentrations in California will be reduced by a greater amount if reductions occur on a nationwide basis, rather than just statewide. Thus by definition, CARB standards for limiting GHG emissions from California cars are less protective than the applicable federal standards.

CARB's supplemental comments, in response to NADA's claims, note that California demonstrated that it was reasonable for the Board to determine that the California standards "as submitted" are, in the aggregate, as or more stringent than the applicable federal standards.⁶² CARB suggests this was a relatively simple determination at the time of CARB's June 2012 waiver request because: (1) EPA's proposed 2017–2025 MY GHG standards were not finalized; (2) EPA had not proposed or finalized a 1 mg/mile PM standard and other criteria pollutant improvements for 2015 and later MYs; and (3) EPA has no ZEV program that may achieve an additional incremental wells-to-wheels criteria pollutant reduction. CARB states that this prior and timely Board determination remains sound despite

the now finalized EPA GHG standards because (2) and (3) remain true and because EPA GHG standards: (1) do not account for upstream GHG emissions as does California's GHG program; (2) include vehicle multipliers for natural gas vehicles, effectively diluting federal standards vis a vis California's; and (3) contains relaxed criteria for GHG credits for mild hybrid-electric vehicle trucks, which also dilutes the federal standard. CARB also notes that to the extent manufacturers choose the EPA GHG standard compliance path to demonstrate compliance with California standards that results in essentially equal reductions (as stringent) of GHG emissions in California. Separately, CARB states that NADA's attempt to exclude CARB's LEV III standards from the "in the aggregate" protectiveness determination cannot be countenanced since this would render the phrase "in the aggregate" superfluous.

In addition, within CARB's Resolution 12–35, adopted on November 15, 2012, CARB addresses two issues raised by NADA's comments to EPA. CARB's Resolution 12–35 notes the question of whether the CARB Board failed to make a finding that California's passenger vehicle program remains as protective as applicable federal standards given the proposed "deemed to comply" rule on September 14, 2012 and also notes the question whether California's program is no longer as protective given the 2017 through 2025 MY National Program. First, it states that it sufficiently addressed NADA's protectiveness issues in its November 14, 2012 supplemental submittal to EPA. Within this submission, CARB noted that it was reasonable for the Board to determine that the California standards *as submitted* are, in the aggregate, as or more stringent than the applicable federal standards. CARB maintains that at the time of its June 2012 waiver submittal its protectiveness determination was a fairly simple one since EPA's 2017–2025 GHG standards were not finalized, EPA had not proposed nor finalized a 1 mg/mile PM standard and other criteria pollutant improvements for 2015 and later MYs, and EPA has no ZEV program that may achieve an additional incremental wells-to-wheels criteria pollutant reduction. CARB notes that the Board's determination remains solid despite the now finalized National Program rule because EPA still has no LEV III criteria pollutant/PM equivalent requirements and because EPA's GHG standards do not account for upstream GHG emissions as do California's, and because the National Program includes

vehicle multipliers for natural gas vehicles and relax criteria for GHG credits for mild hybrid electric vehicle trucks.

EPA also received comment regarding CARB's protectiveness determination for its ZEV standards. The Dealers suggest that CARB failed to adequately provide a protectiveness determination, and such a determination is drawn into question given CARB's stated conclusions that there is no TTW emission benefits from ZEV and that the ZEV regulation does not provide any additional GHG emission reductions beyond the GHG standards. The Dealers claim that CARB's failure to make a protectiveness determination regarding its ZEV standard is inherently arbitrary and capricious.

CARB states that contrary to NADA's assertion that it must make an individual protectiveness determination regarding its ZEV amendments CARB believes that requiring California to show that each standard (including the ZEV standard) is at least as protective in the aggregate would in effect ignore the phrase "in the aggregate" in section 209(b). CARB states that is why it made one protectiveness determination. CARB notes that purpose of the ZEV regulation is to commercialize the technologies needed to meet long term goals even beyond the emission reductions anticipated by the LEV III program.⁶³

2. Is California's protectiveness determination arbitrary and capricious?

As described above, EPA's traditional analysis has been to evaluate California's protectiveness determination by comparing the new California standards, or amendments, to applicable EPA emission standards for the same pollutants. EPA notes that the "more stringent" standard expressed in 1971 was superseded by the 1977 amendments to section 209, which established that California's standards must be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards. As noted above, this was intended to afford California the broadest possible discretion in designing its motor vehicle emission program. The comparison is undertaken within the broader context of the previously waived California program, which relies upon protectiveness determinations that EPA have previously found were not arbitrary and capricious.

⁶³ CARB's supplemental comments at 3–4. CARB also references table 6.2 of its Initial Statement of Reasons (ISOR) that details the well to wheel emissions benefits of the ZEV program compared to the LEV III program. EPA–HQ–OAR–2012–0562–0008.

⁶² CARB submitted comment on November 14, 2012 (CARB supplemental comment). EPA–HQ–OAR–2012–0562–0373.

EPA believes that the Dealers misapply our prior statement, made in EPA’s 2009 GHG waiver decision, that the most straightforward reading of the comparison called for by the statute, between California and Federal standards, is an “apples to apples” comparison.⁶⁴ The stated purpose of the “apples to apples” phrase was to determine what the “applicable” Federal standards are for purposes of evaluating a protectiveness determination, in response to comments that the federal CAFÉ standards adopted by NHTSA should be considered applicable federal standards for purposes of this wavier criterion. EPA explained in the GHG waiver decision that “The term ‘applicable’ has to refer to what Federal standards apply, and the most straightforward meaning is that they apply in the same way that the California standards apply, by setting limits on emissions of air pollutants.” Therefore, given the uniqueness of a CARB waiver request that includes interrelated standards applicable to the same vehicle category EPA believes CARB’s approach of making one protectiveness determination for its ACC program is a reasonable approach permitted under section 209(b).⁶⁵ Although section 209(b)(2) informs EPA of the conclusion it must draw if each standard is at least as stringent as the comparable federal standard, EPA notes the protectiveness determination that CARB presents in a waiver request typically includes an implicit or explicit in the aggregate protectiveness determination since CARB typically examines whether its new standards (plural) undermine previous protectiveness determinations, which EPA evaluated in prior waiver decisions. In this context, once CARB presents an in the aggregate protectiveness determination EPA believes it appropriate to initially evaluate such standards in a side-by-side comparison with applicable Federal standards and then determine whether such standards are, in the aggregate, as protective as applicable Federal standards.

In the context of CARB’s ACC standards this side-by-side analysis is simple. EPA has already determined that California was not arbitrary and capricious in its determination that the pre-existing California standards for light-duty vehicles and trucks, known as LEV II, is at least as protective as

comparable federal standards, known as the Tier II standards.⁶⁶ In this instance, CARB has finalized new and more stringent criteria pollutant standards (LEV III) while the Tier II standards remain in place at the federal level. In the absence of newer EPA standards since the time of its prior waiver for CARB’s LEV II standards there is a clear rational basis for CARB’s determination that its standards will be at least as protective of human health and welfare as applicable federal standards.

The Dealer’s comments assert that CARB’s protectiveness determination was premature because that assessment occurred before EPA finalized its own GHG emission standards. However, EPA believes that CARB’s initial protectiveness determination (submitted to EPA in CARB’s June 2012 waiver request) was not premature and was appropriate given the EPA standards in effect at that time. At the time CARB submitted its waiver request, EPA’s GHG emission standards for the 2017 through 2025 MYs were the same for those MYs as for MY 2016, while CARB’s were becoming more and more stringent over that period; therefore, CARB’s protectiveness finding was reasonable at that time.

Subsequent to EPA’s promulgation of its final GHG standards, in the context of CARB’s “deemed to comply” regulation, CARB has provided an updated protectiveness determination (see Resolution 12–35) regarding the California GHG emission standards, in terms of the underlying benefits of CARB’s program. EPA finds California to be correct in its determination that the “deemed to comply” regulation does not undermine CARB’s determination that its regulations are in the aggregate as protective as EPA’s standards. CARB’s regulation will achieve, in the aggregate, equal or even additional GHG emission reductions in California relative to federal GHG standards, even if manufacturers choose to comply with the California regulations by complying with EPA’s GHG emission standards. As noted above, EPA’s National Program standards do not account for upstream GHG emissions as do California’s and EPA’s GHG standards includes vehicle multipliers for natural gas vehicles and relax criteria for GHG credits for mild hybrid electric vehicle trucks. EPA also believes that CARB correctly notes that even with the “deemed to comply” amendments, one or more manufacturers could still choose to

continue demonstrating compliance in California under the existing California regulations. To the extent manufacturers choose EPA’s GHG standards as the compliance path—in California—the California standard, by definition would yield at least, essentially equivalent GHG reductions, so California’s standards cannot be less stringent.

The Dealers seem to suggest that with EPA’s GHG standards there will be a greater reduction of GHG emissions compared to the California GHG emission standards. California’s protectiveness determination applies only to the protectiveness of CARB’s emission standards, in California, compared to applicable federal standards. EPA believes that the Dealers ignore the obvious, that all stakeholders, including California, recognize the need for reductions of GHG emissions, as well as emissions of other pollutants, on a national basis. The federal GHG emission standards, applied in 50 states, will generally result in more emission reductions than CARB standards applied solely in California. If California were required to achieve equal emission results (with reductions counted only in California) to a federal program this would render 209(b) unusable. The relevant comparison is between the emission reductions achieved in California under the California program versus the emission reductions in California under the comparable federal program. Emissions reductions in other states are not considered, which is appropriate because the waiver decision affects only California’s emission standards, not the federal standards that exist regardless of EPA’s decision. EPA believes, and the record contains no evidence otherwise, that the reductions due to CARB’s GHG emission standards in California versus the reductions of the comparable federal GHG emission standards in California, demonstrates that CARB’s GHG emission standards are at least as protective as applicable federal standards. EPA notes that NADA raised similar arguments in the context of EPA’s within the scope waiver decision, issued on June 14, 2011, for CARB’s GHG emission amendments that included a “deemed to comply” provision for GHG emission standards during the 2012 through 2016 MYs. EPA noted “Thus, at the very least, compliance with California’s GHG standards under the revised regulations will result in the same, if not more, emission reductions than would occur in the absence of the California standards. NADA provides no evidence that CARB’s standards are less protective than the applicable Federal

⁶⁴ See 74 FR at 32750.

⁶⁵ EPA also notes that CARB has provided complete information and determinations that even in the context of comparing individual standards their standards are as protective of public health and welfare as applicable Federal standards.

⁶⁶ 68 FR 19811 (April 22, 2003) and Decision Document for Waiver of Federal Preemption for Low Emission Vehicle Amendments (LEV II) (April 11, 2003).

standards. As such, NADA fails to present any evidence or make any showing that the amendments undermine California's previous determination that its standards, in the aggregate, are at least as protective of public health and welfare as applicable Federal standards."⁶⁷

With regard to CARB's ZEV amendments EPA believes that CARB has provided a reasoned basis for their determination that the ZEV regulations are as protective of public health and welfare as comparable federal requirements, which for ZEV are nonexistent. In EPA's 2006 ZEV waiver proceeding, EPA conducted its traditional analysis to compare California's newly enacted ZEV standards to a similar lack of applicable federal standards. At that time California found, and EPA deemed reasonable, that the addition of the ZEV standards did not render California's LEV II program, for which a waiver had previously been granted, less protective than the federal Tier II program. In addressing the Alliance of Automobile Manufacturers' petition for reconsideration with respect to this issue, EPA stated that "the words 'standards' and 'in the aggregate' in section 209(b)(1)(A) * * *, at minimum, include all the standards relating to the control of emissions for a category of vehicles (e.g., passenger cars, etc.) subject to CARB regulation, particularly where the standards are designed to respond to the same type of pollution."⁶⁸ California's ZEV and GHG emission standards are an addition to its LEV program. EPA has not received any comment to suggest that the existence of either of these additional regulatory components undermines the protectiveness of CARB's LEV III emission standards. Although the Dealers suggest that "consumers facing a CARB-constrained mix at their local dealership may elect to buy a CARB-exempted brand, to purchase a late-model used vehicle, or defer vehicle purchases altogether," EPA believes that the Dealers have failed to present any legal argument as to why EPA should take this into consideration within the waiver criteria. We also find that the Dealers have failed to provide evidence, under any standard of proof, as to whether such outcomes would ultimately impair the protectiveness of

CARB's emission standards. EPA believes it is appropriate, and certainly reasonable, for CARB to evaluate its standards in the aggregate when the nature of its regulations are interrelated and the regulations are submitted to EPA as one ACC program. Although NADA suggests that CARB failed to make an individual protectiveness determination for its ZEV standards, EPA believes this is of no significance in light of the overall protectiveness of CARB's emission standards and the lack of an applicable federal ZEV program. The Dealers mere contentions, which CARB reasonably refutes in its supplement comments,⁶⁹ that there is no criteria emission benefit from the ZEV proposal in terms of TTW emissions, and that the ZEV regulation does not provide GHG emission reductions in addition to the LEV III GHG regulation, suggest no reason to find that CARB's ACC program is any less protective of public health and welfare because of the existence of such ZEV standards.

3. Section 209(b)(1)(A) Conclusion

Based on the record before EPA, we cannot find that CARB was arbitrary and capricious in its finding that the California ACC program standards, including the LEV III criteria pollutant and GHG emission standards along with its ZEV amendments are, in the aggregate, at least as protective of public health and welfare as applicable federal standards.

B. Does California need its standards to meet compelling and extraordinary conditions?

Under section 209(b)(1)(B) of the Act, EPA cannot grant a waiver if EPA finds that California "does not need such State standards to meet compelling and extraordinary conditions." EPA has traditionally interpreted this provision as requiring a consideration of whether California needs a separate motor vehicle program to meet compelling and extraordinary conditions. However in EPA's March 6, 2008 denial of CARB's GHG waiver request (GHG waiver denial), EPA limited this interpretation to California's motor vehicle standards that are designed to address local or regional air pollution problems. EPA determined that the traditional interpretation was not appropriate for standards designed to address a global air pollution problem and its effects and that it was appropriate to address such standards separately from the remainder of the program. EPA then found that California did not need such standards

to meet compelling and extraordinary conditions. The interpretation adopted in the March 6, 2008 waiver denial was before EPA for reconsideration when CARB resubmitted its GHG waiver request and EPA announced a new opportunity for hearing and public comment on February 12, 2009.⁷⁰

Set forth below is a summary of EPA's departure from the traditional interpretation of section 209(b)(1)(B) in the GHG waiver denial along with EPA's return to the traditional interpretation (confirmed today) in EPA's waiver of preemption of CARB's GHG standards on July 8, 2009 (GHG waiver).⁷¹ Because EPA received comment suggesting that CARB's GHG and ZEV standards do not meet the requirements of section 209(b)(1)(B), EPA believes it useful to recount the interpretive history associated with both GHGs and traditional local and regional air pollutants to explain why EPA believes that section 209(b)(1)(B) should be applied in the same manner for all air pollutants.

As explained below, EPA finds that the opponent of the ACC waiver has not met its burden of demonstrating why CARB no longer has a need for its motor vehicle emissions program under EPA's interpretation of section 209(b)(1)(B). Although EPA is not adopting the Dealers suggested interpretation, EPA also finds that the opponent of the waiver has not met its burden of demonstrating that CARB does not have the need for either its GHG or ZEV standards.

1. EPA's March 6, 2008 GHG Waiver Denial

In the March 6, 2008 waiver denial, EPA provided its reasoning for changing its long-standing interpretation of this provision, as it pertains to California standards designed to address global air pollution. EPA described its longstanding interpretation in some detail, stating that:

Under this approach EPA does not look at whether the specific standards at issue are needed to meet compelling and extraordinary conditions related to that air pollutant. For example, EPA reviewed this issue in detail with regard to particulate matter in a 1984 waiver decision.⁷² In that waiver proceeding, California argued that EPA is restricted to considering whether California needs its own motor vehicle program to meet compelling and extraordinary conditions, and not whether any given standard is necessary to meet such conditions. Opponents of the waiver in that proceeding argued that EPA was to consider whether California needed

⁶⁷ 76 FR 34693, 34696 (June 14, 2011).

⁶⁸ Decision Document for Waiver of Federal Preemption for California's Zero Emission Vehicle (ZEV) Standards (December 21, 2006) and EPA's August 13, 2008 Response to Petition for Administrative Reconsideration of EPA's ZEV Waiver Decision (through the 2011 Model Year) published on December 28, 2006.

⁶⁹ See CARB supplemental comments at 3-4.

⁷⁰ 74 FR 7040 (February 12, 2009).

⁷¹ 74 FR 32744 (July 9, 2009).

⁷² 49 FR 18887 (May 3, 1984).

these PM standards to meet compelling and extraordinary conditions related to PM air pollution.

The Administrator agreed with California that it was appropriate to look at the program as a whole in determining compliance with section 209(b)(1)(B). One justification of the Administrator was that many of the concerns with regard to having separate state standards were based on the manufacturers' worries about having to meet more than one motor vehicle program in the country, but that once a separate California program was permitted, it should not be a greater administrative hindrance to have to meet further standards in California. The Administrator also justified this decision by noting that the language of the statute referred to "such state standards," which referred back to the use of the same phrase in the criterion looking at the protectiveness of the standards in the aggregate. He also noted that the phrase referred to standards in the plural, not individual standards. He considered this interpretation to be consistent with the ability of California to have some standards that are less stringent than the federal standards, as long as, per section 209(b)(1)(A), in the aggregate its standards were at least as protective as the federal standards.

The Administrator further stated that in the legislative history of section 209, the phrase "compelling and extraordinary circumstances" refers to "certain general circumstances, unique to California, primarily responsible for causing its air pollution problem," like the numerous thermal inversions caused by its local geography and wind patterns. The Administrator also noted that Congress recognized "the presence and growth of California's vehicle population, whose emissions were thought to be responsible for ninety percent of the air pollution in certain parts of California."⁷³ EPA reasoned that the term compelling and extraordinary conditions "do not refer to the levels of pollution directly." Instead, the term refers primarily to the factors that tend to produce higher levels of pollution—"geographical and climatic conditions (like thermal inversions) that, when combined with large numbers and high concentrations of automobiles, create serious air pollution problems."⁷⁴

The Administrator summarized that under this interpretation the question to be addressed in the second criterion is whether these "fundamental conditions" (i.e. the geographical and climate conditions and large motor vehicle population) that cause air pollution continued to exist, not whether the air pollution levels for PM were compelling and extraordinary, or the extent to which these specific PM standards will address the PM air pollution problem.⁷⁵

However in the GHG waiver denial, EPA limited this interpretation to

California's motor vehicle standards that are designed to address local or regional air pollution problems. EPA determined that the traditional interpretation was not appropriate for standards designed to address a global air pollution problem and its effects.⁷⁶

With respect to a global air pollution problem like elevated concentrations of GHGs, EPA's GHG waiver denial found that the text of section 209(b)(1)(B) was ambiguous and did not limit EPA to this prior interpretation. In addition, EPA noted that the legislative history supported a decision to "examine the second criterion specifically in the context of global climate change." The legislative history:

[I]ndicates that Congress was moved to allow waivers of preemption for California motor vehicle standards based on the particular effects of local conditions in California on the air pollution problems in California. Congress discussed "the unique problems faced in California as a result of its climate and topography." H.R. Rep. No. 728, 90th Cong. 1st Sess., at 21 (1967). See also Statement of Cong. Holifield (CA), 113 Cong. Rec. 30942-43 (1967). Congress also noted the large effect of local vehicle pollution on such local problems. See, e.g., Statement of Cong. Bell (CA) 113 Cong. Rec. 30946. In particular, Congress focused on California's smog problem, which is especially affected by local conditions and local pollution. See Statement of Cong. Smith (CA) 113 Cong. Rec. 30940-41 (1967); Statement of Cong. Holifield (CA), id. at 30942. See also, *MEMA I*, 627 F. 2d 1095, 1109 (DC Cir., 1979) (noting the discussion of California's "peculiar local conditions" in the legislative history). Congress did not justify this provision based on pollution problems of a more national or global nature in justifying this provision.⁷⁷

Relying on this, and without any further significant discussion of either congressional intent or how this new approach properly furthered the goals of section 209(b), EPA determined that it was appropriate to:

[R]eview California's GHG standards separately from the remainder of its motor vehicle emission control program for purposes of section 209(b)(1)(B). In this context it is appropriate to give meaning to this criterion by looking at whether the emissions from California motor vehicles, as well as the local climate and topography in California, are the fundamental causal factors for the air pollution problem—elevated concentrations of greenhouse gases—apart from the other parts of California's motor

vehicle program, which are intended to remediate different air pollution concerns.

EPA then applied this interpretation to the GHG standards at issue in that waiver proceeding. Having limited the meaning of this provision to situations where the air pollution problem was local or regional in nature, EPA found that California's GHG standards do not meet this criterion. EPA also found that the elevated concentrations of GHGs in California are similar to concentrations elsewhere in the world, and that local conditions in California such as the local topography and climate and the number of motor vehicles in California are not the determinant factors causing the elevated GHG concentrations found in California and elsewhere. Thus, EPA found that California did not need its GHG standards to meet compelling and extraordinary conditions, and denied the GHG waiver.

EPA also considered an alternative interpretation, where EPA would consider "the effects in California of this global air pollution problem in California in comparison to the rest of the country, again addressing the GHG standards separately from the rest of California's motor vehicle program." Under this alternative interpretation, EPA considered whether the impacts of global climate change in California were significant enough and different enough from the rest of the country such that California could be considered to need its GHG standards to meet compelling and extraordinary conditions. EPA determined that the waiver should be denied under this alternative interpretation as well.

2. EPA's July 9, 2009 GHG Waiver

In EPA's July 9, 2009 GHG waiver, the Agency determined that the better approach was to review California's need for its new motor vehicle emissions program as a whole to meet compelling and extraordinary conditions, and not to apply this criterion to specific standards, or to limit it to standards designed to address only local or regional air pollution problems. EPA reasoned that the traditional approach to interpreting this provision was the best approach for considering a waiver directed to GHG emission standards, as well as a waiver for standards directed to address local or regional air pollution problems.⁷⁸

⁷⁶ EPA recently reaffirmed that the traditional interpretation still applied for motor vehicle standards designed to address air pollution problems that are local or regional in nature. 71 FR 78190, 78192 (December 28, 2008); see also 71 FR 78190 and Decision Document for Waiver of Federal Preemption for California Zero Emission Vehicle Standards, at 34.

⁷⁷ 73 FR at 12161.

⁷⁸ The traditional interpretation of section 209(b)(1)(B) is certainly not "unambiguous precluded" by the language of the statute. See *Entergy Corp. v. Riverkeeper, Inc.*, 129 S.Ct. 1498 (2009) ("That view governs if it is a reasonable interpretation of the statute—not necessarily the only possible interpretation, nor even the interpretation deemed most reasonable by the

⁷³ *Id.* at 18890.

⁷⁴ 73 FR 12156, 12159-60.

⁷⁵ 73 FR at 12159-60.

Therefore, EPA rejected the interpretation that was applied in the March 6, 2008 waiver denial and stated it should no longer be followed.

EPA reasoned that the traditional interpretation was the most straightforward reading of the text and legislative history of section 209(b). Congress decided in 1977 to allow California to promulgate individual standards that are not as stringent as comparable federal standards, as long as the standards are “in the aggregate, at least as protective of public health and welfare as applicable federal standards.” This decision by Congress requires EPA to allow California to promulgate individual standards that, in and of themselves, might not be considered needed to meet compelling and extraordinary circumstances, but are part of California’s overall approach to reducing vehicle emissions to address air pollution problems.

Further, we noted that EPA is to determine whether California’s protectiveness determination is arbitrary and capricious under section 209(b)(1)(A), and whether California does not need “such State standards” to meet compelling and extraordinary conditions under section 209(b)(1)(B). The natural reading of these provisions led EPA to consider the same group of standards that California considered in making its protectiveness determination. While the words “in the aggregate” are not specifically mentioned in section 209(b)(1)(B), EPA explained that it does refer to the need for “such State standards,” rather than “each State standard” or otherwise indicate a standard-by-standard analysis.

We also noted that EPA’s GHG waiver denial had determined that this provision was appropriately interpreted to consider California’s standards as a group for standards designed to address local or regional air pollution problems, but should be interpreted in the opposite fashion for standards designed to address global air pollution problems. The text of the provision, however, draws no such distinction, and provides no indication other than Congress intended a single interpretation for this provision, not one that varied based on

courts. *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 843–844 (1984). (“It seems to us, therefore, that the phrase “best available,” even with the added specification “for minimizing adverse environmental impact,” does not unambiguously preclude cost-benefit analysis.”). *Carrow v. Merit Systems Protection Board*, 564 F.3d 1359 (Fed. Cir. 2009) (“[W]e are obligated to give controlling effect to [agency’s] interpretation if it is reasonable and is not contrary to the unambiguously expressed intent of Congress”, citing *Entergy Corp.*).

the kind of air pollution problem at issue.

EPA also explained that the GHG waiver denial had considered the legislative history, and determined that Congress was motivated by concern over local conditions in California that led to local or regional air pollution problems, and from this EPA determined that Congress intended to allow California to address these kinds of local or regional air pollution problems, but no others. However, upon a reexamination of the legislative history EPA found that the determination noted above ignores the main thrust of the text and legislative history of section 209(b), and improperly reads too much into an absence of discussion of global air pollution problems in the legislative history. The structure of section 209, both as adopted in 1967 and as amended in 1977, is notable in its focus on limiting the ability of EPA to deny a waiver, and thereby preserves discretion for California to construct its motor vehicle program as it deems appropriate to protect the health and welfare of its citizens. The legislative history indicates Congress quite intentionally restricted and limited EPA’s review of California’s standards, and its express legislative intent was to “provide the broadest possible discretion [to California] in selecting the best means to protect the health of its citizens and the public welfare.”⁷⁹ The DC Circuit recognized that “[t]he history of the congressional consideration of the California waiver provision, from its original enactment up through 1977, indicates that Congress intended the State to continue and expand its pioneering efforts at adopting and enforcing motor vehicle emission standards different from and in large measure more advanced than the corresponding federal program. In short, to act as a kind of laboratory for innovation. * * * For a court [to limit California’s authority] despite the absence of such an indication would only frustrate the congressional intent.”⁸⁰

EPA also determined that it was fully consistent with the expressed intention of Congress to interpret section 209(b)(1)(B) the same way both for standards designed to address local and regional air pollution problems, and standards designed to address global air pollution problems. Congress intended to provide California the broadest possible discretion to develop its motor vehicle emissions program. Neither the

⁷⁹ H.R. Rep. No. 294, 95th Cong., 1st Sess. 301–302 (1977). See *MEMA I*, 627 F. 2d at 1110–11.

⁸⁰ *MEMA I*, 627 F. 2d at 1111.

text nor the legislative history of section 209(b) indicates that Congress intended to limit this broad discretion to a certain kind of air pollution problem, or to take away all discretion with respect to global air pollution problems.⁸¹ In addition, EPA reasoned that applying the traditional interpretation to GHG standards does not change the basic nature of the compromise established by Congress—California could act as the laboratory for the nation with respect to motor vehicle emission control, and manufacturers would continue to face just two sets of emissions standards—California’s and EPA’s.

EPA further explained that this interpretation was consistent with Congressional purpose, as compared to the interpretation adopted in the GHG waiver denial relied on the discussion in the legislative history of local conditions in California leading to air pollution problems like ozone. While this was properly read to support the view that section 209(b) should be interpreted to address California’s need for a motor vehicle program as a whole, the GHG waiver denial went further and inferred that by discussing such local conditions, Congress also intended to limit California’s discretion to only these kinds of local or regional air pollution problems. The GHG waiver denial pointed to no particular language in the legislative history or the text of section 209(b) indicating such, instead, congressional intent to limit California’s discretion was inferred from the discussion of local conditions. However, basing a limitation on such an inference is not appropriate given the express indication that Congress intended to provide California the “broadest possible discretion” in selecting the best means to protect the health of its citizens and the public welfare.

Additionally, EPA explained that the text of section 209(b) and the legislative history, when viewed as a whole, led to the conclusion that the interpretation adopted in the GHG waiver denial should be rejected. The better way to interpret this provision is to apply the traditional interpretation to the evaluation of California’s GHG standards for motor vehicles. If California needs a separate motor vehicle program to address the kinds of compelling and extraordinary conditions discussed in the traditional

⁸¹ This broad interpretation of section 209(b) is similar to the broad reading the Court provided to section 302(g) of the Clean Air Act when it held that the term “air pollutant” included greenhouse gases, rejecting among other things the argument that Congress limited the term to apply only to certain kinds of air pollution. *Massachusetts v. EPA*, 549 US 497, 532 (2007) (footnote 26).

interpretation, then Congress intended that California could have such a program. Congress also intentionally provided California the broadest possible discretion in adopting the kind of standards in its motor vehicle program that California determines are appropriate to address air pollution problems that exist in California, whether or not those problems are local or regional in nature, and to protect the health and welfare of its citizens. The better interpretation of the text and legislative history of this provision is that Congress did not intend this criterion to limit California's discretion to a certain category of air pollution problems, to the exclusion of others. In this context it is important to note that air pollution problems, including local or regional air pollution problems, do not occur in isolation. Ozone and PM air pollution, traditionally seen as local or regional air pollution problems, occur in a context that to some extent can involve long range transport of this air pollution or its precursors. This long-range or global aspect of ozone and PM can have an impact on local or regional levels, as part of the background in which the local or regional air pollution problem occurs.

EPA further stated that this approach does not make section 209(b)(1)(B) a nullity, as some had suggested. EPA must still determine whether California does not need its motor vehicle program to meet the compelling and extraordinary conditions discussed in the legislative history. If that is the case, then a waiver would be denied on those grounds, but that was not the case at that point. EPA observed that conditions in California may one day improve such that it no longer had the need for a separate motor vehicle program and that the statute contemplates that such improvement is possible. In addition, we noted that the opponents of a waiver always have the ability to raise their legal, policy, and other concerns in the State administrative process, or through judicial review in State courts. We concluded, however, that Congress provided EPA a much more limited role under section 209(b) in considering objections raised by opponents of a waiver.

3. Response to Comments Received

CARB states in its Waiver Support Document that the relevant inquiry under section 209(b)(1)(B) is whether California needs its own motor vehicle pollution control program to meet compelling and extraordinary conditions and not whether any particular standard is needed to meet such conditions. CARB notes that EPA

has consistently determined that the phrase "compelling and extraordinary conditions" refers to:

* * * Certain general circumstances, unique to California, primarily responsible for causing its air pollution [including] * * * geographical and climate factors [as well as] * * * the presence and growth of California's vehicle population, whose emissions were thought to be responsible for ninety percent of the air pollution problem in certain parts of California.

CARB also submits that the 2012 ZEV and LEV amendments (the ACC program) meet the same compelling and extraordinary conditions justifying previous waivers (e.g., the South Coast and San Joaquin Air basins continue to experience some of the worst air quality in the nation and that California has an ongoing need for dramatic emission reductions generally and from passenger cars specifically). CARB also submits that as in 1967, EPA's previous waivers have noted that California continued to have geographic and climatic conditions that, when combined with the large numbers and high concentrations of automobiles, created a serious air pollution problem.

EPA received only one comment requesting a denial of the waiver for the GHG and ZEV standards based on the grounds of section 209(b)(1)(B)—that "such State does not need such State standards to meet compelling and extraordinary conditions." This commenter raised specific objections to both the GHG and ZEV elements of CARB's ACC program but none of them addressed whether California's geographic, climactic and air quality conditions remain the same as they were under prior waiver determinations.⁸²

4. CARB's GHG Emission Standards

With regard to CARB's GHG standards, the Dealers state there is no need and no discernible environmental benefit from such standards because of EPA's GHG regulations for motor vehicles that CARB has agreed to accept as compliance for its own program. According to the commenter, this amounts to a legal admission that CARB does not need its own GHG standards. In addition, because manufacturers are already under a legal obligation to comply with the NHTSA/EPA 2017–2025 GHG standards there is no environmental benefit associated with separate CARB GHG standards. This commenter cited 1967 legislative history as support that Congress decided that federal preemption of new vehicle emission standards would be available

for California but only where California promulgated standards necessary to address "the unique problems facing the state."⁸³ Had Congress intended to give California discretion to adopt whatever standards it liked, without any consideration as to whether these standard are 'needed,' Congress would have omitted Sec. 209(b)(1)(B) altogether." This commenter also suggests that the "alternative arguments" in the 2009 GHG waiver decision, wherein California's need for its GHG standards standing alone was evaluated, should also be applied here. As such, this commenter suggests that since CARB does not intend to rely on its own regulations to meet environmental goals there can be no "rational connection" between the CARB's regulation and the state's air quality issues. Finally, the commenter notes that CARB's statement that a waiver "will remain an important backstop in the event the national program is weakened or terminated" is an identified "political need" outside the scope of Section 209.

CARB, in response to NADA's comments referenced above, states that while there may not be binding precedent that requires EPA to treat California's program as a whole in reviewing the need for specific standards, it previously has demonstrated that EPA's longstanding administrative practice to review the need for separate standard standards in the context of the ongoing compelling and extraordinary conditions justifying California's motor vehicle program remains sound.

CARB also notes that its commitment to accept compliance with the federal GHG emission standards is no different from the numerous times that EPA has followed California's lead—blazing a new trail as a laboratory for innovation—by catching up to or harmonizing with California's standards. In addition, rather than viewing CARB's actions an impermissible political backstop, CARB maintains that its actions are simply furthering the Congressional design of Section 209(b): to ensure that California can protect public health and welfare by ensuring its ability to separately implement and enforce necessary emission reductions through its own regulatory mechanisms. Therefore CARB can continue to set standards that in the first instance are more stringent, then may become as stringent and subsequently—under the NADA hypothetical—become more stringent should EPA lessen the stringency of the

⁸² NADA at 7–9, 12–14.

⁸³ H.R. Rep. No. 90–728 (1967), at 22.

federal GHG emission standards. In addition, CARB points to NADA's concession by acknowledging that CARB's standards must be as or more stringent—i.e., as protective as—the federal standards.

As discussed above, EPA believes that the better interpretation of the section 209(b)(1)(B) criterion is the traditional approach of evaluating California's need for a separate motor vehicle emission program to meet compelling and extraordinary conditions. Applying this approach with the reasoning noted above, with due deference to California, I cannot deny the waiver.

CARB has repeatedly demonstrated the need for its motor vehicle program to address compelling and extraordinary conditions in California. As discussed above, the term compelling and extraordinary conditions "does not refer to the levels of pollution directly." Instead, the term refers primarily to the factors that tend to produce higher levels of pollution—geographical and climatic conditions (like thermal inversions) that, when combined with large numbers and high concentrations of automobiles, create serious air pollution problems. California still faces such conditions. For example, as stated in CARB's waiver request and additional written comment, California and particularly the South Coast and San Joaquin Valley Air Basins continue to experience some of the worst air quality in the nation and continue to be in non-attainment with national ambient air quality standards (NAAQS) for PM_{2.5} and ozone.⁸⁴ In its recent announcement of new PM_{2.5} ambient air quality standards, EPA projected that only seven of approximately 3,000 counties in the country may require state or local action to reduce fine particle pollution in order to meet the new standards by 2020. All seven counties are in California.

Further, EPA has not received any adverse comments suggesting that California no longer needs a separate motor vehicle emissions program to address the various conditions that lead to serious and unique air pollution problems in California.

Based on the record, I am unable to identify any change in circumstances or any evidence to suggest that the conditions that Congress identified as giving rise to serious air quality problems in California no longer exist. Therefore, using the traditional approach of reviewing the need for a separate California program to meet compelling and extraordinary conditions, I cannot deny the ACC

waiver request (including the GHG and ZEV components, along with LEV III criteria pollutants) based on this criterion.

To the extent that it is appropriate to examine the need for CARB's GHG standards to meet compelling and extraordinary conditions, as EPA discussed at length in its 2009 GHG waiver decision, California does have compelling and extraordinary conditions directly related to regulations of GHG. EPA's prior GHG waiver contained extensive discussion regarding the impacts of climate change in California.⁸⁵ In addition, CARB has submitted additional evidence in comment on the ACC waiver request that evidences sufficiently different circumstances in California.⁸⁶ CARB notes that "Record-setting fires, deadly heat waves, destructive storm surges, loss of winter snowpack—California has experienced all of these in the past decade and will experience more in the coming decades. California's climate—much of what makes the state so unique and prosperous—is already changing, and those changes will only accelerate and intensify in the future. Extreme weather will be increasingly common as a result of climate change. In California, extreme events such as floods, heat waves, droughts and severe storms will increase in frequency and intensity. Many of these extreme events have the potential to dramatically affect human health and well-being, critical infrastructure and natural systems."⁸⁷ CARB provides a summary report on the third assessment from the California Climate Change Center (2012)⁸⁸ which describes dramatic sea level rises and increases in temperatures. The Commenter does not take issue with that analysis, but instead relies on the existence of the federal GHG standards and the "deemed to comply" language to claim that there is no need for CARB's GHG standards. Separate from EPA's stated interpretation and determinations noted above, EPA believes that the commenter does not appropriately appreciate the role that Congress envisioned California to play as an innovative laboratory that may set standards that EPA may ultimately harmonize with or that California or EPA may otherwise accept compliance with the others emission program as

compliance with their own. EPA's longstanding interpretation of section 209(b)(1)(B) is that EPA does not look at whether the specific standards at issue are needed to meet compelling and extraordinary conditions related to that air pollutant. As explained above, EPA reviewed this issue in some detail in both EPA's 2008 GHG waiver denial and subsequent 2009 GHG waiver decision and EPA continues to believe that our traditional interpretation is appropriate. The structure of section 209, both as adopted in 1967 and as amended in 1977, is notable in its focus on limiting the ability of EPA to deny a waiver, and thereby preserves discretion for California to construct its motor vehicle program as it deems appropriate to protect the health and welfare of its citizens.⁸⁹ EPA has previously considered NADA's argument that CARB no longer has a need for its GHG emission standards once CARB adopts a "deemed to comply" provision. In EPA's within the scope decision in 2011, where EPA considered CARB's previous "deemed to comply" provision applicable to the 2012 through 2016 MYs, EPA stated:

NADA's comments do not indicate that, as a result of the amendments, California no longer needs a separate motor vehicle emissions program to address compelling and extraordinary conditions in California, or provide any indication that EPA's prior determination on this issue is undermined in any way. Therefore, its comments do not show that California's amendments raise any new issues relevant to EPA's initial waiver decision.

Moreover, although NADA's comments reference the words of the section 209(b)(1)(B), "need * * * to meet compelling and extraordinary circumstances" criterion, they do not appear to be directed towards the geographical or climatological conditions that are being referred to by the words "compelling and extraordinary circumstances." Instead, NADA's comments appear to be directed at the stringency of the greenhouse gas standards. The stringency of California's standards is at issue in section 209(b)(1)(A), where Congress addressed the comparison of California standards to federal standards, but it is not an issue under section 209(b)(1)(B). As noted in EPA's underlying waiver decision, section 209(b)(1)(A) calls for a review of California standards "in the aggregate," and EPA can only deny a waiver if it finds that California was arbitrary and capricious in its finding that "its standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards." EPA notes that the language of section 209(b)(1)(A) clearly indicates Congress's determination that EPA review the effect of stringency on the protectiveness of California's standards "in

⁸⁹ See H.R. Rep. No. 294, 95th Cong., 1st Sess. 301-302 (1977).

⁸⁵ 74 FR 32744, 32764-7265.

⁸⁶ EPA-HQ-OAR-2012-0562-0371.

⁸⁷ *Id.*

⁸⁸ Our Changing Climate 2012 Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. Publication # CEC-500-2012-007. Posted: July 31, 2012; available at http://www.climatechange.ca.gov/adaptation/third_assessment/.

⁸⁴ 76 FR 40652, 40654 (July 11, 2011).

the aggregate,” and that EPA cannot deny a waiver on the grounds of protectiveness if California standards are at least equally protective as Federal standards. “Redundancy” is not the criterion; it is whether California’s standards are, in the aggregate, at least as protective as applicable Federal standards. Furthermore, NADA does not address California’s standards “in the aggregate” and, as noted above, does not provide any evidence to suggest, even with regard to California’s greenhouse gas standards, that California was arbitrary and capricious in its finding that its standards are at least as protective as comparable federal standards. The stringency issue raised by NADA is not relevant under section 209(b)(1)(B), and it would be inconsistent with the intent of Congress to deny a waiver or a within-the-scope determination based on section 209(b)(1)(B) for reasons Congress clearly addressed and clearly determined should not be the basis for a denial under section 209(b)(1)(A). NADA’s comments, therefore, do not raise any new issues regarding our preexisting waiver for California greenhouse gas emission standards.⁹⁰

EPA believes this interpretation of section 209(b)(1)(B) continues to be appropriate and therefore finds that CARB’s GHG emission standards cannot be denied a waiver based on NADA’s argument that there is no need for such standards given the existence of EPA GHG emission standards.

5. CARB’s ZEV Emission Standards

The Dealers also requested that EPA deny a waiver of CARB’s ZEV standards for MY 2018 and beyond because they were not necessary to meet compelling and extraordinary circumstances, under the section 209(b)(1)(B) criterion.⁹¹ According to the commenter, the “compelling and extraordinary conditions” in California today are nothing like they were when Congress first enacted section 209. In addition, the commenter notes that CARB claims no criteria emissions benefit from the ZEV standards in terms of vehicle TTW emissions and subsequently notes several problems with CARB’s upstream WTW emissions analysis and projected benefits. For example, the commenter disputes CARB’s assumptions that reductions of fuel production by refineries will result from reductions in fuel consumption by the vehicle fleet in California. According to the commenter, refineries in California could simply shift fuel production to address either off-shore or out-of state needs. The commenter further states that CARB has not and cannot show that its ZEV standards will achieve any reductions in criteria pollutants. With respect to the

relationship between the GHG and ZEV programs, the commenter also states that the ZEV standards do not provide any additional GHG emission benefits beyond the underlying GHG standards and the ZEV standards are therefore not necessary to meet any potential compelling and extraordinary conditions associated with GHG emissions from new motor vehicles. In addition, the commenter suggests that because CARB is providing a variety of compliance flexibilities, including over compliance with GHG standards producing ZEV credits and other alternative compliance path options, confirms that the underlying ZEV mandates are not “necessary.”

CARB notes in its written response that to the extent commenters question California’s need for additional criteria pollutant reductions from its new motor vehicle fleet, there remains no question that such reductions are essential to meet federal health-based ambient air quality standards. CARB notes that California and particularly the South Coast and San Joaquin Valley Air Basins continue to experience some of the worst air quality in the nation and continue to be in non-attainment with national ambient air quality standards (NAAQS) for PM_{2.5} and ozone.⁹² California’s unique geographical and climatic conditions, and the tremendous growth in its on- and off-road vehicle population, which moved Congress to authorize the state to establish separate on-road motor vehicle standards in 1967 and off-road engine standards in 1990, still exist today.⁹³ In addition, CARB provides extensive evidence of its current and serious air quality problems and the increasingly stringent health-based air quality standards and federally required state planning efforts to meet those standards firmly in order to establish the need for the additional emission reductions from its motor vehicle emissions program.⁹⁴

As stated above, EPA believes that the better interpretation of the section 209(b)(1)(B) criterion is the traditional approach of evaluating California’s need for a separate motor vehicle emission program to meet compelling and extraordinary conditions. The issue of whether any particular standard provides comparable emission reductions is not a relevant criterion under section 209(b)(1)(B). Applying this approach with the reasoning noted

above, with due deference to California, I cannot deny the waiver.

As discussed in their written comments, CARB has repeatedly demonstrated the need for its motor vehicle program to address compelling and extraordinary conditions in California. As discussed above, the term compelling and extraordinary conditions “does not refer to the levels of pollution directly. Instead, the term refers primarily to the factors that tend to produce higher levels of pollution—geographical and climatic conditions (like thermal inversions) that, when combined with large numbers and high concentrations of automobiles, create serious air pollution problems. California still faces such conditions. For example, California and particularly the South Coast and San Joaquin Valley Air Basins continue to experience some of the worst air quality in the nation and continue to be in non-attainment with national ambient air quality standards (NAAQS) for PM_{2.5} and ozone.⁹⁵ In addition, EPA believes, and the record does not otherwise indicate, the underlying geographical and climatic conditions continue to exist in California and continue to give rise to serious air quality problems.

EPA has not received any adverse comments suggesting that California no longer needs a separate motor vehicle emissions program to address the various conditions that lead to serious and unique air pollution problems in California.

Based on the record, I am unable to identify any change in circumstances or any evidence to suggest that the conditions that Congress identified as giving rise to serious air quality problems in California no longer exist. Therefore, using the traditional approach of reviewing the need for a separate California program to meet compelling and extraordinary conditions, I cannot deny the ACC waiver request (including the GHG and ZEV components, along with LEV III criteria pollutants) based on this criterion.

As CARB notes in its waiver request, the goal of the CARB Board in directing CARB staff to redesign the ZEV regulation was to focus primarily on zero emission drive—that is BEV, FCV, and PHEVs in order to move advanced, low GHG vehicles from demonstration phase to commercialization. CARB also analyzed pathways to meeting California’s long term 2050 GHG reduction targets in the light-duty vehicle sector and determined that ZEVs would need to reach nearly 100 percent

⁹² 76 FR 40652, 40654 (July 11, 2011). CARB waiver request at 17–18.

⁹³ 74 FR 32744, 32762 (July 8, 2009); 76 FR 77515, 77518 (December 13, 2011).

⁹⁴ EPA–HQ–OAR–2012–0562–0371.

⁹⁵ 76 FR 40652, 40654 (July 11, 2011).

of new vehicle sales between 2040 and 2050. CARB also notes that the “critical nature of the LEV III regulation is also highlighted in the recent effort to take a coordinated look at strategies to meet California’s multiple air quality and climate goals well into the future. This coordinated planning effort, *Vision for Clean Air: A Framework for Air Quality and Climate Planning (Vision for Clean Air)*⁹⁶ demonstrates the magnitude of the technology and energy transformation needed from the transportation sector and associated energy production to meet federal standards and the goals set forth by California’s climate change requirements. In addition to considering the level of change needed to implement the current SIP and reduce GHG emissions by 80 percent below 1990 levels by 2050, the 2032 attainment date for the 0.075 ppm standard set in 2008 was used as an interim target. Adopted or pending rules, such as the LEV III regulation, were considered essential as baseline reductions assumed for the future, yet California identified still more transformative changes to achieve the 2032 and 2050 targets. The *Vision for Clean Air* effort illustrates that in addition to the cleanup of passenger vehicles (at issue here) as soon as possible as required in the LEV III regulation, transition to zero- and near-zero emission technologies in all on- and off-road engine categories is necessary to achieve the coordinated goals.

Therefore, EPA believes that CARB’s 2018 and later MY ZEV standards represent a reasonable pathway to reach these longer term goals. Under EPA’s traditional practice of affording CARB the broadest discretion possible, and deferring to CARB on its policy choices, we believe there is a rational connection between California ZEV standards and its attainment of long term air quality goals. Whether or not the ZEV standards achieve additional reductions by themselves above and beyond the LEV III GHG and criteria pollutant standards, the LEV III program overall does achieve such reductions, and EPA defers to California’s policy choice of the appropriate technology path to pursue to achieve these emissions reductions. The ZEV standards are a reasonable pathway to reach the LEV III goals, in the context of California’s longer term goals.

⁹⁶ EPA-HQ-OAR-2012-0562-0371 at 5-6, citing *Vision for Clean Air: A Framework for Air Quality and Climate Planning*, June 27, 2012,

6. CARB’s PM Standards

EPA received comments suggesting that the PM standards promulgated within California’s LEV III regulation were infeasible. The Manufacturers in particular commented that the technological feasibility of the one milligram per mile PM standard, that commences its phase in starting with the 2025 MY, has not been demonstrated (this issue is discussed below in the Section VI). The Manufacturers appear to raise issue with whether additional PM emission reductions from light-duty vehicles are needed since they represent so small a fraction of the PM inventory in California. CARB’s supplemental comments assert that “while PM emission from LDVs are not a major contributor to the inventory, they are a significant contributor to urban pollution and human exposure, particularly near heavily travelled roadways, many of which are located in major urban centers in areas classified as non-attainment for health based PM ambient air quality standards.” CARB also notes that the exact amount of pollution reduced through any given emission standard and the cost-effectiveness of any particular California standards are not waiver criteria and therefore not relevant to EPA’s determination.

EPA does not believe that it is necessarily the Manufacturers’ contention that the PM standards are not needed to meet compelling and extraordinary conditions. Nevertheless, EPA believes it appropriate to note, once again, that the compelling and extraordinary conditions Congress identified as giving rise to serious air quality problems continue to give rise to the need for a separate California new motor vehicle emissions program. EPA believes this includes CARB’s serious PM air quality problems. EPA agrees that the PM standards will result in reductions in PM emissions, however small. It is not appropriate for EPA to second-guess CARB’s policy choices, including how best to address their air quality concerns.

7. Section 209(b)(1)(B) Conclusion

With respect to the need for California’s state standards to meet compelling and extraordinary conditions, I continue to apply the traditional interpretation of the waiver provision. As stated in the GHG waiver decision,⁹⁷ the best way to interpret this provision is to determine whether

⁹⁷ 74 FR 32766. EPA incorporates this prior GHG waiver decision, and associated reasoning and interpretations, into today’s waiver decision.

California continues to have compelling and extraordinary conditions giving rise to a need for its own new motor vehicle emission program. Congress did not use this criterion to limit California’s discretion to a certain category of air pollution problems, nor does EPA believe this criterion limits California’s discretion to adopt or retain emission standards that are similar to EPA’s standards. In addition, it is inappropriate for EPA to second guess CARB’s policy choices and objectives in adopting ZEV standards designed to achieve long term emission benefits as well as projected to reasonably achieve some reduction in criteria pollutant emissions.

Under this interpretation and application of this criterion, EPA cannot find that the opponents of the waiver have demonstrated that California does not need its state standards to meet compelling and extraordinary conditions. The opponents of the waiver have not adequately demonstrated that California no longer has a need for its motor vehicle emission program. Therefore, I determine that I cannot deny CARB’s ACC waiver request under section 209(b)(1)(B).

C. Are the California ACC standards consistent with Section 202(a) of the Clean Air Act?

EPA has reviewed the information submitted to the record of this proceeding to determine whether the parties opposing, or seeking a deferral of, this waiver request have met their burden to demonstrate that the ACC standards are not consistent with section 202(a). In its initial Waiver Request, CARB submitted information and argument that the ACC standards are consistent with section 202(a). CARB notes that in developing the LEV III requirements it considered several factors (e.g., technical feasibility, lead time available to meet the requirements, and the cost of compliance and the technical and resource challenges manufacturers face in complying with the requirement to simultaneously reduce criteria and GHG emissions). CARB notes that that criteria emissions elements of LEV III occur over an 11-year period (2015 through 2025) while the GHG emission element is implemented over a 9-year period from 2017 through 2025. CARB sets forth its belief that both the stringency and implementation schedules for its PM standards are technologically feasible within the available lead time. With regard to LEV III GHG regulations, CARB noted that California coordinated with the EPA and NHTSA on technical and economic areas, and CARB has

moved in parallel with the federal rulemaking in terms of stringency of the standards and lead time for compliance. CARB maintains that the standards and lead time are technologically feasible “even before CARB proposes to amend its LEV III GHG regulations to allow National Program compliance to serve as compliance in California. It will be undeniably true should California adopt its “deemed to comply” rule as planned.”⁹⁸ With regard to the ZEV amendments, CARB noted the lack of objections from the regulated parties during CARB’s rulemaking and the regulated parties’ announcements of their planned ability to comply.

The Manufacturers have submitted information and argument that their members see no way to measure and meet the 1 mg/mile PM standard beginning in 2025 (as part of the LEV III standards) and ask EPA to withhold issuing a waiver for this standard at this time. The Manufacturers have commented that they do not oppose California’s GHG emission standards for the 2017 through 2025 MYs but suggests that EPA should grant California’s waiver request after CARB has finalized its regulatory amendments to allow for a national compliance option.⁹⁹ Finally, while the Manufacturers agree that CARB’s ZEV amendments, as they affect 2017 and earlier MYs, are within the scope of existing waivers, they are opposed to granting the waiver for the ZEV program past the 2017 MY based on argument that those standards will not be feasible either in California or in the individual Section 177 States given the status of the infrastructure and the level of consumer demand for ZEVs.

EPA also received comment from the Dealers suggesting that EPA should not grant California a waiver for its GHG emission standards past MY 2021 since the technical capabilities after that time are uncertain. In addition, like the Manufacturers, NADA does not oppose CARB’s ZEV amendments through the 2017 MY. However, NADA believes CARB’s ZEV amendments, as they affect 2018 and later MYs, raise serious

⁹⁸ At the time of CARB’s waiver request EPA’s GHG emission rule had not yet been finalized. Subsequent to EPA’s final rule CARB has adopted the deemed to comply and has provided the regulation for EPA’s consideration. See also CARB Resolution 12–11 at 20.

⁹⁹ The Manufacturers note that both the federal and the California GHG emission standards provide for a comprehensive mid-term evaluation of the MYs 2022–2025. Therefore, the Manufacturers clearly state that “Any amendments to California’s GHG emission standards made as a result of the mid-term evaluation will require analysis to determine whether the amendments fall within the scope of this waiver, or, if not, whether they qualify for a separate waiver under Section 209(b) of the Clean Air Act.

technological feasibility concerns including their economic feasibility (including their marketability when compared to non-ZEV vehicles). EPA’s analysis of the consistency of the CARB standards with section 202(a) of the Act follows.

1. Historical Approach

Under section 209(b)(1)(C), EPA must deny California’s waiver request if the Agency finds that California standards and accompanying enforcement procedures are not consistent with section 202(a) of the Act. The scope of EPA’s review under this criterion is narrow. EPA has previously stated that the determination is limited to whether those opposed to the waiver have met their burden of establishing that California’s standards are technologically infeasible, or that California’s test procedures impose requirements inconsistent with the federal test procedure.¹⁰⁰ Previous waivers of federal preemption have stated that California’s standards are not consistent with section 202(a) if there is inadequate lead time to permit the development of technology necessary to meet those requirements, giving appropriate consideration to the cost of compliance within that time.¹⁰¹ California’s accompanying enforcement procedures would be inconsistent with section 202(a) if the federal and California test procedures conflict, i.e., if manufacturers would be unable to meet both the California and federal test requirements with the same test vehicle.¹⁰²

EPA does not believe that there is any reason to review these criteria any differently for EPA’s evaluation of California’s ACC program request. There is nothing inherently different about how ACC control technologies should be reviewed when making a determination about technological feasibility or consistency of test procedures.

In the ACC waiver proceeding, opponents of the waiver have presented evidence for EPA’s consideration which they believe will require EPA to make the finding of inconsistency with section 202(a), and therefore require EPA to deny or defer granting all or parts of the waiver request (e.g., a

¹⁰⁰ *MEMA I*, 627 F.2d at 1126.

¹⁰¹ See e.g., 38 FR 30136 (November 1, 1973) and 40 FR 30311 (July 18, 1975).

¹⁰² To be consistent, the California certification test procedures need not be identical to the Federal test procedures. California procedures would be inconsistent, however, if manufacturers would be unable to meet both the state and Federal test requirements with the same test vehicle in the course of the same test. See, e.g., 43 FR 32182, (July 25, 1978).

deferral on the 2025 and later MY phase-in of the 1 mg/mile PM standard of LEV III, a denial of the GHG emission standards for MY 2022 and later, and a denial of the 2018 through 2025 MY ZEV requirements or a deferral on the 2021 and later MYs). As noted above, the commenters believe this finding should be made on one or more grounds, including: there exists either a lack of information or certainty of technological solutions based on the remoteness in time from the implementation of the standards; that there are questions of economic feasibility and marketability, including consumer demand; that technological consistency must include consideration of feasibility in section 177 states; and, that either the cost effectiveness of certain standards is unreasonable or that the standards are not needed for air quality purposes. EPA’s process for evaluating lead time is discussed immediately below and in subsequent parts of this section. The industry opponents also raise arguments based on the cost of compliance with the standards (including cost-effectiveness), which will be discussed below and in other parts of this section. To the extent the commenters raise questions about the need for CARB’s PM standards and that it could be the basis for EPA’s waiver consideration, we address such concerns in the discussion above concerning section 209(b)(1)(B). EPA has already addressed the Dealers suggestions that CARB’s ZEV requirements are not needed within the same discussion.

Regarding lead time, EPA historically has relied on two decisions from the U.S. Court of Appeals for the D.C. Circuit for guidance regarding the lead time requirements of section 202(a). Section 202(a) provides that an emission standard shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance. In *Natural Resources Defense Council v. EPA (NRDC)*, 655 F.2d 318 (DC Cir. 1981), the court reviewed claims that EPA’s PM standards for diesel cars and light trucks were either too stringent or not stringent enough. In upholding the EPA standards, the court concluded:

Given this time frame [a 1980 decision on 1985 model year standards]; we feel that there is *substantial room for deference* to the EPA’s expertise in projecting the likely course of development. The essential question in this case is the pace of that development, and absent a revolution in the study of industry, defense of such a projection can never possess the inescapable

logic of a mathematical deduction. We think that the EPA will have demonstrated the reasonableness of its basis for projection if it answers any theoretical objections to the [projected control technology], identifies the major steps necessary in refinement of the technology, and offers plausible reasons for believing that each of those steps can be completed in the time available (emphasis added).¹⁰³

Another key case addressing the lead time requirements of section 202(a) is *International Harvester v. Ruckelshaus* (*International Harvester*), 478 F.2d 615 (DC Cir. 1979). In *International Harvester*, the court reviewed EPA's decision to deny applications by several automobile and truck manufacturers for a one-year suspension of the 1975 emission standards for light-duty vehicles. In the suspension proceeding, the manufacturers presented data which, on its face, showed little chance of compliance with the 1975 standards, but which, at the same time, contained many uncertainties and inconsistencies regarding test procedures and parameters. In a May 1972 decision, the Administrator applied an EPA methodology to the submitted data, and concluded that "compliance with the 1975 standards by application of present technology can probably be achieved," and so denied the suspension applications.¹⁰⁴ In reviewing the Administrator's decision, the court found that the applicants had the burden of coming forward with data showing that they could not comply with the standards, and if they did, then EPA had the burden of demonstrating that the methodology it used to predict compliance was sufficiently reliable to permit a finding of technological feasibility. In that case, EPA failed to meet this burden.

With respect to lead time, the court in *NRDC* pointed out that the court in *International Harvester* "probed deeply into the reliability of EPA's methodology" because of the relatively short amount of lead time involved (a May 1972 decision regarding 1975 MY vehicles, which could be produced starting in early 1974), and because "the hardship resulting if a suspension were mistakenly denied outweigh the risk of a suspension needlessly granted."¹⁰⁵ The *NRDC* court compared the suspension proceedings with the circumstances concerning the diesel standards before it: "The present case is quite different; 'the base hour' for commencement of production is

relatively distant, and until that time the probable effect of a relaxation of the standard would be to mitigate the consequences of any strictness in the final rule, not to create new hardships."¹⁰⁶ The *NRDC* court further noted that *International Harvester* did not involve EPA's predictions of future technological advances, but an evaluation of presently available technology.

EPA also evaluates CARB's request in light of congressional intent regarding the waiver program generally. This is consistent with the motivation behind section 209(b) to foster California's role as a laboratory for motor vehicle emission control, in order "to continue the national benefits that might flow from allowing California to continue to act as a pioneer in this field."¹⁰⁷

For these reasons, EPA believes that California must be given substantial deference when adopting motor vehicle emission standards which may require new and/or improved technology to meet challenging levels of compliance. This deference was discussed in an early waiver decision when EPA approved the waiver request for California's 1977 MY standards:

Even on this issue of technological feasibility I would feel constrained to approve a California approach to the problem which I might also feel unable to adopt at the Federal level in my own capacity as a regulator. The whole approach of the Clean Air Act is to force the development of new types of emission control technology where that is needed by compelling the industry to 'catch up' to some degree with newly promulgated standards. Such an approach to automotive emission control might be attended with costs, in the shape of a reduced product offering, or price or fuel economy penalties, and by risks that a wider number of vehicle classes may not be able to complete their development work in time. Since a balancing of these risks and costs against the potential benefits from reduced emissions is a central policy decision for any regulatory agency, under the statutory scheme outlined above I believe I am required to give very substantial deference to California's judgment on that score."¹⁰⁸

CARB, while maintaining that the *NRDC* approach is the correct measurement here, commented that the technological sophistication of ZEVs currently being produced is anticipated to continue to advance, making commercial production and compliance of these vehicles by MY 2018 and later

more feasible. CARB also notes that the only relevance of costs in a section 209(b) waiver proceeding is in the context of technological feasibility. "Past waiver determinations have made clear that for the cost of compliance to be found excessive it would need to be "very high" such that the cost to customers who purchased a complying vehicle would be doubled or tripled.¹⁰⁹ Additionally, the relevance of the cost of compliance analysis is limited to the question of whether such costs will adversely affect the timing of an emission standard."¹¹⁰

Under *NRDC*, when compliance with CARB standards is phased-in over a lengthy time period, the reasonableness of a projection of technological feasibility can be based on answering any theoretical objections to the projected control technology; identifying the major steps necessary in refinement of the technology; and offering plausible reasons for believing that each of those steps can be completed in the time available.¹¹¹ EPA's review of the evidence on the technological feasibility of CARB's ACC standards, in particular the standards which EPA received comment, follows.

Congress has stated that the consistency requirement of section 202(a) relates to technological feasibility.¹¹² Section 202(a)(2) states, in part, that any regulation promulgated under its authority "shall take effect after such period as the Administrator finds necessary to permit the development and application of the relevant technology, considering the cost of compliance within that time." Section 202(a) thus requires the Administrator to first review whether adequate technology already exists, or if it does not, whether there is adequate time to develop and apply the technology before the standards go into effect.

In *MEMA I*, the court addressed the cost of compliance issue at some length in reviewing a waiver decision. According to the court:

Section 202's cost of compliance concern, juxtaposed as it is with the requirement that the Administrator provide the requisite lead

¹⁰⁹ 74 FR 32744, 32774 (July 8, 2009).

¹¹⁰ CARB's waiver request at 25-26. *MEMA I*, 627 F.2d at 1105, 1114 n. 40 ("[T]he 'cost of compliance' consideration relates to the timing of standards and procedures.") CARB notes that EPA has recognized that the only relevance of costs is their impact on timing, e.g. "Manufacturers do not contend that the cost of compliance will be significantly reduced by extending lead time beyond the minimal period required for compliance." (36 FR 17459 (August 31, 1971)).

¹¹¹ *NRDC*, 655 F.2d 318, 331.

¹¹² H.R. Rep. No. 95-294, 95th Cong., 1st Sess. 301 (1977).

¹⁰³ *Natural Resources Defense Council v. EPA*, 655 F.2d 318, 331. (emphasis added)

¹⁰⁴ *International Harvester v. Ruckelshaus*, 478 F.2d 615, 626.

¹⁰⁵ *NRDC*, 655 F.2d 318, 330.

¹⁰⁶ *Id.* The "hardships" referred to are hardships that would be created for manufacturers able to comply with the more stringent standards being relaxed late in the process.

¹⁰⁷ 40 FR 23102, 23103 (waiver decision citing views of Congressman Moss and Senator Murphy) (May 28, 1975).

¹⁰⁸ *Id.* at 23103.

time to allow technological developments, refers to the economic costs of motor vehicle emission standards and accompanying enforcement procedures. *See* S. Rep. No. 192, 89th Cong., 1st Sess. 5–8 (1965); H.R. Rep. No. 728 90th Cong., 1st Sess. 23 (1967), *reprinted in* U.S. Code Cong. & Admin. News 1967, p. 1938. It relates to the timing of a particular emission control regulation rather than to its social implications. Congress wanted to avoid undue economic disruption in the automotive manufacturing industry and also sought to avoid doubling or tripling the cost of motor vehicles to purchasers. It, therefore, requires that the emission control regulations be technologically feasible within economic parameters. Therein lies the intent of the cost of compliance requirement (emphasis added).¹¹³

Previous waiver decisions are fully consistent with *MEMA I*, which indicates that the cost of compliance must reach a very high level before the EPA can deny a waiver. Therefore, past decisions indicate that the costs must be excessive to find that California's standards are inconsistent with section 202(a).¹¹⁴ It should be noted that, as with other issues related to the determination of consistency with section 202(a), the burden of proof regarding the cost issue falls upon the opponents of the grant of the waiver.

Consistent with *MEMA I*, the Agency has evaluated costs in the waiver context by looking at the actual cost of compliance in the time provided by the regulation, not the regulation's cost-effectiveness. The appropriate level of cost-effectiveness is a policy decision of California that is considered and made when California adopts the regulations, and EPA, historically, has deferred to these policy decisions. EPA has stated in this regard, "the law makes it clear that the waiver request cannot be denied unless the specific findings designated in the statute can be made. The issue of whether a proposed California requirement is likely to result in only marginal improvement in air quality not commensurate with its cost or is otherwise an arguably unwise exercise of regulatory power is not legally pertinent to my decision under section 209 * * *."¹¹⁵ Thus, EPA will look at the compliance costs for manufacturers in developing and applying the technology and not at cost effectiveness when making a waiver decision.

¹¹³ *MEMA I* at 1118 (emphasis added). *See also id.* at 1114 n. 40 (A[T]he 'cost of compliance' criterion relates to the timing of standards and procedures.).

¹¹⁴ *See, e.g.*, 47 FR 7306, 7309 (Feb. 18, 1982), 43 FR 25735 (Jun. 14, 1978), and 46 FR 26371, 26373 (May 12, 1981).

¹¹⁵ 36 FR 17158 (August 31, 1971). *See also* 40 FR 23102, 23104; 58 FR 4166 (January 7, 1993), LEV Waiver Decision Document at 20.

2. LEV III Criteria Pollutant Standards

California has adopted new standards for exhaust emissions of non-methane organic gases (NMOG), NO_x, and PM, as well as evaporative emissions standards. These standards phase in beginning with MY 2015. The LEV III standards are similar, in many respects, in structure to those in the existing federal Tier 2 program. As with the Tier 2 program, the proposed standards would apply to all light-duty vehicles (LDVs), or passenger cars, light-duty trucks (LDT1s, LDT2s, LDT3s, and LDT4s) below 8,500 pounds GVWR (Gross Vehicle Weight Rating), and Medium-Duty Passenger Vehicles, or MDPVs (8,500 to 10,000 lbs GVWR). Based on our review of the LEV III criteria pollutant standards, and because EPA did not receive any comments objecting to CARB's LEV III criteria pollutant standards, with the exception of the PM standard issue discussed below, we find it unnecessary to provide a full written review whether such standards are consistent with section 202(a), as those opposing the waiver have clearly not met their burden regarding the issue, and we otherwise cannot make a finding that such standards are inconsistent with section 202(a).

a. Particulate Matter Standards

The Manufacturers generally note that testing for and complying with the revised particulate matter standards will present significant burdens on the industry. In short, the Manufacturers recommend that EPA withhold issuing a waiver for the MY 2025 PM standard. While noting that the phase in of the 3 mg/mile FTP PM standard beginning in MY 2017 will be very challenging, they nevertheless state that the Manufacturers are optimistic that vehicles will achieve this level with time. Recognizing that there are long lead time changes, the Manufacturers appear to be agreeing with CARB's planned phased-in approach starting in the 2017 MY. Also, the Manufacturers are not objecting to EPA issuing a waiver for the 3 mg/mile PM standards based on their stated testing concerns.

However, the Manufacturers believe the 1 mg/mile PM standard, which begins its phase-in starting in the 2025 MY, raises further feasibility issues. Based on their knowledge of PM measurement and vehicle PM control technology, the Manufacturers state that their members "see no way to both measure and meet this standard." The Manufacturers believe that setting a standard that is unachievable today is inappropriate, and they do not believe

EPA should issue a waiver for these standards at this time.

Finally, the Manufacturers note that there is ample time to revisit the waiver request without interfering with CARB's implementation of standards should they be deemed feasible (during CARB's planned review of the standard).

CARB's supplemental comments note that the LEV III PM standards are based on a particular concern for their impact on public health and safety. As noted in their LEV III Technical Support Document, CARB acknowledges that while PM emissions from LDVs are not a major contributor to the inventory, they are a significant contributor to urban pollution and human exposure. CARB also notes that the exact amount of pollution reduced and the cost-effectiveness of particular California standards is not relevant to EPA's waiver determination.

What is relevant, CARB maintains, is that thirteen years of lead time (from the date of its adopted regulations to the first model year of the phase-in standards in 2025) are provided to improve the test procedure and for industry to incorporate needed improvements to their engines and fuel systems. CARB maintains that it has consistently demonstrated PM measurement capability at 1 mg/mi using new test procedures under development by EPA under 40 CFR Part 1066.¹¹⁶ CARB suggests that EPA apply the rationale of *NRDC* and find that CARB has identified barriers to implementation of needed technologies and a viable path to overcome these barriers. For example, CARB states test data that they have presented demonstrates PM levels from current port fuel injected (PFI) engines below 1 mg/mi and from late model gasoline direct injection engines (GDI) approaching 1 mg/mi. CARB expects further technical improvements over the extensive lead time provided.¹¹⁷ CARB has also identified that some of the low carbon technologies with proven track records that are most likely to be used (to meet GHG emission requirements) are: Advanced port fuel injection engines, GDI engines, boosted and downsized engines, clean diesel engines, hybrid, and plug-in hybrid technology among others. CARB notes

¹¹⁶ CARB notes that EPA has identified areas of improvement to Part 1066 it intends to evaluate in cooperation with CARB and industry (see pp. 54–59 of CARB's Technical Support Document at: <http://www.arb.ca.gov/regact/2012/leviiiigh2012/levapp.pdf>).

¹¹⁷ *Id.* at P–8 through P–20. CARB's Board has provided direction to its staff (Resolution 12–11 at 21) to conduct a review of the 1 mg/mi PM standard in the 2015 timeframe and report back to the Board its results.

that each of these technologies will have a particular impact on PM emissions. CARB notes that many of these technologies may be able to currently meet 2025 MY PM standards and that further improvements are reasonable. For example: (1) CARB's Technical Support Document states "Some current, well-maintained PFI-equipped LDVs emit PM mass levels below 1 mg/mi. For example, published research reports PM emissions rates for both PFI ULEV and SULEV vehicles of approximately 0.7 mg/mi or much less over the Federal Test Procedure (FTP or FTP-75) cycle" and (2) "Car makers who choose to pursue gasoline-fueled, CO₂ friendlier GDI internal combustion engines for their future vehicles will have two principal technical solutions for further reduction of PM mass emissions. One solution can utilize next generation state-of-the-art engines (e.g., start-stop system where the ICE automatically shuts down and starts up at idle) with optimized fuel injection strategies (e.g., spray-guided central injector) at nearly no net cost increase. The second solution employs post-combustion control in the form of the gasoline particle filter (GPF) at an additional cost."¹¹⁸

b. EPA's Response to Comments

As explained below, EPA believes CARB presents a proper view of how lead time should be evaluated, for purposes of waiver review by EPA, and that CARB has provided reasonable responses to any theoretical objections to the projected control technology; identified the major steps necessary in refinement of the technology; and offered plausible reasons for believing that each of those steps can be completed in the time available.

We also believe that CARB has properly set forth the role of EPA in reviewing California standards which require new and/or improved technology to meet challenging levels of compliance. EPA is not setting its own standards under section 202(a) of the Clean Air Act, rather EPA's role within its waiver review is more limited and takes place in the context of deference that Congress envisioned for California. This deference was discussed in an early waiver decision when EPA approved the waiver request for California's 1977 model year standards:

Even on this issue of technological feasibility I would feel constrained to approve a California approach to the problem which I might also feel unable to adopt at the Federal level in my own capacity as a regulator. The whole approach of the Clean

Air Act is to force the development of new types of emission control technology where that is needed by compelling the industry to 'catch up' to some degree with newly promulgated standards. Such an approach to automotive emission control might be attended with costs, in the shape of a reduced product offering, or price or fuel economy penalties, and by risks that a wider number of vehicle classes may not be able to complete their development work in time. Since a balancing of these risks and costs against the potential benefits from reduced emissions is a central policy decision for any regulatory agency, under the statutory scheme outlined above I believe I am required to give very substantial deference to California's judgment on that score.¹¹⁹

Regarding the feasibility of the CARB 1 mg/mile PM standard that commences its phase-in starting with the 2025 MY, EPA believes that it is proper to review this through the NRDC prism. In other words, EPA believes it appropriate to provide substantial room for deference to CARB's projections. Although the Manufacturers have raised a variety of concerns they have not provided any data or other information to demonstrate why the pathways and steps identified by CARB are unreasonable. EPA believes having given appropriate deference that CARB has reasonably projected possible pathways to address the theoretical concerns with the 2025 phased-in PM standard, including concerns relating to testing capability. The Manufacturers have provided no data or other information to demonstrate why CARB's identified path of improvements in testing technology and procedures is not feasible in the lead time provided. Similarly, the Manufacturers have provided no data or other information to demonstrate why CARB's identified technology solutions and possible refinements are infeasible, especially given the amount of lead time provided. Given the amount of lead time provided by CARB and their identified paths for improvements, EPA believes the opponents to the waiver have not met their burden of proof in regards to the PM standards commencing in MY 2025.

Therefore, based on the record before us, EPA cannot find that the opponents of the PM standard in 2025 have met their requisite burden of proof to demonstrate that such standards are inconsistent with section 202(a). Thus EPA cannot deny CARB's ACC waiver request on this basis.

3. LEV III GHG Emission Standards

CARB has worked closely with EPA and NHTSA throughout the development of the MY 2017-2025 GHG

emission standards and has moved in parallel with the agencies in setting standards that are essentially equivalent in terms of lead time and stringency. CARB projects that its GHG emissions standards for MYs 2017-2025 will reduce fleet average CO₂ levels by about 34 percent from MY 2016 levels of 251 g/mile down to about 166 g/mile, based on the projected mix of vehicles sold in California. The basic structure of the GHG standards is consistent with that of EPA's GHG standards. CARB uses two vehicle categories, passenger cars and light trucks. CARB projects that the standards will reduce car CO₂ emissions by approximately 4.9%/year, reduce truck CO₂ emissions by approximately 4.1%/year (the truck CO₂ standard target curves move downward at approximately 3.5%/year through the 2016-2021 period and about 5%/year from 2021-2025), and reduce combined light-duty CO₂ emissions by approximately 4.5%/year from 2016 through 2025.

CARB notes that the CO₂ emission reduction estimates are approximate because the required emission level to achieve compliance with the standards for each vehicle manufacturer depends on each manufacturer's ultimate sales mix of vehicles.¹²⁰ Within the two categories, the CO₂ standard targets for vehicle models sold by each automaker are indexed to the vehicles' footprint, which is calculated as each vehicle model's wheelbase times its average track width. As a result of this regulatory structure, the precise CO₂ emission rates that will result from the standards in each year from 2017 through 2025 will depend on the ultimate sales-weighted mix of vehicles (i.e., according to vehicle sales in each category and the footprint of the models) sold in each year.

CARB also adopted separate nitrous oxide (N₂O) and methane (CH₄) standards that are harmonized with the standards EPA first adopted in the MY 2012-2016 rulemaking. As with the EPA program, manufacturers may use CO₂ credits to meet the N₂O and CH₄ standards on a CO₂-equivalent basis.

CARB includes most of the flexibilities established by EPA for MYs 2017-2025. CARB includes averaging, banking, and trading provisions which allow for 5-year credit carry-forward and 3-year credit carry-back and credit trading between manufacturers. Manufacturers may generate air conditioning system credits through system efficiency improvements, low refrigerant leakage designs, and use of low global warming potential

¹¹⁸ *Id.*

¹¹⁹ 40 FR 23102, 23103 (May 28, 1975).

¹²⁰ EPA-HQ-OAR-2012-0562-0011 at ES-6.

refrigerants. Manufacturers may generate up to 18.8 g/mile CO₂-equivalent credit for cars and 24.4 g/mile CO₂-equivalent credits for trucks from air conditioning system improvements. CARB also moved to harmonize air conditioning system test procedures with EPA, replacing the A/C idle test requirement with the AC17 test procedure.

In addition CARB adopted off-cycle credits provisions similar to those adopted by EPA, which provide credits to manufacturers based on real world improvements in CO₂ emissions not captured on the 2-cycle test procedure. CARB adopted a list of pre-approved credits that manufacturers may claim by using pre-approved technologies. As with the EPA program, off-cycle credits based on the pre-approved credits list is capped at 10 g/mile. CARB also provides full-size pickup truck technology credits of 10 or 20 g/mile per vehicle depending on the level of technology employed, similar to the EPA program. Manufacturers may generate technology incentive credits by using hybrid technologies or by meeting performance-based criteria over a specified minimum percentage of full size pickup truck production.

The EPA and CARB programs differ in their treatment of advanced technology vehicles, specifically plug-in hybrids, battery electric vehicles, and fuel cell vehicles. EPA's program encourages the production of these advanced technology vehicles in two ways; by providing incentive multipliers for these technologies and by not counting the upstream emissions associated with electric operation for the first several model years of the program.¹²¹ CARB does not provide a multiplier incentive or allow for the use of a 0 g/mile compliance value. CARB explains that incentives are not needed for plug-in hybrids, battery electric vehicles, and fuel cell vehicles under their GHG program because the California ZEV program requires manufacturers to produce vehicles using these technologies.

In its Final Statement of Reasons, CARB reiterated its commitment, as directed by Board Resolution 12-11, to accept compliance with EPA's GHG emission standards for MY 2017-2025 as compliance with California's GHG standards if CARB determines that EPA's final rule preserves the GHG reduction benefits set forth in EPA's

¹²¹ EPA allows a 0 g/mile compliance value to be used for vehicles sold in MY2017-2021 and caps the cumulative number of vehicles that a manufacturer may use the 0 g/mile compliance value for in MYs 2022-2025.

proposed rule.¹²² CARB also notes their plan to adopt a "deemed to comply" rule within their waiver request to EPA. EPA stated in the **Federal Register** notice announcing the opportunity for hearing and comment on CARB's June 27, 2012 ACC waiver request that "EPA invites comment on all aspects of CARB's waiver request, and specifically invites comment on CARB's waiver request in light of CARB's plans concerning adoption of a "deemed to comply" provision into its LEV III GHG standards. This will allow EPA to consider any "deemed to comply" provision and comments on it when taking action on CARB's request for a waiver."¹²³

On September 14, 2012, CARB proposed amendments to their program to permit compliance based on compliance with EPA's GHG standards. In its discussion of the differences between the EPA and CARB programs with regard to the treatment of advanced technology vehicles, CARB notes that manufacturers will have the option to comply with the federal program and utilize the EPA accounting provisions for these vehicles.¹²⁴ On November 15, 2012, the Air Resources Board agreed to accept compliance with federal standards as equivalent to compliance with California's, approving the amendment for "deemed to comply."¹²⁵ On December 7, 2012, CARB submitted additional information to EPA noting that CARB had approved further amendments to the ACC program, including the "deemed to comply" regulation, and therefore California has met its commitment to the National Program. CARB requested that EPA consider and take action on these amendments concurrent with the request set forth in CARB's June 27, 2012 ACC waiver request.¹²⁶

a. Comments on CARB's 2017 Through 2025 GHG Emission Standards

CARB's waiver request notes that in 2010, President Barack Obama directed EPA and NHTSA to work with California to develop GHG fleet standards for MY 2017 through 2025 light-duty vehicles. In response, the three agencies developed the Interim Joint Technical Assessment Report (TAR), released in September 2010. The TAR was major milestone in the technical work done collaboratively by EPA, NHTSA, and CARB. CARB held

¹²² California Air Resources Board, EPA-HQ-OAR-2012-0562-0021, at 16.

¹²³ 77 FR 53199, 53200 (August 31, 2012).

¹²⁴ Air Resources Board, EPA-HQ-OAR-2012-0562-0011, at 135.

¹²⁵ CARB Resolution 12-35 (November 15, 2012).

¹²⁶ EPA-HQ-OAR-2012-0562-0374.

four public technical workshops covering topics of efficiency, mass-reduction, and safety technology; collaborative technical contract work (e.g., with FEV, Ricardo, Lotus); and extensive meetings with a wide range of stakeholders to gather input. This collaboration ensured that the three agencies had a common set of technical information on which to inform their proposals, allowing the agencies to develop standards that are harmonized in terms of their stringency.

CARB further notes that the feasibility analysis underlying its standards is based on several existing and emerging technologies that increase engine and transmission efficiency, reduce vehicle energy loads, improve auxiliary and accessory efficiency, and that would increasingly electrify vehicle subsystems with hybrid and electric drivetrains. The technology assessment conducted by CARB for the MY 2017-2025 standards builds on the original technical basis established in the previous rulemakings for California's MY 2009-2016 and federal MY 2012-2016 standards. CARB notes that several individual technologies offer substantial CO₂ reduction potential and that many of the technologies have only seen limited deployment in new vehicle models.¹²⁷

In its Initial Statement of Reasons staff report, CARB highlights several CO₂ reduction technologies that manufacturers can employ to meet the standards.¹²⁸ The list of technologies cited by CARB is very similar to the list of technologies considered by EPA and NHTSA in evaluating standards for MYs 2017-2025.¹²⁹ Vehicle road load and accessory energy loads can be improved, for example, through mass reduction, improved accessories, electric power steering, improved aerodynamics, and low rolling resistance tires. CARB notes several considerable opportunities for engine efficiency improvements. Engine efficiency technologies include turbo charging and downsizing, gasoline direct injection, continuously variable valve lift, cylinder deactivation, and diesel-fueled engines. CARB also describes transmission efficiency improvements important in allowing the operation of the engine in its lowest fuel consumption operating points more frequently. These include more gears

¹²⁷ California Air Resources Board, EPA-HQ-OAR-2012-0562-0011, at 102-103.

¹²⁸ California Air Resources Board, EPA-HQ-OAR-2012-0562-0011, at 103-108.

¹²⁹ Joint Technical Support Document: Final Rulemaking for 2017-2025 Light-duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, Chapter 3, EPA-420-R-12-901, August 2012.

(e.g., 8 speed transmissions), closer gear ratio spacing, optimized controls, and dual clutch transmissions that allow essentially the same efficiency as manual transmissions.

CARB's analysis also includes various hybrid systems that offer significant potential CO₂ reductions through the elimination of engine idling, reduction in fuel consumption during deceleration, reduction of acceleration power requirement through launch assist, and the recovery of vehicle energy losses through regenerative braking during deceleration. Finally, CARB also includes emerging electric drive technologies including plug-in hybrids, electric, and hydrogen fuel cell vehicles.

EPA received several comments on CARB's waiver request generally supporting the California GHG standards as feasible and consistent with CAA section 202(a). The Environmental Defense Fund (EDF) and the Natural Resources Defense Council (NRDC) commented that CARB coordinated with EPA and NHTSA in the development of the GHG standards and the California GHG standards are aligned with the federal GHG standards in terms of stringency and lead time. EDF further commented that EPA received letters from 13 automakers supporting the federal GHG standards, and based on this coordination and support EPA can only determine that the CARB GHG standards are feasible.¹³⁰

EPA received comments from the Dealers that EPA should not provide a waiver to California for the MY 2022–2025 GHG standards because the standards for these years are not consistent with CAA section 202(a). The commenter states that by committing to a mid-term evaluation in its own GHG program, EPA has already determined that “technological capabilities after MY 2022 are too remote to be accurately predicted.” The commenter argues that it is inappropriate for CARB to obtain a waiver for years where it cannot demonstrate technological feasibility regardless of the fact that California has agreed to participate in the mid-term review. The Dealers assert that by agreeing to participate in the mid-term evaluation, CARB “has admitted that the technological feasibility of its GHG standards for MYs 2022–2025 is not knowable at this time.”

As part of the waiver decision process, CARB's supplemental comments provided a response to

comments submitted by NADA, including a response to NADA's comments regarding the feasibility of the MY 2022–2025 standards.¹³¹ CARB comments that NADA concerns are not supported by relevant case law and should be dismissed. CARB comments that NADA is disregarding decades of precedent that clearly sets out the appropriate “technological feasibility” analysis under section 202(a). Citing *Natural Resources Defense Council v. U.S. Environmental Protection Agency*, (1981) 655 F.2d 318, 331, CARB notes CAA section 202(a) has historically been interpreted to allow for projections of likely future technological development. Such projections do not need to “possess the inescapable logic of a mathematical deduction.” Instead, such a projection is considered sufficient if it “answers any theoretical objections to the [projected technology], identifies the major steps necessary in refinement of the technology, and offers plausible reasons for believing that each of those steps can be completed in the time available.” Moreover, where the requirements of a standard are phased in over a lengthy period of time it bears on the likelihood of a proper finding of technological feasibility. CARB notes that the great length of time provided—until after MY 2022—supports a finding of technological feasibility under *NRDC*, and would be in line with past EPA waiver decisions.

b. EPA Response to Comments

EPA disagrees with NADA's characterization of the mid-term review as it relates to the technological feasibility of the standards for MYs 2022–2025. As discussed in the final rule for the EPA's GHG emission standards, EPA has found that its standards are technologically feasible under CAA section 202(a), based on available information regarding technology and costs.¹³² EPA could not have adopted the standards for MYs 2022–2025 if it did not find the standards to be consistent with CAA section 202(a) which requires EPA to consider issues of technological feasibility, cost, and available lead-time.¹³³ As EPA discusses in the final rule in response to comments, “EPA does not agree that the mid-term evaluation is legally required, or that the standards adopted today would be arbitrary and capricious or without substantial evidence to support them absent such a mid-term evaluation. The

final rule and supporting information and analysis amply justify the reasonableness and appropriateness of the final GHG standards adopted by EPA, irrespective of the provisions for a mid-term evaluation.”¹³⁴ EPA is committed to conducting a mid-term evaluation for MYs 2022–2025 in close coordination with NHTSA and CARB given the long time frame in implementing standards out to MY 2025 and given NHTSA's obligation to conduct a separate rulemaking in order to establish final standards for vehicles for those years.¹³⁵ With respect to the waiver, however, EPA believes that NADA's reference to the mid-term review does not demonstrate technological infeasibility (or any requisite level of uncertainty) or that the CARB standards are inconsistent with section 202(a), particularly given that the CARB standards are closely aligned to those adopted by EPA. In addition, compliance with EPA's GHG standards will be deemed to be compliance with CARB's GHG standards. EPA agrees with CARB's response to the NADA concerns and believes that a reasonable technology path forward has been projected in support of the MY 2022–2025 standards, which is further supported by the substantial amount of lead-time provided for these standards. EPA believes that the substantial amount of lead-time provided also accords with a finding of technological feasibility under *NRDC*, and would be in line with past EPA waiver decisions.

EPA did not receive any additional comments on the waiver decision regarding the technology assessment or cost analysis done by CARB in support of their GHG standards. CARB has adopted GHG standards that are closely aligned to those adopted by EPA for MYs 2017–2025. In EPA's final rule establishing the MY 2017–2025 standards, EPA concluded that the standards are feasible in the lead time provided and the costs are reasonable, as required under Section 202(a) of the CAA.¹³⁶ The technical basis for the standards was developed jointly by EPA, NHTSA, and CARB. The methodology and underlying data used by CARB to assess technologies and costs, as summarized above, are very similar and in many cases the same as those used by EPA to assess the standards.¹³⁷ The extended lead time

¹³⁰ EDF's comment at EPA–HQ–OAR–2012–0562–0025 and 0353; and NRDC's comment at EPA–HQ–OAR–2012–0562–0347.

¹³¹ EPA–HQ–OAR–2012–0562–0373 at 8.

¹³² 77 FR 62880–62882 and 62777.

¹³³ See 77 FR 62671–62673 for discussion on EPA statutory authority.

¹³⁴ 77 FR 62786.

¹³⁵ 77 FR 62784–62788.

¹³⁶ 77 FR 62624.

¹³⁷ See 77 FR 62702–62713 for a description of the EPA and NHTSA joint technology and cost assessment. More detail is provided in the joint Technical Support Document for the rule.

provides the necessary time for manufacturers to combine individual technologies, many of which are currently available, into optimized packages and apply them across their vehicle fleets.

It is also important to note that the EPA and CARB GHG programs are very similar in terms of the structure of the programs and flexibilities contained in the programs. The CO₂ standards are attribute-based fleet average standards, based on vehicle footprint curves that are identical. The programs include averaging, banking, and trading provisions. Both GHG programs offer credits for air conditioning system improvements, off-cycle CO₂ reductions, and full-size pickup truck technology incentives. Both GHG programs contain the same N₂O and CH₄ standards and essentially the same provisions for small volume manufacturer and small businesses.

There are some aspects of the CARB program that differ from the EPA program but, as discussed below, EPA does not believe that these differences change the feasibility of the standards in any significant way. CARB has explained in detail how these standards can be met using technologies that are reasonably expected to be available in the regulatory timeframe. NADA does not substantially undermine this explanation.

CARB estimated an average per vehicle cost in MY 2025 of \$1,340 without the new ZEV requirements and \$1,840 with the new ZEV requirements. In its final rule, EPA estimated an average per vehicle cost of about \$1,800 in MY 2025 for the EPA GHG standards. Both agencies conclude that these up-front per vehicle costs will be more than offset by consumer fuel savings over the life of the vehicles.

Perhaps the most significant differences between the CARB and EPA vehicle programs involve the new California ZEV requirements which mandate use of ZEV-type technologies for a portion of a manufacturer's fleet, and therefore may alter the technology pathways that manufacturers might otherwise choose to meet the GHG standards. EPA has reviewed the consistency of the ZEV requirements with section 202(a) separately below

The CARB and EPA programs also differ in the treatment of vehicles capable of electric operation. EPA provides an advanced technology incentive multiplier through MY 2021 to encourage the increased sales of plug-in hybrids (PHEVs), electric vehicles (BEVs), and fuel cell vehicles (FCVs). CARB does not provide advanced technology incentive credits for these

vehicles because these types of vehicles are required under the ZEV program and an incentive is not necessary. CARB also accounts for upstream emissions from electric operation starting in MY 2017 while EPA phases in upstream accounting for MY 2022–2025 vehicles after vehicle sales thresholds are exceeded. These differences mean that PHEVs, BEVs, and FCVs do not receive as much credit in the CARB program compared to the EPA program. However, these vehicles still offer significantly lower CO₂ levels in the CARB program compared to more conventional technologies, lowering a manufacturer's CO₂ fleet average.

There are other minor differences between the CARB and EPA programs but EPA does not believe the differences have a significant impact on feasibility. Many of the differences in the programs arise from changes EPA made to various provisions between the proposal and final rules in response to comments. CARB delineates these minor differences in the Initial Statement of Reasons for their proposal to accept compliance with EPA's GHG emission standards as compliance with California's GHG emission standards (aka "deemed to comply").¹³⁸ These include revisions to the off-cycle credits, air conditioning system credits, and full-size pick-up credits. While most of the changes made by EPA in its final rule directionally provide somewhat more flexibility to manufacturers, the changes do not ultimately change the level of credits potentially available. CARB concludes and EPA agrees that the programs remain sufficiently comparable.

Finally, as discussed below, most if not all manufacturers will very likely opt to comply with the California program by complying with the EPA GHG emission standards, as permitted by the "deemed to comply" regulation. Therefore, the small differences between the programs will not in such cases have any practical implications for manufacturers. As CARB notes in its waiver request, "Throughout the development of the LEV III GHG regulations, California coordinated with the EPA and NHTSA on technical and economic areas, and CARB has moved in parallel with the federal rulemaking in terms of stringency of the standards and lead time for compliance." Given this coordination, commenters have not shown that the LEV III GHG regulations are technologically infeasible or that the lead time provided is inadequate.

The Manufacturers note that they do not oppose California's request for a

¹³⁸ EPA-HQ-OAR-2012-0562-0374 at 6–13.

Section 209(b) waiver for its GHG emission standards but state that it would not be appropriate for the waiver to be granted until after California has finalized its regulatory amendments to allow for a national compliance option.¹³⁹ "This national compliance option is integral to the commitment letters the industry and California signed in July 2011 and to the single national GHG/fuel economy program all stakeholders sought to achieve."

As noted above, CARB notified EPA by letter dated December 7, 2012 that CARB has approved further amendments to its ACC program, including the "deemed to comply" regulation.¹⁴⁰ Included in CARB's December 7, 2012 letter to EPA is CARB's "Final 'Clean' Version of California's 2017–2025 Advanced Clean CAR Program, including its Passenger Vehicle Greenhouse Gas Regulations and LEV/GHG Test Procedures, and its ZEV regulations and Test Procedures" all as amended December 6, 2012.¹⁴¹

EPA has not received any comment, based on its August 31, 2012 **Federal Register** Notice, that CARB's "deemed to comply" regulation raises any issues regarding technological feasibility. EPA did receive comment from the Manufacturers requesting that EPA not grant CARB a waiver for its GHG emission standards until after CARB has finalized their "deemed to comply" regulations. Today's waiver applies to CARB's final regulation as adopted on December 6, 2012.

After review of the information in this proceeding, EPA believes that those opposing the waiver have not met their burden of showing that compliance with California's GHG standards is infeasible, even without the deemed to comply provision, based upon the current and future availability of the described technologies in the lead-time provided and considering the cost of compliance. The CARB technical information presented in this record clearly indicates that these requirements are feasible. In addition, California's regulations include a "deemed to comply" provision which provides further strong support for this view. EPA therefore determines that those opposing the waiver have not met the

¹³⁹ The Manufacturers note that California does not believe that another waiver request is necessary once the amendments are finalized, further supporting its request to wait until after CARB finalizes its rule.

¹⁴⁰ See CARB's Resolution 12–35 (November 15, 2012) at EPA-HQ-OAR-2012-0562-0374 (attachment 64), Executive Order R-12-016 (December 6, 2012) at EPA-HQ-OAR-2012-0562-0374 (attachment 66).

¹⁴¹ See EPA-HQ-OAR-2012-0562-0374 (attachment 65).

burden of producing the evidence necessary for EPA to find that California's GHG standards, including the "deemed to comply" provision, are not consistent with Section 202(a).

4. California's ZEV Amendments as They Affect 2018 Through 2025 Model Years

As noted above, after a thorough review of CARB's ZEV amendments, we have determined that such amendments, as they affect 2017 and earlier MYs, are within the scope of previous waivers of preemption. However, EPA recognizes that such amendments add significant new requirements, as they affect 2018 and later MYs, and therefore such amendments are reviewed under the full waiver criteria.

a. Comments on CARB's ZEV Amendments

CARB notes in its waiver request that to date, all vehicle manufacturers operating in California are in full compliance with the ZEV mandate. Nearly 5,600 ZEVs (BEVs and FCVs) are in operation statewide and 380,000 AT PZEVs are also in operation. Fuel cell vehicle and infrastructure is progressing with several automakers moving toward commercialization sometime after 2015. Cumulatively, automakers plan to have 50,000 FCVs operational in California by 2017, according to CARB.¹⁴² CARB also notes that most manufacturers have near-term production plans to meet or over comply with the regulatory requirements through MY 2017. In addition, recently a number of manufacturers have announced aggressive production plans for PHEVs and BEVs for the next three MYs. CARB maintains that these announcements reflect technological advancement in lithium-ion battery technology and a general shift in customer demand and concern about environmental stewardship. CARB provides a table in its waiver request that summarizes manufacturers' current ZEV and TZEZV program commitments, by technology category and as publicly stated.¹⁴³ CARB suggests that the table reveals that nearly every manufacturer will be introducing BEV and PHEV products within the next one to three years, and five manufacturers will commercially introduce FCVs by 2015. CARB states that the technological sophistication of ZEVs currently being produced is anticipated to advance, making commercial production and compliance of these vehicles by MY 2018 and later

more feasible. A new feature of the ZEV amendments is that manufacturers will be allowed to use a variety of battery and fuel cell vehicle technologies to comply with the ZEV requirement, making compliance still more feasible. Finally, CARB notes that during its rulemaking proceedings for the adopting of the 2012 ZEV amendments they did not receive any comments questioning the overall technological feasibility of the amended standards.

With regard to the manufacturer costs associated with the ZEV emission requirements CARB states that the "ZEV regulation must be considered in conjunction with the proposed LEV III amendments. Vehicles produced as a result of the ZEV regulation are part of a manufacturer's light-duty fleet and are therefore included when calculating fleet averages for compliance with the LEV III GHG amendments. Because the ZEVs have ultra-low GHG emission levels that are far lower than non-ZEV technology, they are a critical component of automakers' LEV III GHG standard compliance strategies. As such the ZEV program cost is considered as the difference in complying with the LEV III GHG fleet standard without the proposed amendments to the ZEV regulation versus with the proposed amendments to the ZEV regulation. Assuming that all of the associated direct manufacturing and ICMs are passed on to consumers, the average incremental price increase that results from the proposed LEV III GHG fleet standards and proposed ZEV regulation over the 2017 through 2025 timeframe will differ from the average increase resulting from compliance with only the LEV III GHG amendments. The average incremental vehicle price due to proposed LEV III GHG standards, but with no amendments to the current ZEV regulation, in 2025 is expected to be \$1,340. The average incremental vehicle price considering the proposed LEV III GHG fleet standards and the proposed ZEV requirements in 2025 MY increases to \$1,840, a \$500 incremental increase.

* * * In the broader context of the overall fleet, the ultra-low GHG ZEV technology is a major component of compliance with the LEV III GHG fleet standards for the overall light duty fleet. In that fleet context, the overall cost of the ZEV program is the difference in costs between the "GHG-plus-ZEV" and the "GHG only" scenarios."¹⁴⁴

EPA has also received comment from several consumer and environmental groups that support CARB's ZEV amendments. The Consumer Federation of America (CFA) provided comment

that "California's ability to set these strong standards is vitally important to the advancement of the auto industry and for meeting consumer demand for cleaner and more efficient cars in states across the nation. Consumers understand the benefits and have consistently voiced support for California's leadership on clean car standards. In fact, CFA's latest poll on the subject found that "more than 70% of Americans support states being allowed to continue setting tailpipe emission standards that, as a result, increase fuel economy for motor vehicles." This commenter also provides the latest from a *Consumer Reports* poll on the subject, including "Seventy-five percent of California consumers think California should require automakers to build fleets that include increasing numbers of zero emission vehicles including electric and hydrogen fuel cell cars."¹⁴⁵ EPA received comment from Consumer Reports/Consumers Union (Consumer Reports) in support of CARB's ACC program and notes the survey above. In addition, Consumer Reports notes that vehicle manufacturers are already offering plug-in hybrids and BEVs, with new models appearing all the time. "Consumers, particularly in California, are very open to buying alt-fuel vehicles. Importantly, some of the cleanest vehicles or alt-fuel vehicles are also proving very satisfying to vehicle owners."¹⁴⁶ EPA also received oral testimony from Calvert Investments noting that CARB's ACC program will help drive innovation, investment, and job creation and thus they strongly support both the LEV III (including GHG standards) and ZEV requirements in the ACC program. "Customers want and in an increasing number of countries require cleaner cars and trucks, to go further on every gallon of gas, while cutting back on GHG emissions that contribute to climate change. Companies that fail to embrace relevant new technologies, from improving mileage for conventional internal combustion engines to developing hybrid, electric, and fuel cell vehicles, are putting themselves at risk."¹⁴⁷

In addition, EPA received comment from NRDC that provided specific input on the criterion for consistency with CAA Section 202(a). NRDC states that the forecasted ZEV sales in California exceed ZEV requirements. In a report jointly published with NRDC, auto industry analysts Baum and Associates

¹⁴² See CARB's Initial Statement of Reasons (ISOR), EPA-HQ-OAR-2012-0562-0008 at 11.

¹⁴³ CARB waiver request at 27-28.

¹⁴⁴ CARB's ISOR at pp. 62-63.

¹⁴⁵ EPA-HQ-OAR-2012-0562-0032.

¹⁴⁶ EPA-HQ-OAR-2012-0562-0354.

¹⁴⁷ EPA Hearing Transcript at 83. EPA-HQ-OAR-2012-0562-0026.

projected potential ZEV sales from 2015 to 2020. The 2012 ZEV amendments expect ZEV sales of about 75,000 vehicles in MY 2018 and 130,000 vehicles in 2020. The Baum Associates assessment, conducted before the ZEV amendments were proposed, projected ZEV sales of as much as 160,000 in MY 2018 and 180,000 in MY 2020. Baum and Associates also forecasts on an ongoing basis for the introduction of new ZEV models into the marketplace in the next few years, demonstrating the technical feasibility of ZEV technologies today. The Baum and Associates forecasts are based on detailed information about supplier and OEM production plans. NRDC compared the Baum and Associates forecast for BEVs, PHEVs, and FCVs to the ZEV and TZEVE production announcements included by CARB in their waiver request. NRDC found that there are even more models that will be introduced than identified by CARB.¹⁴⁸

EPA received comment both from the Manufacturers and the Dealers stating their objections to CARB's ZEV amendments as they affect 2018 and later MYs. The Manufacturers provide essentially three arguments for their assertion that the ZEV regulations are infeasible, particularly when applied individually in section 177 States. (The Manufacturers state that the amendments before EPA require an increasing number of ZEVs in California and each of the section 177 States.)¹⁴⁹ The Manufacturers claim that: 1) the infrastructure for BEVs will not be sufficient by MY 2018 to support increased sales of BEVs and that CARB has not explained how it determined that the infrastructure and the level of consumer demand in the Section 177 States will be sufficient to justify the ending of the travel provisions for ZEVs after MY 2017; 2) the cost of the ZEV program far exceeds its environmental benefits, especially when compared to the LEV III and GHG programs in terms of cost per ton of CO₂ removed; and 3) the current data on consumer demand for ZEVs indicates that it will not be feasible to meet the sales requirements for 2018 MY and beyond. In conjunction with this third argument the Manufacturers contend that the market for these types of vehicles has not

¹⁴⁸ EPA-HQ-OAR-2012-0562-0347. See Baum and Mui, "The Zero Emission Vehicle Program: An Analysis of Industry's Ability to Meet the Standards", May 2010. Available at http://docs.nrdc.org/energy/files/ene_10070701a.pdf.

¹⁴⁹ EPA believes the Manufacturers have mischaracterized the nature of CARB's waiver request. CARB has only submitted its own ACC regulations to EPA and it has not submitted, nor has any other State submitted, section 177 state regulations.

developed as quickly as anticipated and therefore there is no basis to conclude that BEV sales will reach required levels by 2025. (The Manufacturers also state that it is "highly unlikely that the required infrastructure and level of consumer demand for ZEVs will be sufficient by MY 2018 in either California or in the individual Section 177 States to support the ZEV sales requirements mandated by CARB.) Because of these concerns the Manufacturers suggest that EPA deny the ZEV waiver for 2018 and later MYs, or at least defer the program for MY 2021 and later, until California, EPA, and the auto industry have conducted a mid-term review of ZEV similar to the GHG program.

As noted above, the Manufacturers provide EPA with current vehicle sales and registration data. These data include current sales figures for hybrids (approximately 3% of annual sales nationally and approximately 6.1% in California according to registration data). The Manufacturers note that registration of hybrids in section 177 states is far lower. The Manufacturers maintain that the low sales numbers are due substantially to the increased cost relative to traditional vehicles, and that the demand for BEVs in section 177 States is particularly "sluggish." However, the comments EPA received did not include forecasts, projections, data, or other evidence to support the Manufacturer's conclusions about future ZEV sales, or in particular, to demonstrate that the CARB ZEV requirements are infeasible.

The Dealers maintain that technological feasibility requires that not only certain technologies be possible, but they also be "economically achievable."¹⁵⁰ The Dealers maintain that in order for ZEV vehicles to be marketable they must: (1) Be at least as safe as comparable conventionally-fueled vehicles, (2) offer a range comparable to conventionally-fueled vehicles, (3) offer a refueling time comparable to conventionally-fueled vehicles, (4) offer similar performance and capacities, and (5) come to market at a cost comparable to conventionally-

¹⁵⁰ NADA points to CARB's waiver request at 25 wherein CARB states "It is well established that EPA will find a regulation to be technically feasible if 'a reasonable basis [exists] that a new technology will be available and economically achievable.'" However, NADA fails to reference CARB's subsequent (and EPA believe the appropriate view of cost) statement on the same page: "The only relevance of costs in a Section 209(b) waiver proceeding is in the context of technological feasibility. Past waiver determinations have made clear that for the cost of compliance to be found excessive it would need to be 'very high' such that the cost to consumers when purchased a complying vehicle would be doubled or tripled."

fueled vehicles. The Dealers maintain that CARB's estimates that ZEVs and TZEVEs that will cost approximately \$10,000 more than comparable traditional vehicles, with at best no performance advantages, are by definition not feasible as they will be unable to compete in the marketplace.

CARB provides several responses to the comments submitted by the Manufacturers. In terms of the applicability of section 177 within EPA's section 209 waiver deliberations, and consideration of the technological feasibility of CARB's amendments adopted in such states, CARB notes that the proper scope of EPA's inquiry is limited by the express terms of section 209(b). This is well illustrated both in past waiver determinations and in case law.¹⁵¹ While CARB discredits the view that EPA should consider the feasibility of ZEV in other states, it also notes that charging infrastructure in states other than California does not seem to be a concern as both Nissan and General Motors are currently marketing advanced technology vehicles nationally, and Ford will begin 50-state marketing in early 2013. EPA notes that although it is unclear whether the Manufacturers are contesting the current or future adequacy of infrastructure in California (other than a sentence that states it is "highly unlikely"), CARB nevertheless sets forth that there is much activity in the field of electric vehicle charging infrastructure, and that public charging programs are being funded by the California Energy Commission, U.S. DOE EV Everywhere program, the U.S. DOE EV Project, and other programs to address the needs of plug in vehicles. CARB also states that it appears that charging infrastructure is sufficient and efforts underway to address infrastructure needs (through the programs noted above and CARB's own ZEV Executive Order) are focused on highest priority charging locations, namely multi-family dwellings and workplace charging.

CARB also responds to concerns expressed about the feasibility of ZEV vehicles in terms of consumer demand. They note that current sales data for plug in vehicles show sales growing rapidly—faster than conventional hybrids grew when they were first launched. CARB states that these early sales data, aggressive programs for community readiness, public education, infrastructure development and

¹⁵¹ CARB's supplemental comments at 6. See 49 FR 18887, 18889 (May 3, 1984) and 58 FR 4166 (January 7, 1993). See also *MEMA I 627 F.2d 1095, 1114-20* (Administrator properly declined to review potential anti-trust and constitutional implications of CARB regulations under 209(b)).

incentives are in place to support as much as possible consumer acceptance and adoption of ZEV technologies. CARB also notes that the Dealers comments in this regard can be addressed by examining relevant case law and EPA's past application of the law. CARB notes that the Dealers' statement that it is inappropriate for EPA to grant a waiver unless the Agency can "demonstrate technological feasibility for all the years in which those standards would be in effect" is disregarding decades of waiver precedent that clearly sets out the appropriate "technological feasibility" analysis under section 202(a)." Section 202(a) has historically been interpreted to allow for projections of likely future technological development. Such projections do not need to "possess the inescapable logic of a mathematical deduction." Instead, such a projection is considered sufficient if it "answers any theoretical objections to the [projected technology], identifies the major steps necessary in refinement of the technology, and offers plausible reasons for believing that each of those steps can be completed in the time available."¹⁵²

CARB also addresses the Dealers' stated concerns about the marketability of ZEVs.¹⁵³ CARB notes that a more appropriate measure of ZEV market success and growth potential is to examine the recent years when ZEVs have actually been available to consumers. In the last two years, with the introduction of Nissan Leaf, Ford Focus EV, Honda Fit EV, Mitsubishi IMiEV, and others, BEV sales have grown 228 percent.¹⁵⁴ As discussed below, CARB also points to the Joint Technical Assessment Report (TAR), which was developed by EPA, NHTSA, and CARB, and released in September 2010.

CARB states that the Dealers disregard well established law and create their own definition of "technological feasibility" in suggesting that EPA consider in its assessment a comparison of ZEVs and conventional vehicles on cost, safety, and performance features such as range and refueling time. CARB relies upon cost (*MEMA I* at 1118),

performance (*International Harvester* at 641–647), and durability (*NRDC* at 333–335). CARB states:

The ZEVs produced for the regulation will meet the same safety requirements that conventionally fueled vehicles meet. They already achieve acceleration and power characteristics expected on traditional vehicles and have demonstrated adequate durability. Range and refueling times are characteristics not traditionally taken into consideration. The automakers are targeting range for battery electric vehicles that match up with the vast majority of daily driving needs or most consumers (typical trips and typical daily needs are under 30 miles). For fuel cell vehicles, automakers have demonstrated range capability equal to or greater than conventionally fueled vehicles. With regard to refueling time, BEV drivers look at refueling differently; 30 seconds a day at home to plug in (with charging occurring overnight or while at work) and have a full range daily instead of visiting a gasoline station weekly is characterized as much more convenient. Fuel cell vehicles refuel in about the same amount of time as a gasoline car. By all of these measures ZEVs are more than technologically feasible for commercialization, certainly so with the abundant nine to 12 years of lead time for the 2022–2025 model years that are the focus of the comments.¹⁵⁵

CARB also relies upon the projections and explanations submitted with its initial waiver request and notes that the Dealers are taking issue with standards that do not come into effect until after a lengthy lead time. In addition to CARB's waiver request projections and explanations noted at the outset of this section CARB also provides an explanation of the Joint Technical Assessment Report (TAR), which was developed by EPA, NHTSA, and CARB, and released in September 2010. The report concluded "electric drive vehicles including hybrid(s) * * * battery electric vehicles * * * plug-in hybrid(s) * * * and hydrogen fuel cell vehicles * * * can dramatically reduce petroleum consumption and GHG emissions compared to conventional technologies * * *. The future rate of penetration of these technologies into the vehicle fleet is not only related to future GHG and corporate average fuel economy (CAFE) standards, but also to future reductions in HEV/PHEV/BEV battery costs, [and] the overall performance and consumer demand for the advance technologies * * *."¹⁵⁶

CARB notes that the TAR stated that "* * * [A] number of the firms suggested that in the 2020 timeframe their U.S. sales of HEVs, PHEVs, and EVs combined could be on the order of 15–20 percent of their production."¹⁵⁷

Lastly, CARB addresses the Manufacturers' comments regarding the cost-effectiveness of CARB ZEV amendments, in terms of cost per ton of CO₂ removal, in a manner similar to its response to the section 177 arguments—that such comments are irrelevant to EPA's 209(b) waiver consideration. CARB notes EPA's 2009 GHG waiver decision wherein EPA described the appropriate cost of compliance analysis under section 202(a): "Consistent with *MEMA I*, the Agency has to evaluate costs in the waiver context by looking at the actual cost of compliance in the time provided by the regulation, not the regulation's cost effectiveness. Cost effectiveness is a policy decision of California that is considered and made when California adopts the regulations, and EPA, historically, has deferred to these policy decision * * *. The issue of whether a proposed California requirement is likely to result in only marginal improvement in air quality not commensurate with its cost or is otherwise an arguably unwise exercise of regulatory power is not legally pertinent to my decision under section 209."¹⁵⁸

In addition to the above facts, we believe additional information can help inform our review of the required increases in the sale of PHEVs, BEVs, and FCVs in California during the 2018 through 2025 timeframe.

EPA reviewed two additional studies of the market potential of ZEVs from the Electric Power Research Institute (EPRI) and the U.S. Energy Information Administration's Annual Energy Outlook (AEO) that are relevant to CARB's ZEV mandate. EPRI, a leading electric utility research organization published a July 2011 technical report, *Transportation Electrification, A Technology Overview*,¹⁵⁹ which presents three market projection scenarios for EVs and PHEVs. The scenarios project a range of Low, Medium, and High sales volumes. The

¹⁵² CARB supplemental comments at 8, citing *NRDC v. EPA*, 655 F.2d 318, 331.

¹⁵³ CARB notes that it is important to recognize that the ZEV regulations do not place requirements on dealers to offer for sale or sell ZEVs; rather the requirement is on the automakers. Since the obligation to sell and place ZEVs in service falls to the automakers, it is the automakers' responsibility to make the subject cars marketable and sellable by the dealers.

¹⁵⁴ CARB supplemental comments at 11, citing Natural Resources Defense Council post (October 31, 2012) attached as item 52 to supplemental comments.

¹⁵⁵ CARB's supplemental comments at 12.

¹⁵⁶ EPA, 2010. United States Environmental Protection Agency, National Highway Safety and Traffic Administration and California Air Resources Board. September 2010. "Interim Joint Technical Assessment Report: Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2017–2025" (p. vii). <http://www.epa.gov/otaq/climate/regulations/ldv-ghg-tar.pdf>.

¹⁵⁷ *Id.* at 2–5.

¹⁵⁸ CARB's supplemental comments at 9, citing 74 FR 32744, 32775 (July 8, 2009). CARB provides additional information explaining how the ZEV program was considered in conjunction with the LEV program and that the ZEV regulation remains an important part of California's plans to reach attainment of health based air quality standards.

¹⁵⁹ EPRI, *Transportation Electrification, A Technology Overview*, 2011 Technical Report, EPRI 1021334, July 2011. <http://www.epri.com/abstracts/pages/productabstract.aspx?ProductID=0000000001021334>.

EPRI projection for national EV and PHEV sales in 2018 ranges from a low of 500,000 vehicles to a high of 1,920,000 vehicles. In 2025, the EPRI projections range from a low of 1,144,000 to a high of 5,073,000 vehicles. The Low projection mimics the historical market penetration of HEVs from 2000 through 2008, applying their rate of sales growth to PHEVs and EVs. The Medium projection is based on a “ground up” analysis of sales projections derived from PHEV and EV product announcements and production estimates. These projections are extrapolated past 2015 based on the aforementioned product announcements and the past sales performance of HEVs. The High projection is based on the average of the top third (more optimistic) of publicly available sales projections from several sources. In each of EPRI’s three cases, projected PHEV and EV national sales far exceed CARB’s ZEV mandate. EPA acknowledges that the EPRI study did not specifically project California sales but we believe it reasonable to assume that the supply of and demand for such vehicles will be significantly greater in California (and to some extent in section 177 states with ZEV programs) than it will be in states without a ZEV mandate. The EPRI study indicates that it would take less than 25 percent of the total national sales of ZEV in the Low scenario in order to exceed the necessary ZEV sales percentages during the 2018 through 2025 timeframe in California.

The U.S. Energy Information Administration (EIA) also analyzed two scenarios of market penetration for PHEVs and EVs in their Annual Energy Outlook 2012 (AEO2012).¹⁶⁰ AEO’s reference case indicates a national market potential of around 165,000 EVs and PHEVs in 2018 which is more than twice the CARB ZEV requirement. In 2025, the AEO reference case indicates a national market potential of 283,000 ZEVs, which still exceeds CARB’s proposed ZEV requirement of nearly 271,000. AEO’s reference case assumes EV technology cost, especially batteries, remains high through 2030. AEO’s High Technology Battery case, assumes the Department of Energy’s (DOE) battery cost goals are met in 2015. Generally, these battery costs are more comparable to battery costs used by CARB and EPA in the 2010 Joint Technical Assessment

¹⁶⁰ U.S. Energy Information Administration, Annual Energy Outlook 2012, Data Tables, Table 57 accessed 12/13/12 at <http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2012&subject=0-AEO2012&table=48-AEO2012®ion=1-0&cases=hp2012-d022112a>.

Report (TAR)¹⁶¹ than those used in the reference case. The AEO High Technology Battery case indicates a market potential of ZEVs in 2018 as 805,000 units, increasing to 1,394,000 in 2025. As with the EPRI study above, using the projections of the AEO High Technology Battery case, it would take less than 25 percent of the total national sales of ZEV to exceed the necessary ZEV sales percentages during the 2018 through 2025 timeframe in California.

While both the EPRI and AEO market projections are for national sales, EPA believes it is reasonable to assume that a significant percentage of these vehicles will be sold in California as has been the past practice with HEVs and EVs.

b. EPA’s Response to Comments

After a review of the information in this proceeding, EPA has determined that the opponents of the ZEV standards have not demonstrated that the necessary increase in PHEV and ZEV sales necessary to meet the ZEV standards in the 2018 through 2025 MYs is infeasible. A review of the record, indicates that compliance with the ZEV standards, as they affect the 2018 through 2025 MYs, is feasible giving consideration to cost and lead time available. CARB has answered any theoretical objections to the projected technology, identified the major steps necessary in refinement of the technology, and offers plausible reasons for believing that each of those steps can be completed in the time available. This assessment is based upon the current technology available along with projected improvements in technology and expected cost reductions (in addition to continuing increases in consumer demand in response to preferences for advance technologies, fuel savings, available and improved infrastructure, incentives, regulatory mandates, etc) and given the significant lead time provided. As discussed in detail below, EPA cannot find that those opposing the waiver request have met their burden of showing that California’s regulations are inconsistent with section 202(a). Therefore, we cannot deny the waiver on that ground.

Basic Feasibility of ZEV Technology

At the outset we note that manufacturers are meeting the ZEV requirements today. As CARB noted in its waiver request, most manufacturers have near-term production plans to

¹⁶¹ “Interim Joint Technical Assessment Report: Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2017–2025,” September 2010.

meet or over comply with regulatory requirements through 2017. More importantly, a number of manufacturers have clearly demonstrated the feasibility of ZEV technology with in-production or planned PHEV, BEV and FCV models within the next few years. Manufacturers are also afforded the flexibility to determine the appropriate mix between BEVs and FCVs. We note that no commenter suggested that the underlying technology is not available today nor is there any evidence in the record that contradicts CARB’s assertions that improvements and technology path moving forward will continue in the ZEV area in regards to range and other capabilities. The objections raised by those opposing the waiver on this point have to do less with the basic feasibility of ZEVs than with their acceptability/marketability, supporting infrastructure, and cost.

Regarding the lead time provided by California to meet the ZEV phase-in requirements, the commenters have not met their burden to show that the lead time is insufficient. While the commenters noted general concerns about marketability, infrastructure and cost they made no claims that inadequate lead time exists or that CARB’s requirements would be feasible if more lead time were provided.

Regarding the cost component of the technological feasibility test, EPA believes that the opponents of the waiver have not met their burden to show that the ZEV standards are not technologically feasible because of excessive cost. As noted above, EPA has traditionally examined whether the necessary technology exists today, and if not, what is the cost of developing and implementing such technology. To the extent it is appropriate for EPA to continue to examine the cost of implementing ZEV technology, CARB estimates that by 2025 the incremental cost of a ZEV or TZEV is expected to rapidly decline, yet remain approximately \$10,000 (high end estimate) higher than a conventional vehicle.¹⁶² The Manufacturers note that CARB’s analysis provides an incremental cost of \$12,900 in MY 2020.¹⁶³ Under EPA’s traditional analysis of cost in the waiver context, because such cost does not represent a “doubling or tripling” of the vehicle cost, such cost is not excessive nor does it represent an infeasible standard.¹⁶⁴ Moreover, though EPA believes that it is not necessary or appropriate for EPA to evaluate how manufacturers choose to

¹⁶² CARB waiver request at 6.

¹⁶³ Manufacturers’ comments at 16.

¹⁶⁴ MEMA I at 1118.

allocate the incremental costs of ZEVs over their respective California fleets. CARB has identified one methodology of speeding the cost over the entire fleet with a resulting incremental cost of approximately \$500, which is well within acceptable cost levels. EPA notes that manufacturers and dealers have many possible strategies available to spread the cost of the ZEV requirement beyond ZEV purchasers, but that such strategies are within the market choices of the manufacturers and dealers. Although EPA received comment that a manufacturer may have to employ costly marketing strategies if consumers do not otherwise accept ZEV vehicles, we do not believe such statements evidence standards that are infeasible. EPA also notes the likely existence of additional incentive programs that will further enable the marketability of ZEV vehicles from a cost perspective.

Relevance of Section 177 States on Consistency Analysis

The opponents of CARB's ZEV amendments, as they affect 2018 and later MYs, rely upon the implications of the adoption of CARB's ZEV amendments in section 177 states and resulting feasibility concerns. EPA's longstanding interpretation of section 209(b) and its relationship with section 177, is that it is not appropriate under section 209(b)(1)(C) to review California regulations, submitted by CARB, through the prism of adopted or potentially adopted regulations by section 177 states. EPA believes the language of section 209(b) is intended to apply solely to whether California's regulations can be denied a waiver under the criteria of section 209(b). State regulations promulgated under section 177, which are promulgated by separate state agencies under their own authority, and which have not been submitted to EPA for waiver review, are not a proper focus of review for our determination regarding whether California's state regulations meet the requirements under section 209(b). Section 177, and the state statutes authorizing state action under section 177, is separate provisions with their own requirements, and those opposed to state regulations promulgated under section 177 would need to take action under those provisions in those states.

An issue that arose during EPA's consideration of California's waiver request for its 1990 LEV standards was whether EPA could consider in its waiver decision the impact and implications of other states adopting the California standards under section 177. EPA concluded that section 209(b) does not authorize the agency to consider the

impacts of actions or potential actions taken by other states under section 177 in reviewing a waiver request by California for its state standards.¹⁶⁵ EPA also received comment, during a 1978 waiver review that EPA must consider each of the criteria of section 209(b) of the Act in light of the possibility that eligible States may impose the emission control requirements, for which a waiver has been granted, under section 177. A commenter further argued that EPA could not grant a waiver unless and until we could make an affirmative finding that the basic market demand could be satisfied in all States eligible to adopt and enforce the California standards under section 177. We did not agree with the commenters' interpretation of EPA's responsibilities under section 209(b). "That section authorizes me to deny California a waiver only if I have determined that California does not meet the given criteria; it does not require me in granting a waiver to consider the impacts of actions taken by other States under section 177* * *" EPA continued "The legislative history behind the Clean Air Act Amendments of 1977 [the amendments that added section 177] contains no statement to the contrary."¹⁶⁶ More significantly, the legislative history behind the amendments to section 209(b) specifically states that the intent of these amendments was * * * "to ratify and strengthen the California waiver provision and to affirm the underlying intent of that provision, i.e. to afford California the broadest possible discretion in selecting the best means to protect the health of its citizens and the public welfare."¹⁶⁷ EPA also determined that Congress already had balanced the burdens on manufacturers by selecting the language they did for section 177 and believed that such authority should not place an undue burden on the vehicle manufacturers. EPA is also guided by the District of Columbia Circuit's discussion of section

¹⁶⁵ 58 FR 4166 (January 13, 1993), and LEV Decision Document at pp. 185-186. See "State and Federal Standards of Mobile Source Emissions: Published by the National Research Council, 2006 at 81, 83. "In contrast to section 209(b) in which Congress explicitly assigned EPA the role of approving waiver of federal preemption for California standards, in section 177, Congress did not assign EPA any role in approving adoption of California by other states. As EPA itself stated, 'language requiring that other States request and receive authorization from EPA is noticeable absent.'"

¹⁶⁶ See H.R. Rep. No. 95-294, 95th Cong. 1st Sess. 14, 23, 26, 207-217, 301-302, 209-311 (1977); H.R. Rep. No. 95-564, 95th Cong., 1st Sess. 156, 158, 170 (1977).

¹⁶⁷ 43 FR 1829 (January 12, 1978), citing H.R. Rep. No. 95-294, 95th Cong., 1st Sess. 301-302 (1977).

177 and section 209: "Rather than being faced with 51 different standards, as they had feared, or with only one as they had sought, manufacturers must cope with two regulatory standards under the legislative compromise embodied in section 209(a).¹⁶⁸

EPA also believes it important to clarify that the record and the comments do not indicate that the CARB Board based its technological feasibility analysis, in order to determine the ability of manufacturers to meet CARB's standards within California, on the existence of any travel provisions or other regulatory provisions which may allow a manufacturer to take credit for certain ZEV sales outside of California.

Manufacturer Contentions Regarding Cost-Effectiveness

With regard to the Manufacturers' contention that CARB's ZEV regulation is not cost-effective in terms of the cost per ton of removing CO₂, EPA agrees with California's argument that case law clearly precludes EPA's consideration of this issue within the waiver context. Consistent with the court in *MEMA I*, the Agency has previously evaluated costs in the waiver context by looking at the actual cost of compliance in the lead time provided by the regulation, not the regulation's cost effectiveness.¹⁶⁹ As noted previously, EPA has clearly stated that "The issue of whether a proposed California requirement is likely to result in only marginal improvement in air quality not commensurate with its cost or is otherwise an arguably unwise exercise of regulatory power is not legally pertinent to my decision under section 209 * * *."¹⁷⁰ EPA has consistently afforded deference to CARB's policy judgments and has recognized that "The structure and history of the California waiver provision clearly indicate both a Congressional intent and an EPA practice of leaving the decision on ambiguous and controversial matters of public policy to California's judgment."¹⁷¹ To the extent the Manufacturers are raising general concerns regarding the cost associated with the ZEV technology and meeting applicable ZEV requirements, EPA has addressed this above.

¹⁶⁸ *Engine Manufacturers Association v EPA*, 88 F3d 1075, 1080 (DC Cir. 1996).

¹⁶⁹ 36 FR 17158 (August 31, 1971). See also 74 FR 3232744, 32775 (July 8, 2009).

¹⁷⁰ *Id.*

¹⁷¹ 40 FR 23102, 23104 (May 18, 1975). See also Decision Document accompanying waiver determination in 58 FR 4166 (January 13, 1993).

Consumer Demand

With respect to the consumer demand issues raised, we note that the record, based on comment from the Manufacturers and the Dealers, is insufficient to meet the burden of proof to counter the current and projected consumer demand evidence supplied by CARB and the other commenters supporting the waiver. EPA did not receive any evidence or data from commenters to refute the projections made by CARB or other commenters. Although the Dealers maintain that CARB's point that BEV and even FCVs are being marketed today is not sufficient to demonstrate the demand for hundreds of thousands of ZEVs that will be required to be produced by 2025, the Dealers only turn to the history of the ZEV program. We believe such history is instructive. However, it does not meet the burden of proof required to demonstrate that the ZEV requirements are technologically infeasible looking forward, given the substantial amount of lead time before the standards take effect and the steps that manufacturers and dealers can take to facilitate compliance with these standards (e.g. rebates and other incentives). In addition, we note that PHEV and ZEV costs are projected to decrease as demand increases and regulatory floors are established. EPA believes CARB easily meets the historical test of whether their emission standards result in "doubling or tripling" of costs as applied in *MEMA I* noted above. EPA has heard directly from consumer groups that express confidence that demand for advance technology vehicles exists today and continues to grow. In addition to this evidence, EPA also believes that the analyses of future ZEV market potential, noted above, provide additional evidence that CARB's projections are supportable. Moreover, while marketability is an important issue for Manufacturers and Dealers, it is questionable how relevant it is to basic technological feasibility. As discussed above, there is no real question about the basic feasibility of this technology, and that the cost of each vehicle, if carried across a Manufacturer's entire sales line, is not as high as to implicate basic feasibility. That matter of how Manufacturers and Dealers choose to market these vehicles is one of market choice, as Manufacturers and Dealers attempt to maximize sales at the expense of other Manufacturers and Dealers. That the industry as a whole will experience increased costs, and that such increased costs will create marketability issues, is clear. But these are not so significant to

implicate the technological feasibility of the vehicles for purposes of a waiver determination.

Infrastructure

The Manufacturers' recommendation that EPA deny a waiver for the 2018 and later ZEV amendments is based largely on an argument surrounding lack of market demand (discussed above) and infrastructure in the section 177 states. The comments state, "* * * while California's infrastructure and consumer market may be developing to the point where at some time in the future the introduction of the number of ZEVs required under the California regulations may be feasible in that State, the same is not true of all the Section 177 States that have adopted ZEV." ¹⁷²

However, as explained above, EPA has determined in previous waiver actions that section 209(b) does not authorize the Agency to consider the impacts of actions or potential actions taken by other states under section 177 in reviewing a waiver request. CARB provided considerable evidence of state and federal efforts and programs underway to ensure that the infrastructure needed for the ZEV program in California is available. The Manufacturers and Dealers do not take issue specifically with CARB's assertions regarding the infrastructure that has been, and will be, put in place to meet these requirements in California. Therefore, based on the record before me those opposing the waiver on this basis have not met their burden of proof.

Dealers' List of Feasibility Criteria

Lastly, EPA responds to the laundry list of requirements that the Dealers maintain is required in order for ZEVs to be marketable and thus for the ZEV regulations to be technologically feasible. The Dealers fail to provide any evidence to support their assertions nor do they refute the legal arguments and evidence otherwise in the record. For example, the Dealers fail to provide any evidence that ZEV vehicles are not as safe as the conventionally-fueled (conventional) vehicles of the same size. EPA agrees with CARB's statements that ZEV vehicles will meet the same safety requirements that conventional vehicles must meet. In any case, while EPA takes safety into consideration when examining the feasibility of emission standards, this basic feasibility does not require an examination of the relative safety of each vehicle.

With regard to performance—many ZEVs already achieve acceleration and

power characteristics expected on conventional vehicles. In addition, the Dealers provide no evidence that ZEVs lack performance characteristics that are essential for basic feasibility of the vehicle. ZEVs on the market today span a wide range of performance capability. The Mitsubishi iMiEV is a small four seat electric city car.¹⁷³ Nissan's Leaf offers 5 seats and a size comparable to a Nissan Versa.¹⁷⁴ Tesla's Model S is a larger sedan with luxury and performance comparable to other luxury sedans. Tesla's Roadster is a high performance two-seater EV.¹⁷⁵ Finally, Toyota's RAV4 EV is an electric version of their popular RAV4 SUV.¹⁷⁶ All these vehicles are designed to compete favorably on a performance basis with conventional cars in the same class.

EPA has not historically taken into consideration the range and refueling times. Moreover, NADA does not present any evidence or data to suggest necessary ranges and refueling times deemed essential by consumers. Nor do the Dealers provide evidence that BEVs are not now, and cannot be in the lead time permitted, be manufactured in a manner to be above these necessary ranges and times. Evidence in the record suggests that many consumers average drive trips and refueling expectations are well within the capacity of current ZEV technology. EPRI analyzed a "National Household Travel Survey" that found: about 95% of daily driving is under 90 total miles; about 80% of daily driving is under 40 total miles; about 65% of daily driving is under 20 miles; and, there seems to be little variation in daily driving habits between many factors such as weekday/weekend, seasons, rural/urban, income, etc.¹⁷⁷

EPA also notes that additional lead time is abundant, from nine to twelve years for the 2022–2025 timeframe for further developments to technology that can reasonably be expected.

c. Conclusion on Technological Feasibility

After its review of the information in this proceeding, EPA has determined that the industry opponents have not met the burden of producing the evidence necessary for EPA to find that California's LEV III/GHG standards and ZEV emission standards (as finalized on

¹⁷³ <http://www.mitsubishicars.com/MMNA/jsp/imiev/12/trims.do>.

¹⁷⁴ <http://www.nissanusa.com/leaf-electric-car/key-features>.

¹⁷⁵ <http://www.teslamotors.com/goelectric#>.

¹⁷⁶ <http://www.toyota.com/rav4ev/specs.html>.

¹⁷⁷ EPRI: Transportation Statistics Analysis for Electric Transportation, Technical Update EPRI #1021848, Dec 2011.

¹⁷² Manufacturers comment at 13.

December 6, 2012) are not consistent with Section 202(a).

5. Consistency of Certification Test Procedures

CARB notes that the test procedures for certifying ZEVs, AT PZEVs, and PZEVs are contained in the ZEV and LEV Standards and Test Procedures incorporated by reference in section 1962.1(h) and 1962.2(h) and are largely un-amended by the 2012 ZEV rulemaking. The federal Tier 2 regulations require manufacturers to measure emissions from ZEVs in accordance with the California test procedures. Accordingly there are no inconsistencies between the federal and California test procedures that would preclude a manufacturer from conducting one set of tests to demonstrate compliance with federal and California certification requirements. EPA has received no adverse comment or evidence of test procedure inconsistency and therefore we cannot deny the waiver on this basis.

6. Relevance of the Energy Policy and Conservation Act (EPCA) to the Waiver Decision

EPA received comment from the Dealers that CARB's waiver request for its GHG emission standards should be denied because CARB's standards are in direct conflict with EPCA. The Dealers note "EPCA expressly preempts state GHG emission standards because such laws relate to fuel economy standards."¹⁷⁸

As EPA has stated on numerous occasions, section 209(b) of the Clean Air Act limits our authority to deny California's requests for waivers to the three criteria therein, and EPA has refrained from denying California's requests for waivers based on any other criteria. Where the Court of Appeals for the District of Columbia Circuit has

reviewed EPA decisions declining to deny waiver requests based on criteria not found in section 209(b), the court has upheld and agreed with EPA's determination.¹⁷⁹

Evaluation of whether California's GHG standards are preempted, either explicitly or implicitly, under EPCA, is not among the criteria listed under section 209(b). EPA may only deny waiver requests based on the criteria in section 209(b), and inconsistency with EPCA is not one of those criteria. In considering California's request for a waiver, I therefore have not considered whether California's standards are preempted under EPCA. As in previous waiver decisions, the decision on whether to grant the waiver is based solely on the criteria in section 209(b) of the Clean Air Act and this decision does not attempt to interpret or apply EPCA or any other statutory provision.

VI. Decision

The Administrator has delegated the authority to grant California section 209(b) waivers of preemption to the Assistant Administrator for Air and Radiation. After review of the information submitted by CARB and other parties to this Docket, I find that those opposing the waiver request have not met the burden of demonstrating that California's regulations do not satisfy one or more of the three statutory criteria of section 209(b). For this reason, I am granting California's waiver request to enforce its ACC emission regulations, including the "deemed to comply" rule for GHG emissions. EPA also determines that CARB's amendments to the ZEV program as they affect 2017 and prior MYs are within the scope of previous waivers of preemption granted to California for its ZEV regulations. In the alternative, EPA's waiver of preemption for CARB's ACC

¹⁷⁹ See *Motor and Equipment Manufacturers Ass'n v. Nichols*, 142 F.3d 449, 462-63, 466-67 (DC Cir. 1998), *MEMA I* at 1111, 1114-20.

regulations includes a waiver of preemption for CARB's ZEV amendments as they affect all MYs, including 2017 and prior MYs.

My decision will affect not only persons in California but also persons outside the State who would need to comply with California's GHG emission regulations. For this reason, I hereby determine and find that this is a final action of national applicability.

Under section 307(b)(1) of the Act, judicial review of this final action may be sought only in the United States Court of Appeals for the District of Columbia Circuit. Petitions for review must be filed by March 11, 2013. Under section 307(b)(2) of the Act, judicial review of this final action may not be obtained in subsequent enforcement proceedings.

VII. Statutory and Executive Order Reviews

As with past waiver decisions, this action is not a rule as defined by Executive Order 12866. Therefore, it is exempt from review by the Office of Management and Budget as required for rules and regulations by Executive Order 12866.

In addition, this action is not a rule as defined in the Regulatory Flexibility Act, 5 U.S.C. 601(2). Therefore, EPA has not prepared a supporting regulatory flexibility analysis addressing the impact of this action on small business entities.

Further, the Congressional Review Act, 5 U.S.C. 801 *et seq.*, as added by the Small Business Regulatory Enforcement Fairness Act of 1996, does not apply because this action is not a rule, for purposes of 5 U.S.C. 804(3).

Dated: December 27, 2012.

Gina McCarthy,

Assistant Administrator, Office of Air and Radiation.

[FR Doc. 2013-00181 Filed 1-8-13; 8:45 am]

BILLING CODE 6560-50-P

¹⁷⁸ Dealers at 10.

CERTIFICATE OF SERVICE

I hereby certify that on **October 20, 2020**, I electronically filed the Joint Appendix, Volume 1 and Joint Appendix Volume 2 of State and Local Government Petitioners and Public Interest Petitioners with the United States Court of Appeals for the District of Columbia Circuit via the CM/ECF system. All parties that are represented by counsel registered as CM/ECF users will be served by that system. I further certify that service will be accomplished via email for the following participants:

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No. 19-1230

Consolidated with Nos. 19-1239, 19-1241, 19-1242, 19-1243,
19-1245, 19-1246, 19-1249, 20-1175, and 20-1178

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

UNION OF CONCERNED SCIENTISTS et al.,
Petitioners,

v.

NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION,
Respondent,

COALITION FOR SUSTAINABLE AUTOMOTIVE REGULATION et al.,
Respondent-Intervenors.

JOINT APPENDIX (VOLUME 2)

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TABLE OF CONTENTS

AGENCY ACTIONS (VOLUME ONE)

EPA & NHTSA, Final Actions, <i>The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program</i> , 84 Federal Register 51,310 (September 27, 2019) [full document]	JA001
EPA & NHTSA, Proposed Actions, <i>The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks</i> , 83 Fed. Reg. 42,986 (Aug. 24, 2018) (excerpts) [pp. 42,986-43,000, 43,209-17, 43,232-53, 43,470-89]	JA055
EPA, Notice of Decision, <i>Grant of a Waiver of Clean Air Act Preemption for California's Advanced Clean Car Program</i> , 78 Fed. Reg. 2112 (Jan. 9, 2013) [full document]	JA121

AGENCY RECORD DOCUMENTS (VOLUME TWO)

Union of Concerned Scientists, <i>Rising Temperatures, Worsening Ozone Pollution</i> , EPA-HQ-OAR-2018-0283-5683 (June 2011) (excerpts) [pp. 1-3]	JA155
California Air Resources Board, <i>Staff Report: Initial Statement of Reasons for the "LEV III" Amendments to the California Emission Standards</i> , EPA-HQ-OAR-2012-0562-0011 (Dec. 7, 2011) (excerpts) [pp. ES-3-4, 75-79].....	JA160
California Air Resources Board, <i>Staff Report: Initial Statement of Reasons, Proposed Amendments to the Zero Emission Vehicle Program Regulations</i> , EPA-HQ-OAR-2012-0562-0008 (Dec. 7, 2011) (excerpts) [pp. ES-1-2, 72, 75-79]	JA168
California Air Resources Board, <i>Clean Air Act § 209(b) Waiver Support Document</i> , EPA-HQ-OAR-2012-0562-0004 (May 2012) (excerpts) [pp. 1-17, 22]	JA177
Comments of California Air Resources Board, EPA-HQ-OAR-2012-0562-0371 (Oct. 19, 2012) [full document]	JA195

Letter from California Air Resources Board, to Janet Cohen, EPA, EPA-HQ-OAR-2012-0562-0373 (Nov. 14, 2012) [full document].....	JA216
California Air Resources Board, <i>Resolution 12-35</i> , EPA-HQ-OAR-2012-0562-0374 (Nov. 15, 2012) (excerpts) [pp. 1, 4].....	JA231
Mann, Michael and Gleick, Peter, <i>Climate Change and California Drought in the 21st Century</i> , EPA-HQ-OAR-2018-0283-5682 (March 31, 2015) [full document]	JA233
California Air Resources Board, <i>California's Advanced Clean Cars Midterm Review</i> , EPA-HQ-OAR-2018-0283-0016 (Jan. 18, 2017) (excerpts) [pp. ES-6, ES-34].....	JA235
Frankson, R. et al., <i>2017: California State Climate Summary</i> , EPA-HQ-OAR-2018-0283-5683 (2017) [full document]	JA238
Office of Environmental Health Hazard Assessment, California Environmental Protection Agency, <i>Indicators of Climate Change in California</i> , EPA-HQ-OAR-2018-0283-5481 (May 2018) (excerpts) [pp. S1-S13, 98-103]	JA255
Lutsey, Nic and Slowik, Peter, <i>The Continued Transition to Electric Vehicles in U.S. Cities</i> , EPA-HQ-OAR-2018-0283-5456 (July 2018) (excerpts) [pp. 1-5, 15]	JA276
Bedsworth, Louise et al., <i>California's Fourth Climate Change Assessment: Statewide Summary Report</i> , EPA-HQ-OAR-2018-0283-5454 (Aug. 2018) (excerpts) [pp. 13]	JA283
Comments of South Coast Air Quality Management District, NHTSA-2017-0069-0497 (Sept. 21, 2018) (excerpts) [pp. 1-3].....	JA285
Comments of Boulder County Public Health, NHTSA-2017-0069-0499 (Sept. 24, 2018) [full document]	JA288
Comments of T. Lamm, E. N. Elkind, and D. A. Farber, EPA-HQ-OAR-2018-0283-2592 (Oct. 16, 2018) (excerpts) [pp. 2].....	JA294

Comments of South Coast Air Quality Management District, EPA-HQ-OAR-2018-0283-4124 (Oct. 25, 2018) (excerpts) [pp. 1-3]	JA296
Comments of Northeast States for Coordinated Air Use Management (NESCAUM), EPA-HQ-OAR-2018-0283-4163 (Oct. 25, 2018) (excerpts) [pp. 13-14].....	JA299
Comments of G. Dotson, Assistant Professor of Law, University of Oregon, EPA-HQ-OAR-2018-0283-4132 (Oct. 26, 2018) [App’x A].....	JA302
Comments of New York State Department of Environmental Conservation, NHTSA-2017-0069-0608 (Oct. 26, 2018) (excerpts) [Add. pp. 1-2]	JA326
Comments of California Air Resources Board, EPA-HQ-OAR-2018-0283-5054 (Oct. 26, 2018) (excerpts) [pp. 33-40, 43-48, 283-84, 287-302, 308, 341-42, 365-373, 406-07]	JA330
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NHTSA-2018-0067-12411 (March 27, 2019) [full document] JA432



CLIMATE CHANGE **AND** YOUR HEALTH

Rising Temperatures, Worsening Ozone Pollution





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The Union of Concerned Scientists is a nonprofit partnership of scientists and citizens combining rigorous scientific analysis, innovative policy development, and effective citizen advocacy to achieve practical environmental solutions. Established in 1969, we seek to ensure that all people have clean air, energy, and transportation, as well as food that is produced in a safe and sustainable manner. We strive for a future that is free from the threats of global warming and nuclear war, and a planet that supports a rich diversity of life. Sound science guides our efforts to secure changes in government policy, corporate practices, and consumer choices that will protect and improve the health of our environment globally, nationally, and in communities throughout the United States. In short, UCS seeks a great change in humanity's stewardship of the earth.

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CLIMATE CHANGE AND YOUR HEALTH

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CONTENTS

2	Executive Summary
4	Introduction
5	Ozone Pollution and Climate Change— An Unhealthy Mix
10	A Closer Look at Our Methods and Assumptions
12	Ozone Is Bad for Your Health
14	Analyzing the Impact of Climate Change on Ozone Pollution
15	Health and Economic Impacts of the Climate Penalty on Ozone Pollution
20	Where Do We Go from Here?
22	Endnotes
24	References

Executive Summary

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The quality of life for America's children and their families is adversely affected when ozone pollution increases. Children who miss school because they are experiencing or recovering from an asthma attack may not only fall behind in their studies but also get less exercise and lose time with friends (because they cannot play outside when ozone levels are high). And for every child who goes to the doctor or stays home from school, there is probably a worried parent who is stressed and missing work.

MILLIONS OF AMERICANS SUFFER from the harmful effects of ground-level ozone pollution, which exacerbates lung diseases such as asthma and can cause breathing difficulties even in healthy individuals. The result is more time spent in hospital emergency rooms, as well as additional sick days and even premature deaths. These health impacts not only involve suffering; they are also costly, constituting a significant drag on the U.S. economy. While power plants and cars are among the main sources of ozone-forming pollutants (the chemical precursors to ozone), ozone's formation is dependent on temperature, among other conditions. As a result, climate change has the potential to increase ozone pollution—and its health and economic burdens—across large parts of the country both now and in the future.

This report from the Union of Concerned Scientists combines projections of future climate-induced temperature increases with findings on the relationship between ozone concentrations and temperature to illustrate a potential “climate penalty on ozone.”¹ This penalty demonstrates how higher temperatures could increase ozone pollution above current levels, assuming that emissions of ozone-precursor pollutants remain constant.

We analyzed this climate penalty's health consequences expected in 2020 and 2050, including increases in respiratory symptoms, hospital visits for the young and old, lost school days, and premature mortality, for most of the continental United States. We also projected the economic costs of these health impacts in 2020.

Key findings include:²

- Just nine years from now, in 2020, we estimate that the continental United States could pay an average of \$5.4 billion (2008\$) in health impact costs associated with the climate penalty on ozone.
- Higher ground-level ozone concentrations due to rising temperatures in 2020 could lead to an average of 2.8 million more occurrences of acute respiratory symptoms such as asthma attacks, shortness of breath, coughing, wheezing, and chest tightness. In 2050, that could rise to an average of 11.8 million additional occurrences.

- The climate penalty on ozone could lead to an average of 944,000 more missed school days in 2020. In 2050, that could rise to an average of 4.1 million additional missed school days.
- Higher ozone concentrations due to rising temperatures could lead to an average of 3,700 more seniors and 1,400 more infants hospitalized for respiratory-related problems in 2020. In 2050, that could rise to 24,000 more seniors and 5,700 more infants hospitalized.
- Many states and counties that are already struggling to control ozone pollution will have to work even harder to maintain healthy air quality in a warming climate.
- California and states in the Midwest and the Mid-Atlantic could be hit especially hard by the climate

penalty on ozone. California may experience the greatest health impacts, with an estimated average of \$729 million in 2020 alone.

The findings of this report illustrate yet another reason why we must take action to address climate change without delay—and why our inaction to date will lead directly to real costs within this decade. To make our air cleaner, the U.S. Environmental Protection Agency (EPA) must strengthen its current standards for ozone and ozone-forming pollutants that come from power plants, industry, and vehicles. But in the face of a rapidly warming world, these efforts alone will not be sufficient—we also need new strategies to reduce the pollution that causes climate change.

Climate change has the potential to increase ozone pollution—and its health and economic burdens—across large parts of the country both now and in the future.



**CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
AIR RESOURCES BOARD**

**STAFF REPORT:
INITIAL STATEMENT OF REASONS FOR PROPOSED RULEMAKING, PUBLIC
HEARING TO CONSIDER THE “LEV III” AMENDMENTS TO THE CALIFORNIA
GREENHOUSE GAS AND CRITERIA POLLUTANT EXHAUST AND EVAPORATIVE
EMISSION STANDARDS AND TEST PROCEDURES AND TO THE ON-BOARD
DIAGNOSTIC SYSTEM REQUIREMENTS FOR PASSENGER CARS, LIGHT-DUTY
TRUCKS, AND MEDIUM-DUTY VEHICLES, AND TO THE EVAPORATIVE EMISSION
REQUIREMENTS FOR HEAVY-DUTY VEHICLES**



This report has been reviewed by the staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Air Resources Board, nor does the mention of trade names or commercial products constitute endorsement or recommendation for use.

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At its March 2008 hearing, the Board directed staff to redesign the 2015 and later model year ZEV program by strengthening the requirement and focusing primarily on zero emission technologies – battery electric vehicles, hydrogen fuel cell vehicles, and plug-in hybrid electric vehicles – in order to ensure that these low GHG technology vehicles transition from the demonstration phase to full commercialization in a reasonable timeframe. The resulting proposed amendments to the ZEV program are presented in a separate staff report, also part of this comprehensive vehicle rulemaking package, the Advanced Clean Cars program.

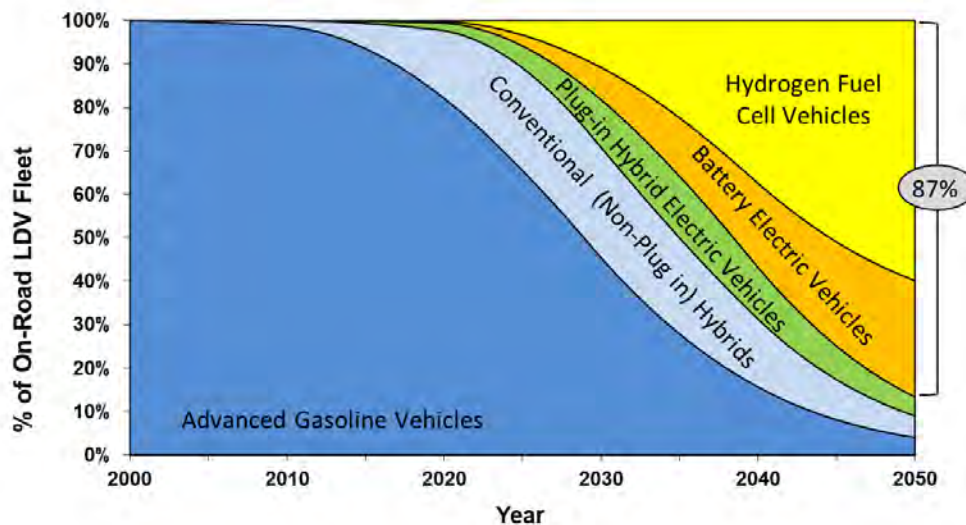
Advanced Clean Cars Program

Continuing its leadership role in the development of innovative and ground breaking emission control programs and to achieve California's goals of meeting ambient air quality standards and reducing climate changing GHG emissions, ARB staff has developed the Advanced Clean Cars (ACC) program. The Advanced Clean Cars program combines the control of smog-causing pollutants and greenhouse gas emissions into a single coordinated package of requirements for model years 2015 through 2025 and assures the development of environmentally superior cars that will continue to deliver the performance, utility, and safety vehicle owners have come to expect. The ZEV program will act as the focused technology-forcing piece of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of pure ZEVs and plug-in hybrid electric vehicles in the 2018-2025 model years. In addition, the Advanced Clean Cars program includes amendments to the Clean Fuels Outlet regulation that will assure ultra-clean fuels such as hydrogen are available to meet vehicle demands brought on by these amendments to the ZEV program.

Beyond 2025, the dominant force for lowering emissions from vehicles in California will be climate change. In order to meet our 2050 GHG goal, the new vehicle feet will need to be primarily composed of advanced technology vehicles such as electric and fuel cell vehicles by 2035 in order to have nearly an entire new and used advanced technology fleet by 2050. Accordingly, the Advanced Clean Cars program coordinates the goals of the LEV, ZEV, and Clean Fuels Outlet programs in order to lay the foundation for the commercialization and support of these ultra-clean vehicles.

Figure ES-1 shows the cumulative on-road passenger vehicle fleet mix for one scenario developed by staff that achieves California's 2050 GHG emission reduction goal. Importantly, ZEV sales must constitute nearly 100% of new vehicles in 2040 for ZEVs to constitute approximately 87% of the on-road fleet by 2050.

Figure ES-1. On Road Light-Duty Vehicle Scenario to Reach 2050 Goal



Criteria Emission Standards and New Certification Fuel Requirements

In order to achieve further criteria emission reductions from the passenger vehicle fleet, staff is proposing several amendments representing a significant strengthening of the LEV program. The major elements of the proposed LEV III program are:

- A reduction of fleet average emissions of new passenger cars (PCs), light-duty trucks (LDTs) and medium-duty passenger vehicles (MDPVs) to super ultra-low-emission vehicle (SULEV) levels by 2025;
- Replacement of separate NMOG and oxides of nitrogen (NOx) standards with combined NMOG plus NOx standards, which provides automobile manufacturers with additional flexibility in meeting the new stringent standards;
- An increase of full useful life durability requirements from 120,000 miles to 150,000 miles, which guarantees vehicles operate longer at these extremely low emission levels;
- A backstop to assure continued production of super-ultra-low-emission vehicles after PZEVs as a category are moved from the Zero-Emission Vehicle program to the LEV program in 2018;
- More stringent particulate matter (PM) standards for light- and medium-duty vehicles, which will reduce the health effects and premature deaths associated with these emissions;

nation's food supply; increasing droughts and higher temperatures put this production at risk.

After considering both observed and projected future effects of climate change (including key uncertainties, and the full range of risks and impacts to public health and welfare occurring within the State), the evidence points to the conclusion that climate change is already occurring at levels that harm our health and welfare, and that the effects will only worsen over time in the absence of regulatory action. California's transportation sector is the single largest contributor of GHGs in the State, producing close to 40% of all such emissions. On State highways in the coming decades, vehicle miles traveled are expected to continue to outstrip population growth under "business as usual" scenarios. Longer commute distances also have contributed to increases in vehicle miles traveled, while congestion has continued to increase; both factors contribute to GHG emissions. These trends indicate that if action is not taken that achieves significant long-term emission reductions, climate change will continue and its effects will worsen.

This chapter first presents the causes and projections for climate change (Section III.A.1.1). The chapter then discusses climate change pollutants (Section III.A.1.2), definition of global warming potentials used in the proposed regulation (Section III.A.1.3), indicators of climate change in California (Section III.A.1.4), and potential impacts of climate change on California (Section III.A.1.5). The chapter concludes with a brief discussion of abrupt climate change (Section III.A.1.6).

1.1. Climate Change Causes and Projections

Climate change is a shift in the "average weather" that a given region experiences. This is measured by changes in the features that we associate with weather, such as temperature, wind patterns, precipitation, and storms. Global climate change means change in the climate of the Earth as a whole. Global climate change can occur naturally; an ice age (due to variations in the Earth's orbit and inclination toward the sun that cause cyclical variations in solar energy received by the Earth) is an example of naturally occurring climate change. The Earth's natural climate has always been, and still is, constantly changing. The climate change we are seeing today, however, differs from previous climate change in both its rate and its magnitude.

The temperature on Earth is regulated by a system commonly known as the "greenhouse effect". Naturally occurring GHGs, primarily water vapor, CO₂, CH₄, and N₂O, absorb heat radiated from the Earth's surface. As the atmosphere warms, it in turn radiates heat back to the surface, to create what is commonly called the "greenhouse effect". The Earth's surface temperature would be about 34°C (61°F) colder than it is now if it were not for the natural heat trapping effect of GHGs. Water vapor is the most abundant and important of these naturally occurring GHGs. In addition to its direct effect as a GHG, clouds formed from atmospheric water vapor also affect the heat balance of the Earth by reflecting sunlight (a cooling effect), and trapping infrared radiation (a heating effect). Human activities add and subtract water vapor to

and from the atmosphere; however, these amounts are insignificant compared to the water moved by natural processes.

Fluctuations in levels of natural GHGs have been measured over the past 650,000 years. However, there are several reasons for attributing the rise in GHGs over the past 250 years to human activity rather than to naturally occurring climatic changes. The IPCC 4th assessment report (2007b)¹⁷ confirms that over the past 8,000 years, prior to industrialization in 1750, CO₂ concentration in the atmosphere increased by a mere 20 parts per million (ppm). The concentration of atmospheric CO₂ in 1750 was 280 ppm, and increased to 379 ppm in 2005. That is an enormous increase of 100 ppm in 250 years. For comparison, at the end of the most recent ice age there was approximately an 80 ppm rise in CO₂ concentration. This rise took over 5,000 years. Higher values than what we see today have only occurred many millions of years ago.

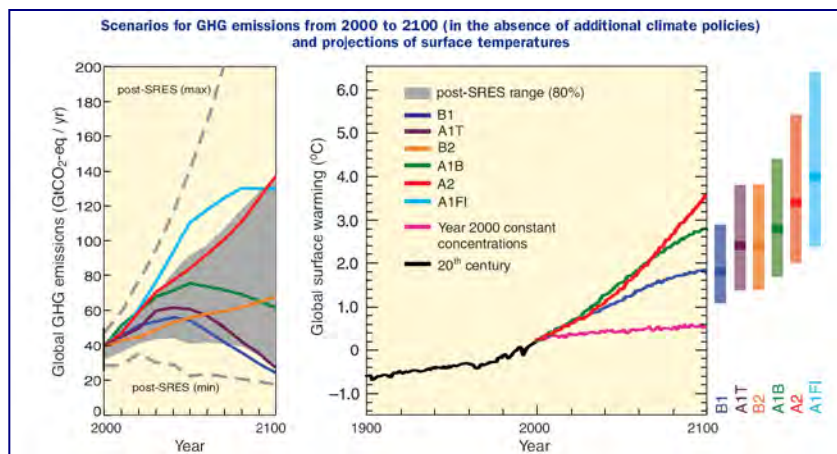
Human activities are exerting a major and growing influence on some of the key factors that govern climate by changing the composition of the atmosphere and by modifying the land surface. The human impact on these factors is clear. This increase has resulted from the burning of coal, oil, and natural gas, and the destruction of forests around the world to provide space for agriculture and other human activities. Rising concentrations of CO₂ and other GHGs are intensifying the Earth's natural greenhouse effect.

In its most recent assessment on climate change, the IPCC provided an estimate of global GHG emissions and projections of surface temperatures from 2000 to 2100 under six likely scenarios. Each scenario reflects a particular path for human society to grow. The main hypotheses concerning demography, agricultural practices, technology spreading, etc. are turned - through simple models - into projections about energy consumption, food production, and the corresponding GHG emissions. The IPCC report¹⁸ projects an increase of global GHG emissions by 25% to 90% (CO₂e) between 2000 and 2030 (see Figure III-A-1-1 below taken from IPCC 2007 synthesis report), with fossil fuels maintaining their dominant position in the global energy mix to 2030 and beyond. Including uncertainties in future GHG concentrations and climate modeling, the IPCC anticipates a warming of 1.1 C to 6.4 C (2.0°F to 11.5°F) by the end of the 21st century.

¹⁷ IPCC. (2007b). Technical Summary: *Climate Change 2007: The Physical Science Basis, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press. <https://www.ipcc-wg1.unibe.ch/publications/wg1-ar4/ar4-wg1-ts.pdf>

¹⁸ IPCC (2000), Special Report on Emissions Scenarios (SRES), available at <http://www.ipcc.ch/pdf/special-reports/spm/sres-en.pdf>

Figure III-A-1-1. Global GHG emission and temperature projections under different GHG emissions scenarios (taken from IPCC 2007c ¹⁹)



All emissions scenarios result in an increase in the atmospheric concentration of CO₂. For the six illustrative scenarios, the projected concentrations of CO₂ in the year 2100 range from 560 to 970 ppm, compared to about 280 ppm in the pre-industrial era and about 388 ppm in the year 2010. Every scenario imagines a world in which no explicit action is taken to combat GHG emissions. In the lowest-emission scenario, B1, it is assumed that technical and societal developments lead to a reduction in the use of fossil fuels. In this case, CO₂ levels are expected to continue rising, but to stabilize at a level that is roughly twice the pre-industrial level. Most analysts suggest that a doubling of GHG concentrations from pre-industrial levels will increase global temperatures about 3°C from pre-industrial levels, although many studies suggest the climate could be even more sensitive to a doubling of CO₂ concentrations.

Substantial scientific evidence indicates that an increase in the global average temperature of 2°C above pre-industrial levels (about 1.1°C above present levels) poses severe risks to natural systems and human health and well-being. Stabilizing the CO₂ concentrations at or below 450 ppm offers a 50% chance of keeping the global average temperature from rising more than 2°C, or 3.6°F, above pre-industrial levels. The same level is believed to result in a 33% chance of temperatures rising more than 3°C. Therefore, a 450 ppm CO₂ stabilization target generally represents the upper limit for the concentration of heat-trapping emissions in global policies that seek to avoid catastrophic climate change. Recent empirical evidence indicates climate change is taking place considerably faster than scientists had expected only a decade ago. Furthermore, paleoclimatic research indicates that earlier climate change episodes also took place rapidly. If rapid change is occurring, a considerably lower policy target than 450 ppm is justified. The goal of 350 ppm atmospheric CO₂ is supported by the most up-to-date science.

¹⁹ IPCC (2007c), Synthesis report; available at http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf).

The concentration of GHGs in the atmosphere is determined by the difference between the rate of emissions and the rate of uptake by the world's ecosystems and oceans. Since the rate of CO₂ emissions currently exceeds the rate of uptake, halting emissions is not enough to stop the build-up of atmospheric CO₂. Temperatures will continue to rise long after emissions are reduced and GHG concentrations are stabilized. Hence, reducing GHG concentrations in the atmosphere to the lowest feasible level is critical to limiting warming to no more than 2°C. There is considerable uncertainty as to whether we will reach the 2°C target given the lack of prompt and meaningful global action.

Executive Order S-3-05 established GHG targets for the State such as: returning to year 2000 emission levels by 2010; 1990 levels by 2020; and 80 percent below 1990 levels by 2050. If the industrialized world were to follow California's lead, it would increase the likelihood that California and the world would be on track to avoid the more severe climate change impacts. This estimate of the impact of an 80 percent reduction by the industrialized world has on global emissions depends crucially on the growth rate and energy strategies of the developing world.

In the Kyoto Protocol a number of industrialized countries (the "Annex I Parties") made commitments to limit or reduce GHG emissions by 2012. The current internationally-agreed mitigation targets apply only to industrialized countries and do not extend beyond 2012. Successfully limiting emissions in order to stabilize atmospheric GHG concentrations at acceptable levels will require the participation of all major emitting countries. The "most challenging" mitigation case would stabilize atmospheric concentrations of CO₂ at 450 ppm. This is significant because avoiding substantial temperature change by mid-century is a starting point for achieving more aggressive long-term targets. The 450 ppm target would make it possible to limit long-term global mean temperature increases and to avoid some of the most severe risks of climate change.

The climate system is highly dynamic: External "forcings" such as anthropogenic GHG emissions, "reflective" aerosol particles from volcanoes and fossil fuel combustion, and solar radiation alter the amount of radiation in the Earth's atmosphere. "Feedbacks" (such as cloud or ice-albedo feedbacks) amplify or dampen the effect of forcings. While all climate models project that significant warming will result of rising GHG concentrations, the amount of warming that will result from anthropogenic GHG emissions will depend on the intensity of and interactions between these forcings and feedbacks. The consequences of the warming will depend on the degree and speed of temperature rise, and the internal dynamics of the climate system—the atmosphere, oceans, land, ice sheets, and biosphere—and whether or not any non-linear climate thresholds are reached that result in catastrophic damages (IPCC 2007, Synthesis Report).

1.2. Climate Change Pollutants

Naturally occurring GHGs include water vapor, carbon dioxide, methane, nitrous oxide, and ozone (O₃). Several classes of halogenated substances that contain fluorine,

chlorine, or bromine are also GHGs, but they are, for the most part, solely a product of industrial activities. Chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) are halocarbons that contain chlorine, while halocarbons that contain bromine are referred to as bromofluorocarbons (i.e., halons).

Because CFCs, HCFCs, and halons are substances which deplete stratospheric ozone, they are regulated by the Montreal Protocol on Substances that Deplete the Ozone Layer. The United Nations Framework Convention on Climate Change (UNFCCC) defers to this earlier international treaty; consequently these gases are not included in national GHG inventories. However, large quantities of CFCs, halons, and other ozone depleting substances (ODS) produced prior to phase-out deadlines under the Montreal Protocol remain legally in use or storage in older equipment, building and appliance insulation, and other “banks.” ODSs not only contribute to the depletion of the stratospheric ozone layer, but they are also potent GHGs with global warming potentials up to thousands of times higher than CO₂. Without intervention, most of the banks are expected to be emitted by 2020 as a result of regular equipment and appliance turnover. The window for addressing emissions from banks is relatively narrow with every year lost translating into millions of tons of CO₂e emitted.

The Parties to the Montreal Protocol are preparing to take another important step towards better ozone layer protection and climate change mitigation to promote the destruction of ODS banks. These proposals seek to recover and destroy ODSs before they are emitted from existing stockpiles and from discarded products and equipment, and before they harm the ozone layer and climate system. To reduce statewide GHG emissions to 1990 levels by 2020, CARB is also considering policies to reduce emissions of high global warming potential gases—including ODS as well as ODS substitutes.

Other fluorine-containing gases—hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆)—do not deplete stratospheric ozone but are potent GHGs. These latter substances are addressed by the UNFCCC and accounted for in State and national GHG inventories. GHG concentrations in the atmosphere are a function of both the emissions of the GHGs and the effective lifetime of these gases. Because it takes one to two years to mix the emissions of a species throughout the troposphere, gases that are chemically stable and persist in the atmosphere over time scales of decades to centuries or longer are referred to in the IPCC as “long-lived” or “well-mixed” gases.

Each gas has a characteristic lifetime that is a function of the total atmospheric burden and the removal mechanism (i.e., sinks) for that gas. Each GHG has different interactions of each gas with the various available sinks, which include chemical reaction with the hydroxyl (OH) free radical or other highly reactive species, photolysis by sunlight, dissolution into the oceans, reactions on the surface, biological processes, or other mechanisms. According to the IPCC (2007), the lifetime of the HFCs of industrial importance range from 1.4 to 270 years, the lifetime of N₂O is 114 years, the lifetime of CH₄ is 12 years, and the lifetime of the PFCs and SF₆ range from 1,000 to 50,000 years. Carbon dioxide has a very different life cycle compared to the other

**CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
AIR RESOURCES BOARD**

STAFF REPORT: INITIAL STATEMENT OF REASONS

ADVANCED CLEAN CARS

**2012 PROPOSED AMENDMENTS TO THE
CALIFORNIA ZERO EMISSION VEHICLE PROGRAM REGULATIONS**

This report has been reviewed by the staff of the California Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Air Resources Board, nor does the mention of trade names or commercial products constitute endorsement or recommendation for use.

Date of Release: December 7, 2011
Scheduled for Consideration: January 26-27, 2012

EXECUTIVE SUMMARY

In 1990, the California Air Resources Board (ARB or the Board) adopted an ambitious program to significantly reduce the environmental impact of light-duty vehicles through the commercial introduction of zero emission vehicles (ZEV) into the California fleet. Since then the requirements of the ZEV program have resulted in several important milestones being achieved. Many gasoline engines now emit at near zero emission levels of smog-forming emissions. Non-plug-in hybrid electric vehicles (HEV) have been commercialized, and the number of models offered for sale is quickly expanding. Recently, battery electric vehicles (BEV) and plug-in hybrid electric vehicles (PHEV) have been introduced for sale, and fuel cell electric vehicles (FCV) are expected to be sold beginning in 2015. This movement to commercialize advanced clean cars has occurred in large part because of the ZEV regulation.

The ZEV regulation, which affects passenger cars and light-duty trucks, remains critically important to California's efforts to meet health based air quality goals. More recently, the program's goals have evolved to also include paving the way for achieving California's long term climate change emission reduction goals. For these reasons, California remains committed to the commercialization of ZEV technologies.

At its March 2008 hearing, the Board directed staff to redesign the 2015 and subsequent model year requirements for the ZEV regulation. It directed staff to strengthen the regulation above what is currently required and focus primarily on the zero emission drive, that is BEV, hydrogen FCV, and PHEV technologies. The goal of the Board direction was to ensure California as the central location for moving advanced, low greenhouse gas (GHG) technology vehicles from the demonstration phase to commercialization.

In 2009, staff undertook an analysis of pathways to meeting California's long term 2050 GHG reduction goals in the light duty vehicle subsector.¹ The analysis showed ZEVs will need to reach nearly 100 percent of new vehicle sales between 2040 and 2050, with commercial markets for ZEVs launching in the 2015 to 2020 timeframe. The analysis concluded that even widespread adoption of advanced conventional technologies, like non-plug-in HEVs, will not be enough to meet the 2050 targets. Staff presented its findings at the December 2009 Board hearing.

At the December hearing, the Board adopted Resolution 09-66, reaffirming its commitment to meeting California's long term air quality and climate change reduction goals through commercialization of ZEV technologies. The Board further directed staff to consider shifting the focus of the ZEV regulation to both GHG and criteria pollutant emission reductions, commercializing ZEVs and PHEVs in order to meet the 2050 goals, and to take into consideration the new Low Emission Vehicle (LEV III) fleet standards and propose revisions to the ZEV regulation accordingly.

¹ California Governor Arnold Schwarzenegger enacted Executive Order S-03-05, requiring a reduction in state-wide GHG emissions to 80-percent below 1990 levels by 2050

This rulemaking is an opportunity for the Board to commit to the transformation of California's light-duty vehicle fleet. As the technology-forcing piece of the Advanced Clean Car package, the ZEV regulation along with new LEV III criteria pollutant and GHG standards can be the catalyst to that transformative process. Proposed amendments to the regulation focus on technologies that help meet long term emission reduction goals, simplify the program where needed, and increase requirements for 2018 and subsequent model years.

Proposed Amendments to the Regulations

2009 through 2017 Model Year Amendments

Staff's goal for amendments affecting the current ZEV regulation through 2017 model year is to make minor mid-course corrections and clarifications, and enable manufacturers to successfully meet 2018 and subsequent model year requirements. The amendments include:

- A. *Provide Compliance Flexibility:* Remove carry forward credit limitations for ZEVs, allowing manufacturers to bank ZEV credits indefinitely for use in later years. Slightly reduce the 2015 through 2017 credit requirement for intermediate volume manufacturers (IVM, less than 60,000 vehicles produced each year), to allow them to prepare for requirements in 2018. Extend the provision that allows ZEVs placed in any state that has adopted the California ZEV regulation to count towards the ZEV requirement through 2017 (i.e. extending the "travel provision" for BEVs through 2017).
- B. *Adjust Credits and Allowances:* Increase credits for Type V (300 mile FCV) ZEVs to appropriately incentivize this longer term technology.
- C. *Add New Vehicle Category:* Add Type I.5x and Type IIx vehicles as a compliance option for manufacturers to meet up to half of their minimum ZEV requirement. The proposed vehicle is closer to a BEV than to a PHEV: a vehicle with primarily zero-emission operation equipped with a small non-ZEV fuel auxiliary power unit (APU) for limited range extension.

2018 and Subsequent Model Year Amendments

Staff's goal for the proposed amendments for 2018 and subsequent model years is to achieve ZEV and transitional zero emission vehicle (TZEV; most commonly a PHEV) commercialization through simplifying the regulation and pushing technology to higher volume production in order to achieve cost reductions. The amendments include:

- A. *Increase Requirement for 2018 and Subsequent Model Years.* Increase requirements which push ZEVs and TZEVs to over 15 percent of new sales by 2025. This will ensure production volumes are at a level sufficient to bring

6 EMISSIONS AND HEALTH IMPACTS

Staff's proposed ZEV amendments will result in an emissions benefit as compared to current ZEV regulations, as will the entire ACC program as compared to no ACC program. Staff performed a combined LEV, ZEV, and CFO emissions analysis, which can be found in Section V of the LEV ISOR. For the purposes of the ZEV regulation analysis, staff's emissions assessment includes both criteria pollutant, particulate matter (PM) and GHG emissions, accounting for both tailpipe emissions in PHEVs, and upstream emissions from all advanced technologies considered. As illustrated below, the ZEV requirements provide benefits beyond that achieved by using a fleet NMOG + NOx average as proposed in the LEV III criteria emission regulation. This is primarily because upstream criteria and PM emissions will be reduced after accounting for higher electricity and hydrogen production and lower gasoline production at refineries. However, because vehicles produced for the ZEV regulation are counted in the LEV III GHG fleet average standard, and because the GHG fleet average standard accounts for differences in upstream emissions for electricity and hydrogen, the ZEV regulation does not result in further GHG emission improvements beyond the LEV III GHG program.

The recently updated EMFAC 2011 was used to assess the vehicle emission impacts of staff's proposal. Using EMFAC, staff modeled the proposed requirements and compared these results to a vehicle fleet under the current ZEV regulation (ARB, 2011b). A separate model was used to estimate upstream emissions, including production and delivery of electricity and hydrogen and vehicle manufacturing emissions.⁶⁸ Emission impacts from the Regulatory Alternatives A (lower case) and B (higher case) are not presented here, although impacts from Alternative C (existing regulation) are shown.

As stated in Section 1, climate change poses a serious threat to the economic well-being, public health, natural resources, and environment of California. According to staff's 2009 analysis, ZEVs are the most important technology for the LDV to achieve long-term GHG emission reductions. As for criteria pollutant emissions, NOx emissions in the greater Los Angeles region must be reduced by two thirds to meet the current ozone attainment goal, even after considering all of the regulations in place today, with the most significant share of needed emission reductions coming from long-term advanced clean air technologies. In the San Joaquin Valley, the SIP identified the need to reduce NOx emissions by 80 tons/day in 2023 through the use of long-term and advanced technology strategies. To put this in context, this is equivalent to eliminating the NOx emissions from all on-road vehicles operating in these regions. This implies ZEVs are needed as a critical part of the future California fleet to achieve climate change goals and critical criteria pollutant emission reductions.

⁶⁸ See Section V LEV III ISOR for more information.

PM (produced in the atmosphere from the precursor NO_x) are between 330 and 530. See the LEV III ISOR, subsection V.F for more details on this assessment of health impacts.

6.4 Emissions Impacts

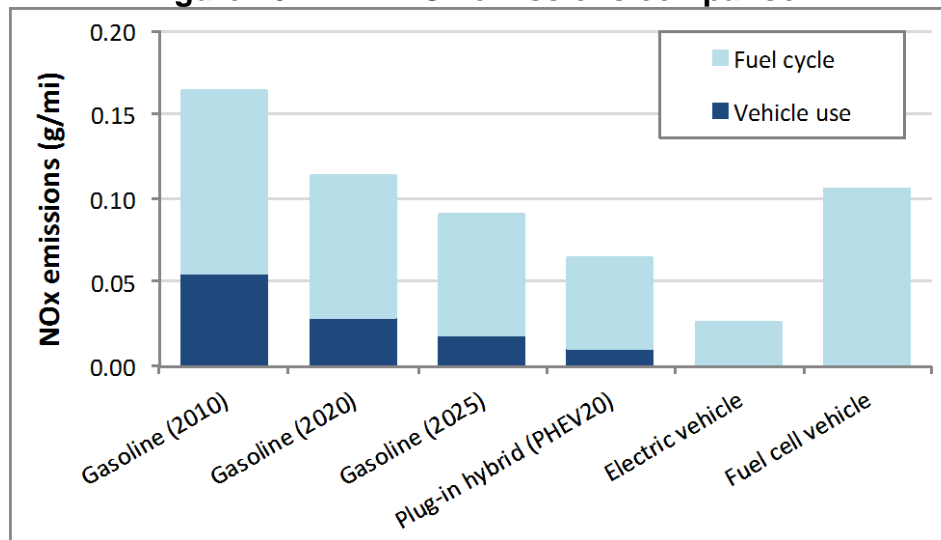
Staff analyzed the emissions impacts resulting from the ZEV proposal compared to the existing regulation. Similar to the cost analysis, this was done assuming manufacturers also complied with proposed LEV III fleet standard. Several scenarios were created to evaluate a LEV III fleet with and without the new ZEV proposal.⁷⁶

WTW emissions profiles were derived from the upstream emissions factors and the LEV III fleet vehicle efficiency attributes. This information is summarized in Section V.E of the LEV III Staff Report.

6.4.1 Emissions Comparisons: Vehicle Technologies

BEVs, FCVs, and PHEVs are all ultra-low criteria pollutant and GHG emitting technologies, even on a WTW basis. WTW emissions include upstream emissions from fuel production and vehicle manufacturing, as well as vehicle emissions from PHEVs. Three categories of conventional vehicles are shown to emphasize that their emissions profiles are improving over time as a result of the proposed LEV III Criteria Pollutant and GHG regulations.

Figure 16: WTW NO_x emissions comparison



⁷⁶ In developing this new analysis, it was not accurate to compare this to the ZEV emissions impacts from the 2008 staff analysis for two reasons. The proposed LEV III emissions regulations mean that the entire fleet will become cleaner with or without the ZEV regulation. Additionally, the 2008 staff analysis only included the South Coast air basin emission inventory.

Figure 17: WTW PM emissions comparison

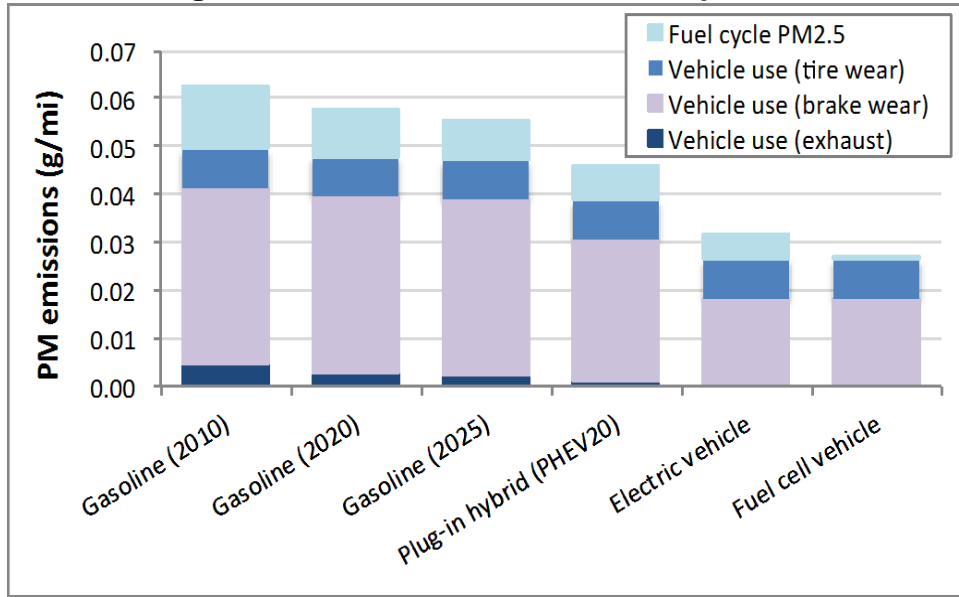
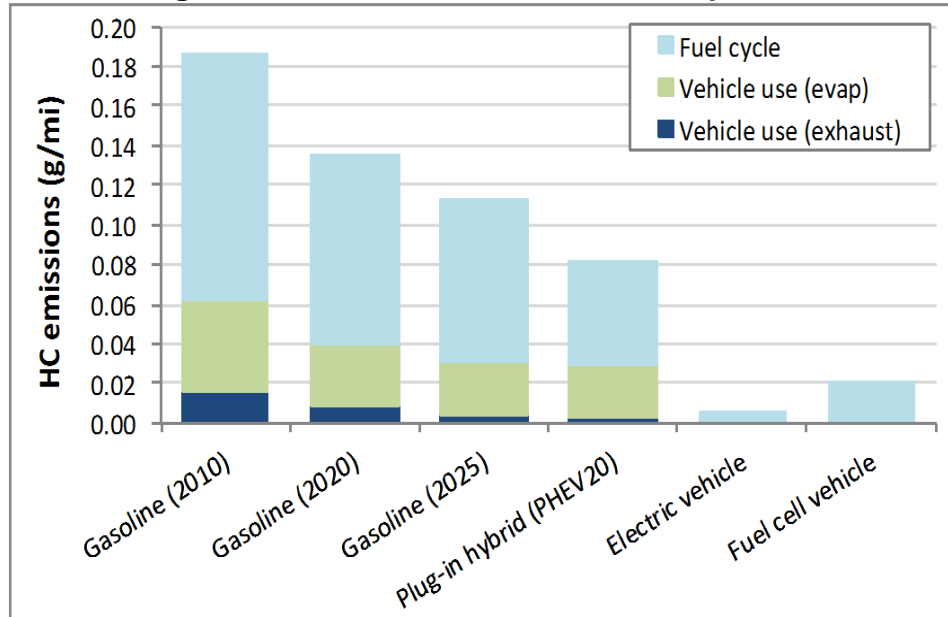
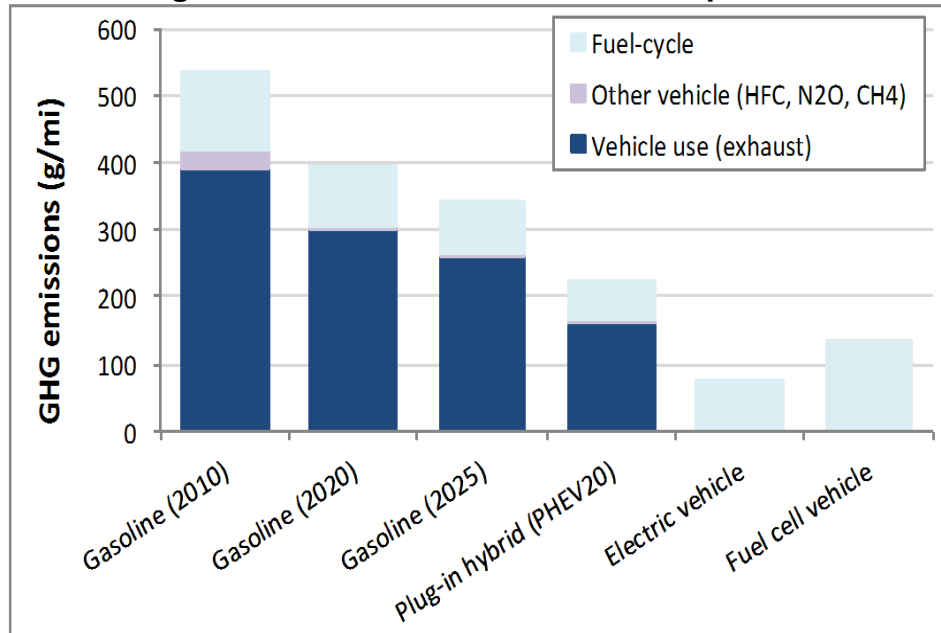


Figure 18: WTW ROG emissions comparison



*ROG means reactive organic gas

Figure 19: WTW GHG emissions comparison

6.4.2 Total Emissions – Criteria and PM

Overall, there will be a reduction in criteria pollutants as a result of the proposed ACC program standards. Criteria pollutant emission benefits for the ACC program are fully realized in the 2035-2040 timeframe when nearly all vehicles operating in the fleet are expected to be compliant with the proposed standards. By 2035 reactive organic gas (ROG) emissions would be reduced by an additional 34 percent, and NO_x emissions, by an additional 37 percent, compared to 2035 without the proposed ACC rules.

Under the proposed rule, the new PM_{2.5} standard is reduced to 3 mg/mi in 2020 and 1 mg/mi in 2028. With these standards, PM_{2.5} emissions will be essentially unchanged between 2010 and 2040 as growth in VMT offsets the tightening of the standard.

There is no benefit from including the ZEV proposal in terms of vehicle (tank-to-wheel or TTW) emissions. The LEV III criteria pollutant fleet standard is responsible for those emission reductions in the fleet; the fleet would become cleaner regardless of the ZEV regulation because manufacturers would adjust their compliance response to the standard by making cleaner conventional vehicles. However, upstream criteria and PM emissions are not captured in the LEV III criteria pollutant standard, so additional electricity and fuel production in the fleet results in increased upstream criteria pollutant emissions.

Table 6.1 presents the emissions impacts in WTW criteria pollutant and PM emissions in 2030 due to staff's proposal. 2030 was chosen as a reference year to account for a significant amount of fleet turn-over.

Table 6.1: Statewide Criteria and PM Emissions in 2030 (tons per day)¹

2030	ROG	NMOG+ NOx	PM
LEVIII fleet WTW emissions <u>without</u> new ZEV proposal	231	233	56.4
LEVIII fleet WTW emissions <u>with</u> new ZEV proposal	225	229.5	56.2

¹ Refer to the LEVIII ISOR Section V and Appendix Q for additional details. Includes reduced petroleum upstream emissions and increased hydrogen and electricity production emissions

The upstream emissions from the production of hydrogen and electricity represents a very small fraction of the combined vehicle and upstream emissions impacts of the fleet, and is far outweighed by the reduction in gasoline production emissions, creating the net benefit shown in Table 6.1 and 6.2. Additionally, a portion of these upstream emissions are in non-urban areas.⁷⁷

Table 6.2 below provides expanded details on the emission impacts shown in Table 6.1, and shows the WTW impacts for these emissions types.⁷⁸

Table 6.2: Detailed Statewide Criteria and PM Emission Inputs in 2030 (tons per day)

2030	ROG	NOx	PM
LEVIII fleet vehicle emissions (TTW) ¹	126	116	26
Upstream emissions from LEVIII fleet <u>without</u> ZEV proposal (WTT)	105	117	30.4
LEVIII fleet WTW emissions benefits <u>without</u> new ZEV proposal	231	233	56.4
Increased upstream emissions from hydrogen	0.22	1.11	0.27
Increased upstream emissions from electricity	0.24	1.00	0.22
Reduced upstream refinery emissions due to ZEVs	-6.4	-5.6	-0.66
LEVIII fleet WTW emissions benefits <u>with</u> new ZEV proposal	225	229.5	56.2

Criteria and PM emissions benefits will vary by region throughout the state depending on the location of emission sources. Refinery emission reductions will occur primarily in the east Bay Area and South Coast region where existing refinery facilities operate. As refinery operations reduce production and emissions, the input and output activities, such as truck and ship deliveries, will also decline. This includes crude oil imported through the Los Angeles and Oakland ports, as well as pipeline and local gasoline truck distribution in all regions of the state.

The small increase in upstream emissions associated with new electricity and hydrogen transportation fuel production will occur in various regions. Hydrogen production will predominantly occur from existing centralized hydrogen facilities already operating to supply refinery and industrial applications. These facilities are primarily located in the large metropolitan areas near gasoline refinery operations. The majority of early FCV sales are expected to occur in the South Coast region, the hydrogen facilities in this region will likely be used to produce the fuel for the market.

⁷⁷ For details on how these emissions are incorporated into the full fleet, refer to the LEVIII ISOR Section V.E.

⁷⁸ Refer to the LEVIII ISOR Appendix Q for additional details and a graphical representation of the upstream portion of this analysis.

Electricity production increases will occur throughout the state at power facilities that supply regions where BEV and PHEV sales and use occur. Staff assumes that by 2020, emissions associated with plug-in vehicle charging will be characterized by new power facilities added to the grid between now and 2020. This is assumed to be cleaner natural gas facilities as well as new renewables to comply with California's 33 percent renewable portfolio standard (RPS).

The upstream emissions impacts are quantified in the LEVIII ISOR in Appendix V.E, and include an estimation of the split between urban and non-urban source locations.

6.4.3 Total Emissions - Climate Change

Overall, the ACC program would provide major reductions in GHG emissions. By 2025, CO₂ emissions would be reduced by almost 14 million metric tonnes (MMT) per year, which is 12 percent from baseline levels. In reduction increases in 2035 to 32 MMT which is a 27 percent reduction from baseline levels. By 2050, the proposed regulation will reduce emissions by more than 42MMT per year, which is a reduction of 33 percent from baseline levels.

The ZEV regulation does not provide GHG emission reductions in addition to the LEV III GHG regulation given that ZEV emissions are included in determining compliance with the GHG standard. Specifically, because the GHG standard includes upstream emissions, in addition to the vehicle emissions, there is no difference in GHG emissions under varying ZEV scenarios.

Given that climate change emissions remain in the upper atmosphere for long periods of time (50-100 years), climate impacts are a function of the cumulative emissions. As a result, early reduction in annual climate emission rates is important to ultimately stabilize the atmosphere. For the 2050 emission projections from this proposal, emission rates were assumed to remain fixed at the levels in this analysis: 2020 emission rates for upstream factors and 2025 emission rates for vehicle performance.

6.4.4 Energy Diversity and Energy Demand

The vehicle technologies expected to be used in compliance with the regulation typically use fuel more efficiently and/or use alternative fuels, and thus when fully commercialized will reduce demand for petroleum fuels. Reduced demand for gasoline and diesel alleviates the reliance on a single fuel source, creating a more robust fuel supply. Additionally, the erratic and increasing price trends of oil create economic losses for California. Reducing gasoline demand will also reduce the need for additional refining, transportation and distribution facilities, thus preventing additional air and water pollution as noted above.

Moreover, because electricity and hydrogen can be produced from renewable resources such as solar, wind, or hydropower, or biomass feedstock, the staff's proposed amendments would increase the number of vehicles using these fuels and help pave the way towards a sustainable energy future.

**BEFORE THE
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**In the Matter of California’s Request for)
Waiver Action Pursuant to Clean Air)
Act Section 209(b) for Amendments to)
California’s Zero Emission Vehicle)
Regulation and Low Emission Vehicle)
Regulations)**

**CLEAN AIR ACT § 209(b) WAIVER SUPPORT DOCUMENT SUBMITTED BY THE
CALIFORNIA AIR RESOURCES BOARD**

May 2012

I. INTRODUCTION

California’s Air Resources Board (CARB or the Board) has developed the Advanced Clean Cars program, a pioneering approach of a “package” of regulations that, although separate in construction, are related in terms of the synergy developed to address interrelated ambient air quality needs and climate change.

The Advanced Clean Cars program combines the control of smog, soot causing pollutants and greenhouse gas emissions into a single coordinated package of requirements for model years (MY) 2015 through 2025 and assures the development of environmentally superior passenger vehicles. The Advanced Clean Cars package includes amendments to three regulations: the Low Emission Vehicles regulation (LEV), the Zero Emission Vehicles regulation (ZEV), hereinafter “2012 ZEV/LEV Amendments,” and the Clean Fuels Outlet regulation. Two of these regulations, LEV and ZEV, require a federal waiver submittal under the Clean Air Act (CAA).

The earliest requirements of the LEV regulation as amended are set to affect MY 2014 vehicles. Consequently, manufacturers would benefit from the increased lead time that an expedited consideration of this waiver request would allow. The remainder of this support document provides background for California’s LEV and ZEV regulations, details their recent amendments, and gives the basis for CARB’s waiver or within the scope request for each.

II. ZEV REGULATION

A. BACKGROUND AND WAIVER HISTORY

In 1990, CARB adopted an ambitious program to significantly reduce the environmental impact of light-duty vehicles through the commercial introduction of ZEVs into the California fleet. The ZEV program, which was a part of California’s first-generation low-emission

vehicle regulations (LEV I), has been modified five times since its inception – in 1996, 1998/1999, 2001, 2003, 2008, and most recently in 2012.¹

The 2012 ZEV amendments flow from the Board's 2008 direction to CARB staff to redesign the 2015 and subsequent MY requirements for the ZEV regulation. The Board directed its staff to strengthen the regulation above what was currently required and focus primarily on zero emission drive, that is battery electric vehicle (BEV), hydrogen fuel cell electric vehicle (FCV), and plug-in hybrid electric vehicle (PHEV) technologies. The goal of the Board direction was to maintain California as the central location for moving advanced, low greenhouse gas (GHG) technology vehicles from the demonstration phase to commercialization.

In 2009, CARB staff analyzed pathways to meeting California's long term 2050 GHG reduction goals in the light-duty vehicle subsector. The analysis showed that ZEVs would need to reach nearly 100 percent of new vehicle sales between 2040 and 2050, with commercial markets for ZEVs launching in the 2015 to 2020 timeframe. The analysis concluded that even widespread adoption of advanced conventional technologies, like non-plug-in hybrid electric vehicles (HEV), would not be enough to meet the 2050 GHG targets. Staff presented its findings at the December 2009 Board hearing.

At the December 2009 hearing, the Board adopted Resolution 09-66, reaffirming its commitment to meeting California's long term air quality and climate change reduction goals through commercialization of ZEV technologies. The Board further directed staff to consider shifting the focus of the ZEV regulation to both GHG and criteria pollutant emission reductions, commercializing ZEVs and PHEVs in order to meet the 2050 goals, and to take into consideration the new LEV fleet standards and propose revisions to the ZEV regulation accordingly.

In addition to the Board's directives, in 2010, President Barack Obama directed the United States Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA) to work with California to develop GHG fleet standards for MY 2017 through 2025 LDVs. The Joint Technical Assessment Report (TAR), which was developed by EPA, NHTSA, and CARB, was released in September 2010. The report concluded "electric drive vehicles including hybrid(s)...battery electric vehicles...plug-in hybrid(s)...and hydrogen fuel cell vehicles...can dramatically reduce petroleum consumption and GHG emissions compared to conventional technologies.... The future rate of penetration of these technologies into the vehicle fleet is not only related to future GHG and corporate average fuel economy (CAFE) standards, but also to future reductions in HEV/PHEV/EV [electric vehicle] battery costs, [and] the overall performance and consumer demand for the advanced technologies...."² Manufacturers confirmed in meetings leading up to the release of the TAR their commitment to develop

¹ A detailed account of these modifications, and their waiver history, can be found in 71 Fed Reg 78190-78191(Dec. 28, 2006) and 76 Fed Reg 61095-61096 (Oct 3, 2011).

² EPA, 2010. United States Environmental Protection Agency, National Highway Safety and Traffic Administration and California Air Resources Board. September 2010. "Interim Joint Technical Assessment Report: Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2017-2025" (p. vii).

ZEV technologies. "...[A] number of the firms suggested that in the 2020 timeframe their U.S. sales of HEVs, PHEVs, and EVs [electric vehicle] combined could be on the order of 15-20 percent of their production."³

For the California ZEV rulemakings described above, the Board sought and obtained waivers of federal preemption from the EPA under Clean Air Act (CAA) section 209(b). EPA granted California an initial waiver of federal preemption for California's original 1990 ZEV requirements in January 1993 as part of the LEV I waiver.⁴ In January 2001, it found that the Board's 1996 ZEV amendments, which amended manufacturer ZEV production mandates for MY 1998 through 2002, were within the scope of the originally granted 1993 waiver.⁵ In December 2006, EPA determined that the 1999, 2001, and 2003 ZEV amendments as they applied to 2007 and prior MY passenger cars and light-duty trucks equal to or less than 3,750 pounds loaded vehicle weight (LDT1) also fell within the scope of the 1993 waiver.⁶ It further granted California a new waiver for MY 2007 through 2011 passenger cars and light-duty trucks, including light-duty trucks with a loaded vehicle weight greater than 3,750 pounds (LDT2).⁷

In its December 2006 decision, EPA expressly made no finding as to MYs 2012 and later.⁸ In September 2009, CARB submitted a Waiver request to EPA seeking confirmation that amendments to the ZEV regulation adopted in 2008, as they relate to the vehicles of 2011 and earlier MYs, were within the scope of EPA's prior ZEV waivers. Additionally, CARB sought confirmation that its 2008 ZEV amendments, as they relate to 2012 and later MYs, were within the scope of EPA's prior waivers or otherwise met the criteria for a waiver of preemption. On October 3, 2011, EPA determined that amendments to the ZEV regulations, as they affected 2011 and prior MYs, were within the scope of previous waivers for the ZEV regulations (or in the alternative qualified for a new waiver).⁹ At that time EPA also granted a waiver allowing California to enforce the 2008 ZEV amendments as they affected 2012 and later MYs.¹⁰

B. 2012 ZEV AMENDMENTS

The subject amendments to California's ZEV regulation are described below in two parts based on the timeframe during which they apply. These timeframes are: 1) MY 2012 through 2017; and 2) MY 2018 and beyond. The amendments identified in this section B. represent the most significant changes during each of these timeframes.

³ *Id.* at pp. 2-5.

⁴ 58 Fed.Reg. 4166 (Jan. 13, 1993).

⁵ 66 Fed.Reg. 7751 (Jan. 25, 2001). See section IV.A.1., *infra*, for discussion of EPA's within the scope analysis.

⁶ 71 Fed.Reg. 78190 (Dec. 28, 2006). In the alternative, EPA found that the amendments affecting these vehicles also met the requirements for a granting of a full waiver. *Id.*, Decision Document accompanying waiver decision at p. 61.

⁷ *Id.*

⁸ *Id.*

⁹ 76 Fed.Reg. 61095 (Oct. 3, 2011).

¹⁰ *Id.*

1. 2009 through 2017 Model Year Amendments

CARB's goal for amendments affecting the current ZEV regulation through MY 2017 was to make minor mid-course corrections and clarifications and to enable manufacturers to successfully meet 2018 and subsequent MY requirements. These amendments included:

- a. *Provision of Compliance Flexibility:* Removed carry forward credit limitations for ZEVs, allowing manufacturers to bank ZEV credits indefinitely for use in later years. Slightly reduced the 2015 through 2017 credit requirement for intermediate volume manufacturers (IVM, less than 60,000 vehicles produced each year), to allow them to better prepare for requirements in 2018. Extended the provision that allows ZEVs placed in any state that has adopted the California ZEV regulation to count towards the ZEV requirement through 2017 (i.e. extending the "travel provision" for BEVs through 2017).
- b. *Adjustment of Credits and Allowances:* Increased credits for Type V (300 mile FCV) ZEVs to appropriately incentivize this longer-term technology.
- c. *Addition of New Vehicle Category:* Added Type I.5x and Type IIx vehicles (collectively "BEVx" vehicles) as a compliance option for manufacturers to meet up to half of their minimum ZEV requirement. The proposed vehicle types are closer to a BEV than to a PHEV, in that they are vehicles primarily designed for zero-emission operation but are equipped with a small non-ZEV fuel auxiliary power unit (APU) to be used only for limited range extension if the zero-emission capacity is depleted.

2. 2018 and Subsequent Model Year Amendments

CARB's goal for amendments affecting 2018 and subsequent MYs is to achieve ZEV and transitional zero-emission vehicle (TZEV; most commonly a PHEV) commercialization through simplifying the regulation and pushing technology to higher volume production in order to achieve cost reductions. The amendments included:

- a. *Increased ZEV Requirement for 2018 and Subsequent MYs:* Increased requirements which push ZEVs and TZEVs to over 15 percent of new sales by 2025. This will ensure production volumes are at a level sufficient to bring battery and fuel cell technology down the cost curve and reduce incremental ZEV prices.
- b. *Regulation Focused on ZEVs and TZEVs:* Removed PZEV (near-zero emitting conventional technologies) and advanced technology PZEV (AT PZEV, typically non-plug-in HEVs) credits as compliance options for

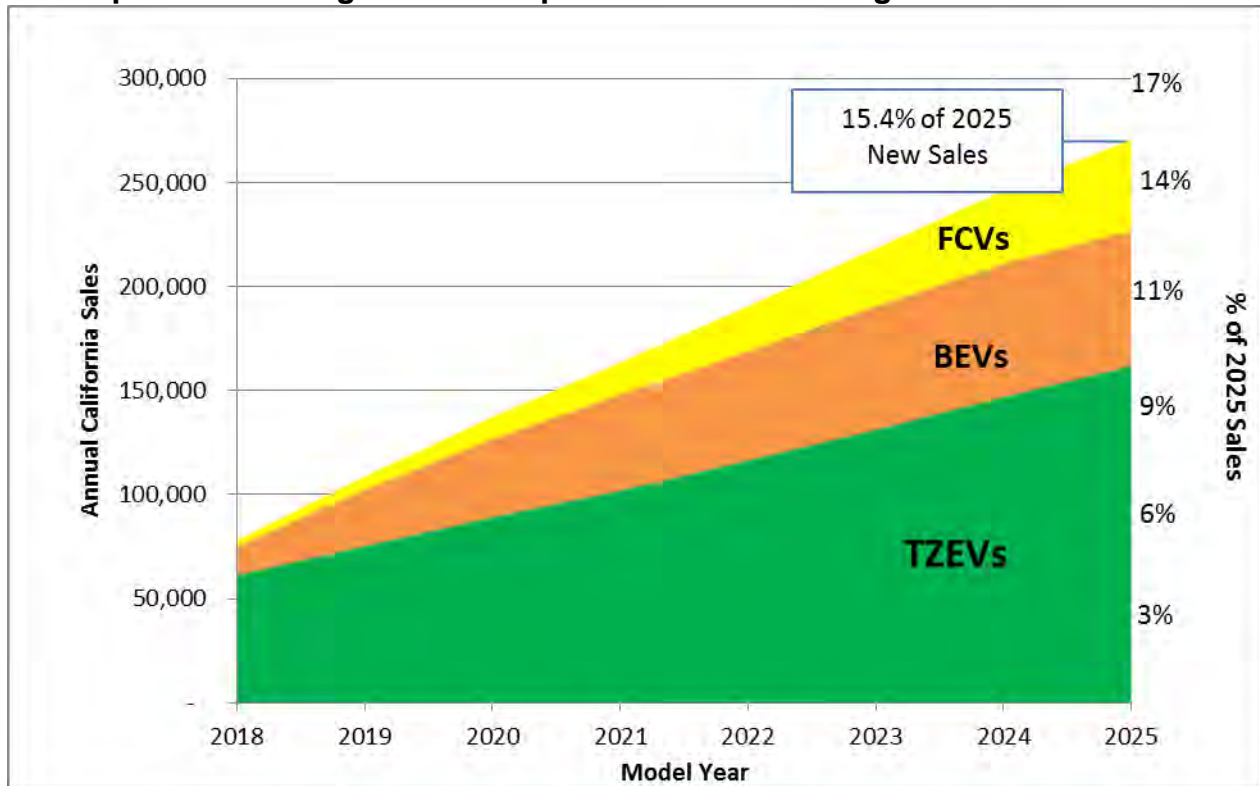
manufacturers because these technologies are now commercialized and their emissions are better reflected in the LEV III program. Allowed manufacturers to use banked PZEV and AT PZEV credits earned in 2017 and previous MYs, but discount the credits, and place a cap on usage in 2018 and subsequent MYs. Focused the 2018 and subsequent MY requirements on ZEVs and TZEVs

- c. *Amended Manufacturer Size Definitions, Ownership Requirements, and Transitions:*** Amended IVM and large volume manufacturer (LVM) size definitions to bring all but the smallest manufacturers under the full ZEV requirements by MY 2018. Aligned LEV III and ZEV ownership requirements, so that manufacturers who own more than 33.4 percent of each other are considered as the same manufacturer for determination of size. Modified transition periods for manufacturers switching size categories. These changes result in applying the ZEV regulation to manufacturers that represent 97 percent of the light-duty vehicle market.
- d. *Modified Credit System:*** Based credits for ZEVs on range, with 50 mile BEVs earning 1 credit each and 350 Mile FCVs earning 4 credits each. Allowed extended range BEVs (BEVx) which have a limited combustion engine range extender to meet up to half of a manufacturer's minimum ZEV requirement. The range of credit reflects the utility of the vehicle (i.e. the zero emitting miles it may travel) and its expected timing for commercialization. Simplified and streamlined TZEV credits based on the vehicle's zero-emission range capability, and their ability to perform at least 10 miles on the more aggressive US06 drive schedule. In addition to simplifying the program, reducing the spread of credits makes the technologies more evenly treated and reduces the variation in compliance outcomes (numbers of vehicles produced to meet the regulation requirements).
- e. *Modified Travel Provision:*** Ended the Travel Provision for BEVs after MY 2017. Extended the Travel Provision for FCVs until sufficient complementary policies are in place in states that have adopted the California ZEV regulation. This will allow FCV technology to continue to mature and provide time for Section 177 states to build infrastructure and put in place incentives to foster FCVs.
- f. *Added GHG-ZEV Over-Compliance Credits:*** Allows manufacturers who systematically over comply with the proposed LEV III GHG fleet standard to offset a portion of their ZEV requirement in 2018 through 2021 MYs only.

3. Effect of Amendments

As a result of the 2012 amendments, over 1.4 million ZEVs and TZEVs are expected to be produced cumulatively in California by 2025, with 500,000 of those vehicles being pure ZEVs (BEVs and FCVs) as represented in the top two wedges in the figure below.

Expected ZEV Regulation Compliance for 2018 through 2025 Model Years



During this timeframe, the incremental price of a ZEV or TZEV is expected to rapidly decline, yet remain higher than a conventional vehicle by approximately \$10,000 (high-end estimate in 2025).

The 2012 amendments will also result in an emissions benefit as compared to the earlier ZEV regulations and will likely provide benefits beyond one achieved by complying with the LEV III criteria pollutant standard with conventional vehicles only. This is due to increased electricity and hydrogen use that is more than offset by decreased gasoline production and refinery emissions.

III. CALIFORNIA'S LOW EMISSION VEHICLE PROGRAM FOR LIGHT-DUTY VEHICLES

A. BACKGROUND

Despite significant progress in reducing smog-forming and particulate matter criteria emissions from the passenger vehicle fleet, California needs further reductions in order to meet State and federal ambient air quality standards. Additionally, climate change continues to pose a serious threat to the economic well-being, public health, natural resources, and environment of California. To address the challenge presented by climate change, vehicle GHG emissions must be drastically reduced to meet our state goal of an 80 percent reduction from 1990 levels by 2050. To address these issues, CARB adopted its LEV III program as described below.

1. Criteria Emissions

In 1990, CARB established the LEV program that contained the most stringent exhaust emission regulations ever for light-duty passenger cars and trucks. The regulations included three primary elements: 1) tiers of increasingly stringent exhaust emission standards; 2) a fleet-average emission requirement for 1994-2003 that required manufacturers to phase-in a progressively cleaner mix of vehicles from year to year; and 3) a requirement that a specified percentage of passenger cars and lighter light-duty trucks be ZEVs, vehicles with zero emissions of any pollutants. EPA granted CARB's associated waiver request on February 13, 1993.¹¹

In 1999, CARB adopted the second phase of the LEV program. These amendments, known as LEV II, set more stringent fleet average non-methane organic gas (NMOG) requirements for MYs 2004-2010 for passenger cars and light-duty trucks and established a new more stringent super ultra-low emission vehicle (SULEV) standard. In addition, a partial zero-emission vehicle (PZEV) category was established for vehicles meeting the SULEV emission standard that also included extended 150,000-mile durability, zero fuel evaporative emissions, and extended emission warranty requirements. PZEVs could be used to meet a portion of the zero-emission vehicle requirement. The amendments also expanded the light-duty truck category to include trucks and sports utility vehicles (SUV) up to 8,500 lbs. gross vehicle weight rating (GVWR) and required these vehicles to meet the same emission standards as passenger cars and extended full useful life from 100,000 miles to 120,000 miles. The LEV II amendments also established more stringent emission standards for medium-duty vehicles (MDV) between 8,501-14,000 lbs. GVW. EPA granted CARB's associated waiver request on August 5, 1999.¹² EPA has also found that CARB's other amendments to the LEV program were either within the scope of previous waivers or qualified for a waiver on their own. EPA took final action on these waiver requests on April 22, 2003¹³, April 28, 2005¹⁴, and July 30, 2010.¹⁵

¹¹ 58 Fed.Reg. 4166 (January 13, 1993).

¹² 64 Fed.Reg. 42689 (August 5, 1999).

¹³ 68 Fed.Reg. 19811 (April 22, 2003).

2. Greenhouse Gas Emissions

Recognizing the increasing threat of climate change to the well-being of California's citizens and the environment, in 2002 the legislature adopted and the Governor signed Assembly Bill (AB) 1493 (Chapter 200, Statutes 2002, Pavley). AB 1493 directed CARB to adopt the maximum feasible and cost-effective reductions in GHG emissions from light-duty vehicles. Vehicle GHG emissions included carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) that are emitted from the tailpipe, as well as emissions of HFC134a, the refrigerant then currently used in most vehicle air conditioning systems.

As directed by AB 1493, CARB adopted what is commonly referred to as the Pavley regulations, the first in the nation to require significant reductions of GHGs from motor vehicles. These regulations, covering the 2009-2016 and later MYs, call for a 17 percent overall reduction in climate change emissions from the light-duty fleet by 2020 and a 25 percent overall reduction by 2030. They also formed the foundation for the federal GHG program for light-duty vehicles for 2012-2016 MYs. EPA granted CARB's associated waiver request on July 8, 2009.¹⁶

After the Board adopted the Pavley regulations, the legislature adopted and the Governor signed AB 32, the California Global Warming Solutions Act (Chapter 488, Statutes 2006, Nuñez/Pavley). AB 32 charges CARB with the responsibility of monitoring, regulating, and reducing GHG emissions in the State. AB 32 also directed CARB to prepare a Scoping Plan outlining the State's strategy to achieve the maximum feasible and cost-effective reductions in furtherance of reducing GHG emissions to 1990 levels by 2020. Measure T1 of the Scoping Plan anticipates an additional 3.8 million metric tons carbon dioxide equivalent (MMTCO₂e) reduction by 2020 from the subject regulatory amendments, beyond the GHG reductions arising from the 2009-2016 AB 1493 standards.

In addition, in 2005, in order to mitigate the long-term impacts of climate change, the Governor issued Executive Order S-3-05. Among other actions, the Executive Order called for reducing GHG emissions to 80 percent below 1990 levels by 2050. This ambitious yet achievable reduction path and goal are considered necessary to stabilize the long-term climate. The subject amendments' 2021-2025 MY requirements will further both AB 32 and the 2050 reduction goal.

As mentioned earlier, in 2010, President Barack Obama directed the EPA and NHTSA to work with California to develop GHG fleet standards for MY 2017 through 2025 LDVs.¹⁷ The resulting jointly developed report concluded "electric drive vehicles

¹⁴ 70 Fed.Reg. 22034 (April 28, 2005).

¹⁵ 75 Fed.Reg. 44951 (July 30, 2010).

¹⁶ 74 Fed.Reg. 32744 (July 8, 2009).

¹⁷ <http://www.whitehouse.gov/the-press-office/presidential-memorandum-regarding-fuel-efficiency-standards>

including hybrid(s)...battery electric vehicles...plug-in hybrid(s)...and hydrogen fuel cell vehicles...can dramatically reduce petroleum consumption and GHG emissions compared to conventional technologies.... The future rate of penetration of these technologies into the vehicle fleet is not only related to future GHG and CAFE standards, but also to future reductions in HEV/PHEV/EV [electric vehicle] battery costs, [and] the overall performance and consumer demand for the advanced technologies...."¹⁸ Following development of this report, NHTSA and EPA formally issued a Notice of Joint intent to develop strong greenhouse gas and fuel economy standards for the 2017 to 2025 timeframe,¹⁹ and 14 automobile manufacturers have joined CARB in submitting letters to EPA committing to a continued national program of light-duty GHG and CAFE standards²⁰.

B. SUMMARY OF RECENT LEV III AMENDMENTS INCLUDING GHG COMPONENTS

In order to achieve further emission reductions from the light- and medium-duty fleet, CARB adopted several amendments that together represent a significant strengthening of the LEV program. Specifically, the criteria emission requirements of the program are made substantially more stringent, and the GHG requirements are restructured to provide for later acceptance of the EPA and National Highway Traffic Safety Administration (NHTSA) proposed 2017-2025 federal GHG emission and fuel economy standards for light-duty vehicles as compliance with CARB standards.²¹ Effectively, these amendments will do the following:

Criteria Pollutants:

- Reduce fleet average emissions of new light-duty vehicles to SULEV levels by 2025, an approximate 75 percent reduction from 2010 levels;
- Replace separate NMOG and oxides of nitrogen (NOx) standards with combined NMOG plus NOx standards, in order to provide manufacturers with compliance flexibility to more cost-effectively meet SULEV emission levels across their light-duty fleets;
- Establish additional emission standard categories, such as ULEV70, ULEV50, and SULEV20 in order to provide additional options for compliance with the SULEV fleet average;
- Eliminate intermediate useful life (50,000 miles) standards;
- Increase full useful life durability requirements from 120,000 miles to 150,000 miles;

¹⁸ EPA, 2010. United States Environmental Protection Agency, National Highway Safety and Traffic Administration and California Air Resources Board. September 2010. "Interim Joint Technical Assessment Report: Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2017-2025" (p. vii).

¹⁹ 76 Fed.Reg. 48758 (August 9, 2011).

²⁰ <http://www.epa.gov/otaq/climate/letters.htm#2011al>

²¹ CARB Resolution 12-11, January 26, 2012 (p. 6).

- Provide a backstop to help ensure continued production of SULEVs after PZEVs migrate from the ZEV program to the LEV program in 2018. Without a backstop, beginning in 2018, manufacturers would not need to produce SULEVs until 2023 in order to meet the fleet average requirement;
- Establish more stringent emission requirements for MDVs;
- Require all MDVs between 8,501-10,000 lbs., GVWR to certify on a chassis dynamometer, which would greatly enhance the ability to perform in-use compliance evaluation of these vehicles;
- Establish more stringent 3 mg/mi and 1 mg/mi particulate matter (PM) standards for light-duty vehicles and more stringent PM standards for medium-duty vehicles;
- Establish zero fuel evaporative emission standards for light-duty vehicles, and more stringent evaporative emission standards for medium-, and heavy-duty vehicles;
- Establish more stringent supplemental federal test procedure (SFTP, reflecting more aggressive driving) standards for light-duty vehicles and, for the first time, require medium-duty vehicles to meet SFTP standards;
- Allow pooled fleet average NMOG plus NOx emissions from California and the federal CAA Section 177 States that adopt the LEV III program; and
- Revise the NMOG Test Procedures.

Greenhouse Gases:

- Reduce new light-duty CO₂ emissions from new light-duty regulatory MY 2016 levels by approximately 34 percent by MY 2025, and from about 251 grams of CO₂ per mile to 166 grams, based on the projected mix of vehicles sold in California;
- Set emission standards for CO₂, CH₄, and N₂O;
- Establish footprint based CO₂ emission standards, as distinguished from the current California GHG requirement of a fleet average GHG standard. This will allow manufacturers' new vehicle fleet CO₂ emissions to fluctuate according to their car-truck composition and sales according to vehicle footprint and will align the requirement with current federal GHG requirements;
- Provide credits toward the CO₂ standard if a manufacturer reduces refrigerant emissions from the vehicle's air-conditioning system;
- Provide credits toward the ZEV standards if a manufacturer over complies with the LEV III GHG fleet requirement;
- Provide credits towards the CO₂ standards if a manufacturer produces full size pickups with high efficiency drivetrains;

- Provide credits for deployment of technologies that reduce off-cycle CO₂ emissions; and
- Unlike the proposed federal GHG program for 2017-2025, require upstream emissions from zero-emission vehicles to be counted towards a manufacturer's light-duty vehicle GHG emissions.

IV. WAIVER ANALYSIS

A. CRITERIA FOR DETERMINING WHETHER AMENDMENTS QUALIFY FOR A WAIVER OF PREEMPTION OR ARE WITHIN THE SCOPE OF PREVIOUS WAIVERS OF FEDERAL PREEMPTION

1. The Clean Air Act Section 209(b) Waiver Mechanism

CAA section 209(a) preempts states from adopting or enforcing any emission standard for new motor vehicles and from requiring certification, inspection, or any other approval relating to the control of emissions from any new motor vehicle as a condition of registration or titling in the states. However, section 209(b) directs the Administrator to waive federal preemption for new motor vehicle emission standards adopted and enforced by California²² if the State determines that the State standards will be, in the aggregate, at least as protective of public health and welfare as applicable federal standards. The Administrator is to deny a waiver on a finding: (1) that the protectiveness determination of the State is arbitrary and capricious, (2) that California does not need separate State standards to meet compelling and extraordinary conditions, or (3) that the State standards and accompanying enforcement procedures are not consistent with CAA section 202(a). With regard to the consistency criterion, the Administrator has stated that California's standards and accompanying test procedures are inconsistent with section 202(a) if: (1) there is inadequate lead time to permit the development of technology to meet those requirements, giving appropriate consideration to the cost of compliance within that timeframe, or (2) the federal and California test procedures impose inconsistent certification requirements so as to make manufacturers unable to meet both sets of requirements with the same vehicle.²³

For nearly 30 years, EPA has administered a mechanism under which, in appropriate cases, no new waiver is needed for amendments to California's motor vehicle emission control regulations for new motor vehicles because the amendments are within the

²² The section 209(b) waiver provisions apply to any state which has adopted standards (other than crankcase emission standards) for the control of emissions from new motor vehicles or motor vehicle engines prior to March 30, 1966. (Clean Air Act §209(b)(1).) California is the only state that meets this condition. (S. Rep. No. 403, 90th Cong. 1st Sess., 532 (1967); *Motor and Equipment Manufacturers Ass'n v. EPA [MEMA I]*, 627 F.2d 1095, 1100 note 1 (D.C.Cir. 1979).)

²³ See, e.g., 46 Fed.Reg. 26371 (May 12, 1981). Even where there is incompatibility between the California and federal test procedures, EPA has granted a waiver under circumstances where EPA accepts a demonstration of federal compliance based on California test results, thus obviating the need for two separate tests. (43 Fed.Reg. 1829, 1830 (Jan. 12, 1978); 40 Fed.Reg. 30311, 30314 (July 18, 1975).)

scope of previously issued waivers.²⁴ As the Assistant Administrator stated in the 2001 finding that repeal of the ZEV sales requirements for MYs 1998-2002 was within the scope of previous waivers, an amendment may be considered to be within the scope of a previously granted waiver if it does not undermine California's determination that its standards, in the aggregate, are at least as protective of public health and welfare as comparable Federal standards, does not affect the consistency of California's requirements with CAA section 202(a), and raises no new issues affecting EPA's previous waiver determination.²⁵

The individual elements of section 209(b) are discussed below as follows. CARB's protectiveness determination for the 2012 amendments to both the ZEV and LEV regulations is discussed below in Section IV. B. The necessity of the amendments to both the ZEV and LEV regulations to meet compelling and extraordinary conditions is discussed in Section IV. C. The ZEV amendments' consistency with section 202(a) is discussed in Section IV. D. and E. The ZEV amendments' qualifications for a waiver if they are not deemed to qualify as within the scope are discussed in Section IV. F. The LEV amendments' qualifications for a waiver are discussed in Section IV. G.

2. The Scope of EPA's Inquiry in a Waiver Proceeding Is Limited

The scope of the Administrator's inquiry in determining whether to deny a waiver or within-the-scope request is limited by the express terms of CAA section 209(b). Thus, once California determines that its standards are, in the aggregate, at least as protective of public health and welfare as applicable federal standards, the Administrator must grant the waiver request unless one of the three specified findings can be made. As Administrator Ruckelshaus stated in a 1971 decision:

The law makes clear that the waiver request cannot be denied unless the specific findings designated in the statute can properly be made. The issue of whether a proposed California requirement is likely to result in only marginal improvement in air quality not commensurate to its costs or is otherwise an arguably unwise exercise of regulatory power is not legally pertinent to my decision under Section 209, so long as the California requirement is consistent with Section 202(a) and is more stringent than applicable Federal requirements in the sense that it may result in some further reduction in air pollution in California.²⁶

²⁴ See, e.g., 46 Fed.Reg. 36742 (July 15, 1981); 51 Fed.Reg. 12391 (April 10, 1986).

²⁵ Decision Document accompanying scope of waiver determination in 66 Fed.Reg. 7751 (Jan. 25, 2001) at 9.

²⁶ 36 Fed.Reg. 17458 (Aug. 31, 1971), quoted on pp. 8-9 of the Decision Document accompanying 66 Fed.Reg. 7751 (Jan. 25, 2001), which notes that the "more stringent" terminology reflected the section 209(b) requirement before the 1977 amendments to the Clean Air Act substituted the reference to California standards that are, in the aggregate, at least as protective as comparable Federal standards.

3. Deference Should be Given to California's Policy Judgments

In granting waivers to California's motor vehicle program, EPA has routinely deferred to the policy judgments of California's decision makers. The agency has recognized that the intent of Congress in creating a limited review of California's determinations that California needs its own State separate standards was to ensure that the federal government would not second-guess the wisdom of State policy.²⁷ Administrators have recognized that the deference is wide-ranging:

The structure and history of the California waiver provision clearly indicate both a Congressional intent and an EPA practice of leaving the decision on ambiguous and controversial matters of public policy to California's judgment.

* * * * *

It is worth noting . . . I would feel constrained to approve a California approach to the problem which I might also feel unable to adopt at the federal level in my own capacity as a regulator. The whole approach of the Clean Air Act is to force the development of new types of emission control technology where that is needed by compelling the industry to "catch up" to some degree with newly promulgated standards. Such an approach . . . may be attended with costs, in the shape of a reduced product offering, or price or fuel economy penalties, and by risks that a wider number of vehicle classes may not be able to complete their development work in time. Since a balancing of these risks and costs against the potential benefits from reduced emissions is a central policy decision for any regulatory agency under the statutory scheme outlined above, *I believe I am required to give very substantial deference to California's judgments on this score.*²⁸

In 2009, EPA reiterated its recognition that Congress intended EPA to show great deference to California's decision making when analyzing a waiver request for California's GHG standards for new vehicles.²⁹ In that decision, the administrator considered the fact that Congress had the opportunity to restrict CAA's waiver provision as part of its 1977 amendments to the CAA and had instead elected to highlight the utility of California's flexibility to adopt a complete program of motor vehicle emission controls as the state saw fit. The administrator interpreted Congress' act as showing its intent "to afford California the broadest possible discretion in selecting the best means to protect the health of its citizens and the public welfare."³⁰

²⁷ 40 Fed.Reg. 23102, 23103 (May 28, 1975).

²⁸ 40 Fed.Reg. 23102, 23104 (May 28, 1975; emphasis added). See also Decision Document accompanying waiver determination in 58 Fed.Reg. 4166 (Jan. 13, 1993).

²⁹ 74 Fed.Reg. 32744 (July 8, 2009).

³⁰ *Id.* at p. 32748.

4. The Burden of Proof Is On Those Opposed to the Waiver Request

It is well settled that the burden to demonstrate that EPA should not grant a waiver is on the opponents of the waiver. The *MEMA I* Court expressly held that the burden of proof to show that there is a basis for making one of the three findings is squarely on the opponents of a waiver:

It is not necessary for the Administrator affirmatively to find that these conditions do not exist before granting a waiver. The statute does not say “the Administrator shall grant a waiver only if” he makes the negative of these findings. That he must deny a waiver if certain facts exist does not mean that he must independently proceed to make the opposite of those findings before he grants the waiver regardless of the state of the record. . . . The language of the statute and its legislative history indicate that California’s regulations, and California’s determination that they comply with the statute, when presented to the Administrator are presumed to satisfy the waiver requirements and that the burden of proving otherwise is on whoever attacks them. California must present its regulations and findings at the hearing, and thereafter the parties opposing the waiver request bear the burden of persuading the Administrator that the waiver request should be denied.³¹

B. PROTECTIVENESS REQUIREMENT OF CLEAN AIR ACT SECTION 209

Section 209(b)(1)(A) of the CAA requires EPA to deny a waiver if the Administrator finds that California was arbitrary and capricious in its determination that its State standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards. Historically, EPA has simply compared the California standards to any comparable Federal standard, and that comparison has been undertaken within the broader context of the previously waived California program, which relies upon protectiveness determinations that EPA has previously found were not arbitrary and capricious.³²

Traditionally, EPA’s evaluation of the stringency of California’s standards relative to comparable EPA emission standards has followed the instruction of section 209(b)(2), which states: “If each State standard is at least as stringent as the comparable applicable Federal standard, such State standard shall be deemed to be at least as protective of health and welfare as such Federal standards for purposes of [209(b)(1)].”³³ A finding that California’s determination was arbitrary and capricious under section 209(b)(1)(A) would need to be based upon “‘clear and compelling evidence’ to show that proposed [standards] undermine the protectiveness of California’s standards.”³⁴ Even if EPA’s own analysis of comparable protectiveness or

³¹ *MEMA I*, *supra*, 627 F.2d at 1120-1121.

³² 74 Fed.Reg. 32744, at p. 32749 (July 8, 2009).

³³ *Ibid.*

³⁴ *Ibid.*

that suggested by a commenter might diverge from California's protectiveness finding, that is not a sufficient basis on its own for EPA to make a section 209(b)(1)(A) finding that California's protectiveness finding is arbitrary and capricious.³⁵

Additionally, in granting California's past waiver requests EPA has acknowledged that a given California standard may, by itself, be less protective than comparable federal standards so long as California's regulations *in the aggregate* are at least as protective of comparable federal standards.³⁶ "California could enforce emission control standards which it determined to be in its own best interest even if those standards were in some respects less stringent than comparable federal ones."³⁷

1. PROTECTIVENESS OF ACC PACKAGE

Here, California made a protectiveness determination with regard to the 2012 ZEV and LEV amendments in CARB's Resolution 12-11, finding that the amendments would not cause the California motor vehicle emission standards, in the aggregate, to be less protective of public health and welfare than applicable federal standards. This protectiveness determination is the logical extension of the comparable findings that were found to be sufficient in the analysis of California's previous protectiveness determinations for its ZEV regulation³⁸, its LEV regulation³⁹, and its GHG regulation.⁴⁰ In analyzing CARB's protectiveness finding for the 2012 ZEV and LEV amendments, EPA should consider that – as was the case with the granted waivers cited above - there are either no comparable Federal standards or the Federal standards that exist are quantifiably less protective than those included in the 2012 ZEV and LEV amendments.

Moreover, as detailed below, the ACC program will result in reductions of both criteria pollutants and GHG emissions that, in the aggregate, are more protective than the federal standards that exist. Criteria pollutant emission benefits for the ACC program are fully realized in the 2035-2040 timeframe when nearly all vehicles operating in the fleet are expected to be compliant with the proposed standards. By 2035, reactive organic gas (ROG) emissions would be reduced by an additional 34 percent, and NOx emissions by an additional 37 percent, compared to 2035 without the proposed ACC rules. Under the amended rule, the new PM_{2.5} standard is reduced to 3 mg/mi in 2020 and 1 mg/mi in 2028. With these standards, PM_{2.5} emissions will be essentially unchanged between 2010 and 2040 despite growth in vehicle miles traveled.

There is no criteria emissions benefit from including the ZEV proposal in terms of vehicle (tank-to-wheel or TTW) emissions. The LEV III criteria pollutant fleet standard is responsible for those emission reductions in the fleet; the fleet would become cleaner

³⁵ *Ibid.*

³⁶ 74 Fed.Reg. 32744, 32761 (July 8, 2009).

³⁷ *Motor & Equip. Mfrs. Ass'n v. Nichols*, 142 F.3d 449, 464 (D.C. Cir. 1998, citation omitted).

³⁸ 76 Fed.Reg. 61095 (October 3, 2011).

³⁹ 68 Fed.Reg. 19811 (April 22, 2003).

⁴⁰ 74 Fed.Reg. 32744 (July 8, 2009).

regardless of the ZEV regulation because manufacturers would adjust their compliance response to the standard by making less polluting conventional vehicles. However, since upstream criteria and PM emissions are not captured in the LEV III criteria pollutant standard, net upstream emissions are reduced through the increased use of electricity and concomitant reductions in fuel production.

The table below presents the emissions impacts in well-to-wheel (WTW) criteria pollutant and PM emissions in 2030 due to the 2012 Amendments. 2030 was chosen as a reference year to account for a significant amount of fleet turn-over.

Statewide Criteria and PM Emissions in 2030 (tons per day)

2030	ROG	NMOG+ NO _x	PM
LEVIII fleet WTW emissions <u>without</u> new ZEV proposal	231	233	56.4
LEVIII fleet WTW emissions <u>with</u> new ZEV proposal	225	229.5	56.2

The upstream emissions from the production of hydrogen and electricity represent a very small fraction of the combined vehicle and upstream emissions impacts of the fleet, and are far outweighed by the reduction in gasoline production emissions. Additionally, a portion of these upstream emissions are in non-urban areas.

Criteria and PM emission benefits will vary by region throughout the state depending on the location of emission sources. Refinery emission reductions will occur primarily in the east Bay Area and South Coast region where existing refinery facilities operate. As refinery operations reduce production and emissions, the input and output activities, such as truck and ship deliveries, will also decline. This includes crude oil imported through the Los Angeles and Oakland ports, as well as pipeline and local gasoline truck distribution statewide.

As noted below in the discussion on the criteria emission element of LEV III (Section IV.G.3.a.(i)), the primary fleet average emission requirement, beginning in 2015, declines every year to a fleet average NMOG plus NO_x emission standard of 0.030 g/mi in 2025. Clearly, this is significantly more stringent than the current federal Tier 2 fleet average NO_x emission requirement of 0.07 g/mi NO_x⁴¹, with its implied fleet average NMOG plus NO_x emission requirement of 160 g/mi (a 0.07 g/mi NO_x emission level is equal to the NO_x emission standard for Tier 2 Bin 5 (0.090 g/mi NMOG, 0.07 g/mi NO_x)⁴², implying a Tier 2 NMOG plus NO_x fleet average requirement of 0.160 g/mi). LEV III PM standards of 0.003 g/mi and 0.001 g/mi are also significantly more stringent than the Tier 2 PM standards of 0.02 g/mi and 0.01 g/mi⁴³.

The ZEV regulation does not provide GHG emission reductions in addition to the LEV III GHG regulation given that ZEV emissions are included in determining compliance with the GHG standard. Specifically, because the California GHG standard

⁴¹ 40 C.F.R. section 86.1811-04(d)

⁴² 40 C.F.R. section 86.1811(c)(6)

⁴³ *Id.*

includes upstream emissions, in addition to the vehicle emissions, there is no difference in GHG emissions under varying ZEV scenarios. However, the ACC program as a whole – i.e. the California fleet - would provide major reductions in GHG emissions. By 2025, CO₂ emissions would be reduced by almost 14 million metric tonnes (MMT) per year, which is 12 percent from baseline levels. The reduction increases in 2035 to 32 MMT which is a 27 percent reduction from baseline levels. By 2050, the proposed regulation will reduce emissions by more than 42MMT per year, which is a reduction of 33 percent from baseline levels. Currently, there are no federal GHG standards for these 2017-2025 MYs, though CARB understands they will soon be finalized.

For these reasons it is clear that California's fleet under these amendments will be at least as protective as a comparably sized fleet of vehicles that only meet the existing federal rules. Should CARB adopt an amendment later this year to allow federal GHG compliance to serve as compliance with California's LEV (including GHG) standards, California's program will be necessarily as protective as the federal program.

C. THE 2012 ZEV AND LEV AMENDMENTS ARE NECESSARY TO MEET COMPELLING AND EXTRAORDINARY CONDITIONS

Under section 209(b)(1)(B) of the CAA, the Administrator may not grant a waiver if they find that California “does not need such State standards to meet compelling and extraordinary conditions.” EPA has traditionally interpreted this provision to require a consideration of whether California needs a separate motor vehicle program to meet compelling and extraordinary conditions.⁴⁴ In granting past waivers, EPA has noted that “Congress requires EPA to allow California to promulgate individual standards that, in and of themselves, might not be considered needed to meet compelling and extraordinary circumstances, but are part of California's overall approach to reducing vehicle emissions to address air pollution problems.”⁴⁵ EPA has repeatedly determined that CARB has demonstrated the need for its motor vehicle program to address compelling and extraordinary conditions in California and has based such determinations on the fact that California's essential “geographic and climactic conditions” remained the same as they were under earlier determinations.⁴⁶

The relevant inquiry under this criterion is whether California needs its own motor vehicle pollution control program to meet compelling and extraordinary conditions, not whether any particular standards are necessary to meet such conditions.⁴⁷ The Administrator has determined that the phrase “compelling and extraordinary conditions” refers to:

... certain general circumstances, unique to California, primarily responsible for causing its air pollution problem [including] . . . geographical and climatic factors [as well as] ... the presence and growth

⁴⁴ 74 Fed.Reg. 32744, at p. 32759 (July 8, 2009).

⁴⁵ *Id.* at p. 32761.

⁴⁶ *Id.* at pp. 32761-32762.

⁴⁷ See, e.g., 49 Fed.Reg. 18887, 18889-18890 (May 3, 1984).

requirements were held at the same percentage each year, as shown in the table below.

2018 and Subsequent ZEV Credit Requirement *Before* 2012 Amendments

Credit Category	Credit Requirement
Minimum ZEV	5.0%
Maximum TZEV*	3.0%
Maximum AT PZEV*	2.0%
Maximum PZEV	6.0%
Total ZEV Requirement	16.0%

*The regulation did not specify the split between TZEVs and AT PZEVs. For this analysis, staff assumed AT PZEV and TZEV credit requirements would remain the same from the 2015 through 2017 requirements. The PZEV and AT PZEVs (highlighted in grey) were moved to the LEV III program so the remaining ZEV requirement under the current regulation would be 8 percent.

To address one of the program's primary objectives (i.e. ZEV technology commercialization and long-term GHG and criteria emission goals), CARB's 2012 ZEV amendments increased each manufacturer's compliance requirements for 2018 and subsequent MYs, ultimately reaching credit requirements of 6 percent for TZEVs and 16 percent for pure ZEVs in 2025. This increase is outlined in the table below.

ZEV Credit Requirement for 2018 and Subsequent *After* 2012 Amendments

Model Year	2018	2019	2020	2021	2022	2023	2024	2025 and Subsequent
Overall ZEV Requirement	4.5%	7.0%	9.5%	12.0%	14.5%	17.0%	19.5%	22.0%
Min. ZEV	2.0%	4.0%	6.0%	8.0%	10.0%	12.0%	14.0%	16.0%
Max. TZEV	2.5%	3.0%	3.5%	4.0%	4.5%	5.0%	5.5%	6.0%

As shown in the post-2012 Amendment table above, while the overall ZEV credit requirement between MY 2018 and MY 2022 is less than the current program, CARB has revised the number of credits earned per vehicle (typically by one half), and PZEVs and AT PZEVs no longer count towards meeting a manufacturer's ZEV obligation. Accordingly, it is more illustrative to compare the actual number of ZEVs required to be produced given the current and proposed crediting structure. This is shown in the figure below.

purpose of the 2012 amendments is to bring a larger percentage of manufacturers under the full ZEV requirements. This amendment to the lead time provision ensures a level playing field, making manufacturers close to the current definition thresholds (60,000 vehicles per year), subject to LVM requirements at the same time as manufacturers affected by staff's proposed definition change. CARB agrees that this aspect of the 2012 ZEV amendments can be analyzed as qualifying for a new waiver as detailed in the alternative analysis below in section IV. F.



Air Resources Board



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Edmund G. Brown Jr.
Governor

October 19, 2012

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
Environmental Protection Agency
Mailcode: 6102T
1200 Pennsylvania Avenue NW
Washington, D.C. 20460

RE: California State Motor Vehicle Pollution Control Standards; Advanced Clean Car Program; Request for Waiver of Preemption; Opportunity for Public Hearing and Public Comment; 77 Fed.Reg. 53199 (August 31, 2012); DOCKET ID NO. EPA-HQ-OAR-2012-0562

California's Air Resources Board (CARB) submits this letter and attachments for entry to the subject Docket primarily to address concerns raised by the National Automobile Dealers Association (NADA) at the September 19, 2012 hearing on the subject waiver request. This CARB submission is focused on updating and further supporting what should now be beyond dispute; the obvious and continued need for these motor vehicle standards to meet compelling and extraordinary conditions facing California. Since at least one commenter (NADA) indicated they would be submitting extensive legal and policy comments, CARB trusts that EPA will follow its longstanding practice allowing California to later respond to such comments in an effort to provide EPA with a more complete record for its waiver decision.

Protectiveness

NADA's broad assertions that California's program does not provide additional environmental benefit lacks any support in their testimony or in the remainder of the record, though it is possible that NADA intends to provide some support in a written submission. Again, even if NADA were correct on this point, that is not the test EPA must apply to California's determination. Instead, EPA is to simply review whether California was *arbitrary and capricious* in its determination that its passenger vehicle program is *at least as protective* as the federal program; a rational basis for a tie goes to California. As we noted in our presentation (slide 13), NADA has not provided any specific evidence to the contrary regarding the relative protectiveness of the California and federal programs, much less the clear and compelling evidence EPA would need to override California's considered judgment.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
October 19, 2012
Page 2

Compelling & Extraordinary Conditions: California's Program as a Whole

To frame our response regarding the compelling and extraordinary conditions California faces, and in answer to a question from the EPA hearing panel, we reiterate that EPA should continue to evaluate this waiver factor as whether California has justified its ongoing need for its motor vehicle program as a whole, not a demonstrated need for each individual California standard. As we stated at the hearing, EPA's reasoning on this point is sound.¹ And in a related context, EPA's view has been upheld with little discussion as eminently reasonable. *American Trucking Associations, Inc. v. E.P.A.* (D.C. Cir. 2010) 600 F.3d 624, 627-29. Finally, the subject Advanced Clean Cars program, an integrated passenger vehicle program addressing multiple pollutant types, arguably compels EPA to consider California's need for its program as a whole; the program development required California to engage in the type of multi-pollutant balancing that prompted Congress in 1977 to broaden California's discretion to adjust its program as needed. *Ford Motor Co. v. E.P.A.* 606 F.2d at 1294 (D.C. Cir. 1979) 1293.

Compelling & Extraordinary Conditions: California's Air Quality Challenges

To the extent commenters question California's need for additional criteria pollutant reductions from its new motor vehicle fleet, there remains no question that such reductions are essential to meet federal health-based ambient air quality standards. As stated in our May, 2012 request, California and particularly the South Coast and San Joaquin Valley Air Basins continue to experience some of the worst air quality in the nation and continue to be in non-attainment with national ambient air quality standards (NAAQS) for PM_{2.5} and ozone.² California's unique geographical and climatic conditions, and the tremendous growth in its on- and off-road vehicle population, which moved Congress to authorize the state to establish separate on-road motor vehicle standards in 1967 and off-road engine standards in 1990, still exist today.³ As demonstrated next, increasingly stringent health-based air quality standards and federally required state planning efforts to meet those standards firmly establish the need for these additional emission reductions.

In terms of the severity of its air quality challenge, California stands apart from other states. For the 0.08 parts per million 8-hour ozone standard set in 1997, California has

¹ See Sections V.B.-C., 74 Fed.Reg. 32744, 32759-32763 (July 9, 2009), and pp. 19-39 of enclosed California brief, Item 17, in support of this EPA decision.

² 76 Fed.Reg. 40652, 40654 (July 11, 2011).

³ 74 Fed.Reg. 32744, 32762 (July 8, 2009); 76 Fed.Reg. 77515, 77518 (December 13, 2011).

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
October 19, 2012
Page 3

five areas classified severe or extreme that still exceed the standard, and the San Joaquin Valley and South Coast are the nation's only extreme areas. Outside of California, only three other areas are classified higher than moderate: Houston, which is severe; and Baltimore and Dallas, which are serious.⁴ For the 0.075 parts per million 8-hour ozone standard set in 2008, the San Joaquin Valley and South Coast are the nation's only extreme areas. California has 18 nonattainment areas, seven of which are classified serious or higher. Elsewhere in the country, only two areas are classified higher than the lowest nonattainment classification, marginal.⁵ Finally, the San Joaquin Valley and South Coast are the only extreme 1-hour ozone areas in the nation.

For the 24-hour PM_{2.5} standard of 35 micrograms per cubic meter (ug/m³) set in 2006, the nation's highest levels occur in California's San Joaquin Valley. Air quality data for that region from 2009-2011 shows the standard was exceeded by over 75 percent.⁶

For areas in California that exceed the NAAQS, CARB is responsible under CAA section 110 for developing a State Implementation Plan (SIP) that describes how the state will attain the standards by certain deadlines. For each of the ozone and the 24-hour PM_{2.5} NAAQS, the South Coast Air Basin and the San Joaquin Valley Air Basin deadlines are as follows:⁷

- For the 0.08 parts per million (ppm) 8-hour ozone standard set in 1997 the deadline is 2023 for both areas.
- For the 0.075 ppm 8-hour ozone standard set in 2008 the deadline is 2032 for both areas.
- These areas missed their 1-hour ozone standard attainment deadline in 2010. On September 19, 2012, EPA proposed to require a new 1-hour ozone attainment plan for the South Coast, with attainment within 10 years⁸.
- For the 24-hour PM_{2.5} standard of 35 µg/m³ set in 2006, the SIPs currently under development would demonstrate attainment in the South Coast by 2014 and in the San Joaquin Valley by 2019.

⁴ <http://www.epa.gov/airquality/greenbook/gnc.html>, provided here as attachment Item 18.

⁵ Baltimore and Dallas, both moderate. <http://www.epa.gov/airquality/greenbook/gnc.html>, *Ibid*.

⁶ <http://www.epa.gov/airtrends/values.html>, provided here as attachment Item 19.

⁷ 1-hour Ozone Standard Designations, 56 FR 56694, (November 6, 1991), 1997 8-Hour Ozone Standard Designations, 69 FR 23857 (April 30, 2004), and 2008 8-Hour Ozone Standard Designations, 77 FR 30088 (May 21, 2012).

⁸ 77 FR 58072. (September 19, 2012)

Air and Radiation Docket
Docket ID No. EPA–HQ–OAR–2012–0562
October 19, 2012
Page 4

To meet these public health mandates, emission reductions of oxides of nitrogen (NOx) are needed because NOx leads to formation in the atmosphere of both ozone and PM2.5. Volatile organic compound (VOC) reductions are needed to reduce ozone levels. Directly-emitted PM emission reductions are also needed because these emissions contribute to ambient concentrations of PM2.5. Emissions reduction needs for NOx in California's two most impacted regions are large and highlighted below:

- The South Coast needs NOx reductions of approximately 65 percent from projected levels in 2023 – accounting for the benefits of all adopted regulations – in order to attain the 8-hour ozone standard of 0.08 ppm.⁹
- Current modeling indicates that the South Coast needs NOx emission reductions of about 75 percent from projected levels in 2023 to attain the 8-hour ozone standard of 0.075 ppm by 2032.¹⁰
- The South Coast needs NOx reductions of approximately 55 percent from projected levels in 2022 for 1-hour ozone attainment.¹¹
- The San Joaquin Valley, despite more than halving its NOx emissions between 2008 and 2023¹², needs additional reductions of 15 to 30 percent from 2023 levels to attain the 8-hour ozone standard in 2023.¹³
- The San Joaquin Valley needs NOx reductions of approximately 50 percent from 2007 levels to help attain the 24-hour PM2.5 standard by 2019.¹⁴

A recent major ARB undertaking, the LEV III amendments (part of the Advanced Clean Car Program), provides key emission reductions. With large benefits projected well through the attainment deadlines outlined above, the LEV III regulation will be an essential building block for future SIPs – both for ozone and PM2.5. Statewide emissions benefits from the regulation are laid out in Table 1 below.¹⁵ Approximately

⁹ <http://www.aqmd.gov/aqmp/2012aqmp/RevisedDraft/Ch8.pdf>, provided here as attachment Item 20.

¹⁰ <http://www.aqmd.gov/aqmp/2012aqmp/RevisedDraft/Ch8.pdf>, *Ibid*.

¹¹ <http://www.aqmd.gov/aqmp/2012aqmp/RevisedDraft/AppVII.pdf>, provided here as attachment Item 21.

¹² http://www.arb.ca.gov/planning/sip/2007sip/2011_ozone_sip_staff_report_with_appendices.pdf, provided here as attachment Item 22.

¹³ Proposed approval of San Joaquin Valley 8-hour Ozone SIP, 76 FR 57846 (September 16, 2011), provided here as attachment Item 23.

¹⁴ <http://www.valleyair.org/Workshops/postings/2012/10-9-12PM25/11AppendixBEmissionInventory.pdf>, provided here as attachment Item 24.

¹⁵ <http://www.arb.ca.gov/regact/2012/leviiighg2012/levappb.pdf>

Air and Radiation Docket
 Docket ID No. EPA-HQ-OAR-2012-0562
 October 19, 2012
 Page 5

half of the statewide benefits accrue to the South Coast and San Joaquin Valley Air Basins.¹⁶

	NOx	VOC	PM2.5
2023	15.7	6.6	0.6
2025	22.4	11.1	0.9
2035	50.4	47.4	2.9

Besides meeting future SIP obligations, the LEV III regulation is also providing key emission reductions in SIPs currently under development. The publicly released draft PM2.5 SIP for the San Joaquin Valley relies on benefits from implementation of the LEV III regulation. Similarly, the South Coast's draft 2012 air quality management plans for 1-hour ozone and 8-hour ozone rely on LEV III emission reductions to help provide for attainment of those air quality standards. Local adoption of these plans is expected in December 2012, and ARB consideration is scheduled for January 2013. The attainment demonstrations for the South Coast and San Joaquin Valley ozone SIPs have no "margin of safety." Indeed, the ozone attainment demonstrations rely on technologies that have not yet been identified, as allowed in CAA section 182(e)(5), a provision available only to extreme nonattainment areas.

The critical nature of the LEV III regulation is also highlighted in the recent effort to take a coordinated look at strategies to meet California's multiple air quality and climate goals well into the future. This coordinated planning effort, *Vision for Clean Air: A Framework for Air Quality and Climate Planning (Vision for Clean Air)*¹⁷ demonstrates the magnitude of the technology and energy transformation needed from the transportation sector and associated energy production to meet federal standards and the goals set forth by California's climate change requirements. In addition to considering the level of change needed to implement the current SIP and reduce greenhouse gas emissions by 80 percent below 1990 levels by 2050, the 2032 attainment date for the 0.075 ppm standard set in 2008 was used as an interim target. Adopted or pending rules, such as the LEV III regulation, were considered essential as baseline reductions assumed for the future, yet we still need more transformative changes to achieve the 2032 and 2050 targets. The *Vision for Clean Air* effort illustrates that in addition to the cleanup of passenger vehicles (at issue here) as soon

¹⁶ <http://www.arb.ca.gov/regact/2012/leviiiighg2012/levappt.pdf>, provided here as attachment Item 25.

¹⁷ *Vision for Clean Air: A Framework for Air Quality and Climate Planning*, June 27, 2012, is provided here as attachment Item 26.

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
October 19, 2012
Page 6

as possible as required in the LEV III regulation, transition to zero- and near-zero emission technologies in all on- and off-road engine categories is necessary to achieve the coordinated goals. We now turn to California's related need for substantial reductions of another pollutant type: greenhouse gases.

Compelling & Extraordinary Conditions: California's Need to Reduce Greenhouse Gas Emissions

To the extent commenters questioned California's need for additional greenhouse gas emission reductions from its new motor vehicle fleet, there remains no question that such reductions are essential to addressing the public health and other impacts from temperature increases in California. Here we focus on scientific findings subsequent to both the July 2009 greenhouse gas waiver (74 Fed.Reg. 32744 (July 9, 2009)) and EPA's Endangerment Finding (74 Fed.Reg. 66496 (December 15, 2009)), in two areas: 1) climate change science; and 2) observed and/or projected climate change impacts (e.g., on air quality, wildfires, human health, sea level, water resources, ecosystems, agriculture, etc.) in California and/or the western United States.

Background and Global Setting. The Earth's climate has always changed; the paleo-record of the last million years shows large changes with the growth and retreat of the great ice sheets over the continents. Nevertheless, over the past century the northern hemisphere has warmed at a rate faster than at any other time over the last millennium, and that change is because human activities are altering the chemical composition of the atmosphere through the buildup of greenhouse gases (GHGs), primarily carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and hydrofluorocarbons (HFCs). These gases play a role in the "greenhouse effect," a natural phenomenon that helps regulate the temperature of the Earth. Human activities, primarily the burning of fossil fuels and clearing of forests, have greatly intensified the natural greenhouse effect, causing global warming.

Climate change impacts are occurring faster and with more severity than predicted only several years ago. At the same time, the world's emissions are increasing at rates greater than predicted, and the alarming rates of emissions reductions required to avoid dangerous levels of climate change are becoming more apparent. The most recent published science on climate change indicates that:

- Summer sea-ice in the Arctic is decreasing in extent and mass far more rapidly than predicted.

Air and Radiation Docket

Docket ID No. EPA-HQ-OAR-2012-0562

October 19, 2012

Page 7

- The Greenland and West Antarctic ice sheets are melting more rapidly than predicted.¹⁸
- Sea level rise is now predicted to be at least 1.4 meters this century.¹⁹
- The world's great carbon sinks (land and ocean) are becoming less efficient, more rapidly than predicted.

Record-setting fires, deadly heat waves, destructive storm surges, loss of winter snowpack—California has experienced all of these in the past decade and will experience more in the coming decades. California's climate--much of what makes the state so unique and prosperous--is already changing, and those changes will only accelerate and intensify in the future. Extreme weather will be increasingly common as a result of climate change. In California, extreme events such as floods, heat waves, droughts and severe storms will increase in frequency and intensity. Many of these extreme events have the potential to dramatically affect human health and well-being, critical infrastructure and natural systems.

California has a long history of climate change research, which enables the state to better monitor, forecast and plan for climate change impacts. Taken together, those studies and other climate research underscore how much the climate has already changed in California and how much more it will change in coming years.

California impacts generally. A summary report on the third assessment from the California Climate Change Center (2012)²⁰ highlights crucial new insights for the energy, water, agriculture, public health, coastal, transportation, and ecological resource sectors that are vital to California residents and businesses; the findings include:

- The state's electricity system is more vulnerable than was previously understood.
- The Sacramento-San Joaquin Delta is sinking, putting levees at growing risk.
- Wind and waves, in addition to faster rising seas, will worsen coastal flooding.
- Animals and plants need connected "migration corridors" to allow them to move to more suitable habitats to avoid serious impacts.
- Native freshwater fish are particularly threatened by climate change.

¹⁸ M. Bevis et al **Bedrock displacements in Greenland manifest ice mass variations, climate cycles and climate change.** *Proceedings of the National Academy of Sciences*, 2012; DOI: [10.1073/pnas.1204664109](https://doi.org/10.1073/pnas.1204664109)
Provided as attachment Item 27 here.

¹⁹ Greg Biging et al., Impacts of Sea Level Rise on the Transportation Infrastructure in the Bay Area. California Energy Commission report, 2012 (<http://www.energy.ca.gov/2012publications/CEC-500-2012-040/CEC-500-2012-040.pdf>), provided as attachment Item 28 here.

²⁰ Our Changing Climate 2012 Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. Publication # CEC-500-2012-007. Posted: July 31, 2012; available at http://www.climatechange.ca.gov/adaptation/third_assessment/, provided as attachment Item 29 here.

Air and Radiation Docket

Docket ID No. EPA–HQ–OAR–2012–0562

October 19, 2012

Page 8

- Minority and low-income communities face the greatest risks from climate change.

The third assessment report also stated that observed changes over the last several decades across the western United States reveal clear signals of climate change. A statewide average temperature increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada. It also indicated that temperatures in California will rise significantly during this century as a result of the heat-trapping gases humans release into the atmosphere. In the Central Valley and other regions that already experience high summer heat, the hottest days of the year will become even hotter. Hotter temperatures also lead to more smog, and worsen already poor air quality in polluted areas of the state:

- By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century.
- By 2100, average temperatures could increase by 4.1–8.6°F, depending on GHGs emissions levels.
- By 2050, sea level could be 10 to 18 inches higher than in 2000. If sea level rises 16 inches higher than it is now, a 100-year flood would prohibit access to 23 emergency-responder fire stations in the San Francisco Bay Area.
- Springtime warming — a critical influence on snowmelt — will be particularly pronounced.
- Summer temperatures will rise more than winter temperatures, and the increases will be greater in inland California, compared to the coast.
- Heat waves will be more frequent, hotter, and longer. There will be fewer extremely cold nights.

Air Quality and Wildfire Risks. Californians experience – on a cumulative basis – the worst air quality in the nation. Ozone and particulate matter are the pollutants of greatest concern, and climate change could slow progress toward attainment of health-based air quality standards and increase pollution control costs by increasing the potential for high ozone and high particulate days. Reductions needed to counter man-made and natural biogenic emissions will be particularly important during strengthened temperature inversion events and summertime stagnation episodes. In a study sponsored by the Air Resources Board, scientists from the University of California at Davis and Berkeley estimate that rising temperatures from climate change will increase ozone levels in California’s major air basins.²¹ The study also predicts that peak

²¹ Kleeman, M.J., S.-H. Chen, and R.A. Harley. 2010. Climate change impact on air quality in California: Report to the California Air Resources Board. <http://www.arb.ca.gov/research/apr/past/04-349.pdf>, provided here as attachment Item 30.

Air and Radiation Docket

Docket ID No. EPA-HQ-OAR-2012-0562

October 19, 2012

Page 9

concentrations of dangerous airborne particles will increase in the San Joaquin Valley due to the effects of climate change on wind patterns. This study provides further evidence of what is becoming known as the 'climate penalty', where rising temperatures increase ground-level ozone and health-damaging particles, despite the reductions achieved by successful programs targeting smog-forming emissions from cars, trucks and industrial sources. Authors of the study found that California could experience as many as six to 30 more days with ozone concentrations that exceed federal clean-air standards, depending on the extent of increased temperatures. In the South Coast region, projected ozone changes due to climate change in the year 2050 could increase by nine to 18 parts per billions. The study also predicts that peak concentrations of dangerous airborne particles will increase in the San Joaquin Valley due to the effects of climate change on wind patterns.

Climate change also makes California forests more vulnerable to fires due to hotter and drier conditions. Earlier snowmelt, higher temperatures and longer dry periods create a longer fire season that will directly increase wildfire risk (frequency and severity). Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. Human activities will continue to be the biggest factor in ignition risk. Already, the frequency of large wildfires is increasing in the Western United States, including California. Projections suggest that the frequency and size of forest fires is expected to increase, perhaps several fold, by the end of the century.

Previous research estimated that the long-term increase in fire occurrence associated with a higher emissions scenario is substantial, with increases in the number of large fires statewide ranging from 58-128 percent above historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57-169 percent, depending on location.²² A recent study examined the interactions of fire emissions with urban smog.²³ An instrumented DC-8 aircraft was employed to perform airborne observations in rural and urban environs of California during the summer 2008 NASA ARCTAS California campaign. The coincidence of large wildfire episodes in Northern California allowed for studies of fire emissions, their composition, and their interactions with rural and urban air. Although some fire plumes over California contained few nitrogen oxides (NO_x) and virtually no ozone enhancement, others contained ample volatile organic compounds and sufficient NO_x, largely from urban influences, to result in significant ozone formation. The highest observed ozone concentrations of 170 ppb

²² Krawchuk, M. A., and M. A. Moritz (2012). *Fire and Climate Change in California*. California Energy Commission. Publication number: CEC-500-2012-026, provided here attachment Item 31.

²³ H.B. Singh, et al., (2012): Interactions of fire emissions and urban pollution over California: Ozone formation and air quality simulations. *Atmospheric Environment*, **56**, 45–51, provided here as attachment Item 32.

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
October 19, 2012
Page 10

were also in fire-influenced urban air masses. This suggests that forest fire plumes produced significant ozone when mixed with urban pollution by both providing precursors and reducing the titration effect. These sporadic fires have the potential to create “exceptional events” leading to air quality exceedances that are subject to regulatory relief from U.S. EPA.

Another study,²⁴ based on results from 15 climate models, estimated future wildfire activity over the western United States during the mid-21st century (2046-2065). The results show that the fire season lengthens by 23 days in the warmer and drier climate at mid-century. It was also indicated that wildfire emissions will increase summertime surface organic carbon aerosol over the western United States by 46-70% and black carbon by 20-27% at midcentury, relative to the present day. The pollution is most enhanced during extreme episodes: above the 84th percentile of concentrations, organic carbon increases by ~90% and black carbon by 28-50%.

Public Health. In addition to the aforementioned air quality impacts, climate change may significantly impact some of California’s other health indicators. Climate change may alter the frequency, timing, intensity, and duration of extreme weather events (meteorological events that have a significant impact on local communities). Injury and death are the direct health impacts most often associated with natural disasters. Research suggests that the most serious health effects will not be primarily related to changes in average climate, but rather to increased frequency of extreme conditions, principally more frequent, longer, and more intense heat waves. Studies of heat waves in urban areas have shown an association between increases in mortality and increases in heat, measured by maximum or minimum temperature, heat index (a measure of temperature and humidity), or air-mass conditions. Heat wave conditions are also associated with weather patterns conducive to increased air pollution formation (such as tropospheric ozone) and wildfire outbreaks, both of which pose risks to public health. In addition, climate change has the potential to influence asthma symptoms, the incidence of infectious disease, and the potential to affect humans indirectly through impacts on food and water supplies and quality.

Recent studies have improved our understanding of Californians’ vulnerability to extreme heat events and other extreme climate events. Some segments of the population are more sensitive than others and may have less ability to prepare for, cope with, or adapt to changing conditions, and will be impacted disproportionately. For example, a recent report²⁵ shows that mortality from various cardiovascular conditions

²⁴ Xu Yue et al (2012). Ensemble projections of wildfire activity 1 and carbonaceous aerosol concentrations over the western United States in the mid-21st century. Manuscript in preparation, provided here as attachment Item 33.

²⁵ Cooley, H., E. Moore, M. Heberger, and L. Allen (2012). *Social Vulnerability to Climate Change in California*. California Energy Commission. Publication Number: CEC-500-2012-013, provided here as attachment Item 34.

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
October 19, 2012
Page 11

on extremely hot days is up to 28 percent higher than normal background mortality. New studies also show elevated risks for hospitalization, stroke, diabetes, acute kidney failure, dehydration, or pneumonia for those 65 years and older, infants under 1 year of age, and African Americans. The need for emergency room visits for a variety of conditions also increases for many segments of the population, while preterm delivery is more likely for all pregnant women, especially for younger, African American and Asian American women. New studies for the San Francisco Bay Area and Fresno County find that minority and poor populations have significantly lower access to common adaptation options for dealing with health threats from climate change, such as tree canopy for shading or car ownership to go to public cooling centers. Another study finds Los Angeles to have a disproportionately large number of highly vulnerable people at risk during extreme heat.

Sheridan et al.'s study²⁶ indicates that excessive heat significantly impacts the health of Californians during irregular but intense heat events. Through the 21st century, a significant increase in impact is likely, as the state experiences a changing climate as well as an aging population. To assess this impact, future heat-related mortality estimates were derived for nine metropolitan areas in the state for the remainder of the century. Five different climate scenarios were examined. Results show a significant increase in heat events over the 21st century, with oppressive weather types potentially more than doubling in frequency, and with heat events of two weeks or longer becoming up to ten times more common at coastal locations.

The association between temperature and mortality has been widely researched, although the association between temperature and morbidity has been less studied. A recent study examined the association between mean daily apparent temperature and emergency room (ER) visits in California.²⁷ In this study more than 1.2 million ER visits were included. Positive associations were found for same-day apparent temperature and heart illness, stroke, cardiac dysrhythmia, hypotension and a few other health problems. Most of these health problems remained relatively unchanged after adjusting for air pollutants. Risks often varied by age or racial/ethnic group. It was concluded that increased temperatures were found to have same-day effects on ER admission for several outcomes. Age and race/ethnicity seemed to modify some of these impacts.

Sea Level Rise. As global warming continues, California's coastal regions will be increasingly threatened by more intense storms and warmer water temperatures. Many

²⁶ Scott Sheridan et al. (2012). Future heat vulnerability in California, Part I: projecting future weather types and heat events. Climatic Change, DOI 10.1007/s10584-012-0436-2, provided here as attachment Item 35.

²⁷ Basu R, Pearson D, Malig B, et al.(2012) The effect of high ambient temperature on emergency room visits. *Epidemiology* 2012 Nov; 23(6):813-20, provided here as attachment Item 36.

Air and Radiation Docket

Docket ID No. EPA–HQ–OAR–2012–0562

October 19, 2012

Page 12

of the areas indicated as vulnerable to sea water inundation are presently behind levees and would be inundated if those levees were breached or overtopped. Sea level rise will threaten coastal areas and island nations, severe weather events like droughts, floods, and hurricanes will become more frequent and intense, and water supply will be affected by declining snowmelt. These impacts have severe economic, environmental, and public health and safety implications. The sea level off most of California is expected to rise about one meter over the next century, an amount slightly higher than projected for global sea levels, and will likely increase damage to the state's coast during storm surges and high waves; this increases the risk of flooding, coastal erosion, and wetland loss. Even if storminess does not increase in the future, sea-level rise will magnify the adverse impact of storm surges and high waves on the coast. Several observational studies also have reported that the largest waves have been getting higher and that winds have been getting stronger over the past few decades.

Sea level is not uniform everywhere and is continually changing. A number of natural processes affect sea level at any given place and time—from tides that produce hourly changes to tectonic forces that take place over millions of years. The rate of sea level rise is accelerating off California's coast, and it is accelerating more quickly along the coast south of Cape Mendocino. For the California coast south of Cape Mendocino, it is projected that sea level will rise 4 to 30 cm by 2030 relative to 2000, 12 to 61 cm by 2050, and 42 to 167 cm by 2100. Although sea level rise will accelerate less quickly north of Cape Mendocino, it is still projected to rise significantly by 2100. The differences in ranges projected for areas north and south of Cape Mendocino reflect the regional conditions for plate tectonics. Whereas areas north of Cape Mendocino are experiencing land uplift—resulting in relatively moderated sea-level rise—areas south of Cape Mendocino are experiencing land subsidence, which further exacerbates the relative impact of sea-level rise. Sea level rise coupled with coastal storms could make 100-year storms into annual occurrences by 2050.²⁸

Climate model simulations were used to investigate possible changes in regional climate over California.²⁹ All simulations indicate that hot daytime and nighttime temperatures (heat waves) increase in frequency, magnitude, and duration from the historical period and during the projected period through the first half of the twenty-first century. Projected precipitation is marked by considerable variability between years and decades. In the southern half of California, the models show a decline in annual precipitation. Sea level, at hourly intervals for the historical through the projected

²⁸ National Research Council Report (2012). Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future. PDF is available from The National Academies Press at http://www.nap.edu/catalog.php?record_id=13389, provided here as attachment Item 37.

²⁹ Cayan, Dan, Mary Tyree, and Sam Iacobellis (2012). Climate Change Scenarios for the San Francisco Region. California Energy Commission. Publication number: CEC-500-2012-042, provided here as attachment Item 38.

Air and Radiation Docket

Docket ID No. EPA-HQ-OAR-2012-0562

October 19, 2012

Page 13

twenty-first century, is estimated for selected tide gage sites along the California coast, with rises in the sample of simulations considered here ranging from 27 to 48 centimeters (cm) (11 to 19 in) over historical levels by 2050, and ranging from 77 cm to 140 cm (30 to 55 in) over historical levels by 2100.

As sea-level rises, there will be an increased rate of extreme high sea-level events, which increases the duration of extremely high water. This increases the exposure to potential damage, since the winter storms that result in anomalously high sea levels are often accompanied by high winds and high ocean waves. Importantly, as sea level rises over the next several decades, there would be an increasing tendency for heightened sea-level events to persist for more hours, which would likely result in a greater threat of coastal erosion and other damage. The rise of mean sea level would provoke an increase in extreme events above a relatively high or rare historical threshold. Such events will become much more frequent and have longer durations than has been seen historically.

Sea level rise also threatens portions of the water supplies for the Bay Area, San Joaquin Valley, and Southern California that flow through the Delta and serve millions of Californians. At present 280,000 people face health and safety risks from coastal flooding; others face permanent property losses due to inundation and erosion. Critical infrastructure such as roads and highways, ports, harbors, airports, wastewater treatment facilities and power plants are located in coastal low-lying areas. Coastal habitats such as beaches, dunes, cliffs, and bluffs could be lost to erosion, while wetlands and bays could face permanent inundation.

Agriculture. The diversity and size of California's agricultural sector creates unique opportunities and challenges in its responses to climate change. Global warming is likely to change precipitation, temperature averages, maximums and minimums, pest and weed ranges, the length of the growing season, and other factors. These will all affect crop productivity. Several scientific studies have been conducted that document the adverse impact that climate change is likely to have on crops and food supply. Agriculture is a major industry in California: there are 88,000 farms and ranches. California agriculture is a nearly \$40 billion dollar industry and it generates at least \$100 billion in related economic activity. Agricultural vulnerability to climate change is driven by potential reductions in water supply, owing to potential transfer of water to satisfy urban demand and potential reduction in future precipitation. Increasing average temperatures—especially nighttime minimum temperatures—also pose threats to agriculture.

Air and Radiation Docket

Docket ID No. EPA-HQ-OAR-2012-0562

October 19, 2012

Page 14

Agriculture in the Central Valley of California, one of the USA's main sources of fruits, nuts, and vegetables, is highly vulnerable to climate change impacts in the next 50 years. A case study³⁰ in Yolo County shows that climate change and the effects of GHG emissions are complex, and several of the county's current crops will be less viable in 2050. Farmers in Yolo County rely on groundwater for almost 40% of their supply in a normal water year, and this dependency is expected to increase under possible future drought and population growth conditions. Rice, pasture, and hay have the highest applied water, and are therefore the most vulnerable to water shortages. Statistical relationships between climate, water availability, relative prices, and crop acreage by crop reveal several significant impacts; a higher price for the crop raises the acreage of planted rice, wheat, prunes, and grapes.

Climate change has the potential to alter the San Francisco Bay Area's agricultural production, a \$2 billion industry. Two of the top sectors, wine and ranching, were examined in a recent study.³¹ The results indicate altered precipitation patterns could mean delayed germination and earlier senescence, resulting in shorter growing seasons. An increase in the frequency of extremely dry years also increases the uncertainty of forage availability. Wine grape yields are projected to increase throughout much of the Bay Area, but wine grape quality may decline substantially under future climate conditions, as the crop ripens earlier during hotter months. The implications for these shifts in wine grape and forage production are that the aspects of Bay Area agriculture most sensitive to climate change are not yields, but subtler nuances of production such as quality and timing.

California is also responsible for more than 90 percent of the nation's production of almonds, apricots, raisin grapes, olives, pistachios and walnuts. Many of these crops are very sensitive to multiple facets of climate change. While slightly higher temperatures are initially beneficial to these crops, overall higher temperatures are very harmful. Increases in temperatures and CO₂ may benefit some crops in certain regions. But, to realize these benefits, nutrient levels, soil moisture, water availability, and other conditions must also be met. Predicted changes in the frequency of severity of droughts and floods could offset any crop benefits. Determining how CO₂-induced changes affect plant growth and water relations will also impact the complex interactions with pests (weeds, insects, and diseases).³² Although the direct effect of

³⁰ Jackson, L. E., et al. (2011) "Case study on potential agricultural responses to climate change in a California landscape." *Climatic Change* 109 (Suppl 1): S407-S427, provided here as attachment Item 39.

³¹ Rebecca Chaplin-Kramer (2012). *Climate Change and the Agricultural Sector in the San Francisco Bay Area: Changes in Viticulture and Rangeland Forage Production Due to Altered Temperature and Precipitation Patterns*. California Energy Commission. Publication number: CEC-500-2012-033, provided here as attachment Item 40.

³² Stephen A. Prior et al (2011) *A Review of Elevated Atmospheric CO₂ Effects on Plant Growth and Water Relations: Implications for Horticulture*. *HORTSCIENCE VOL. 46(2)*, provided here as attachment Item 41.

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
October 19, 2012
Page 15

increased CO₂ concentrations on crop yields is still uncertain, climate change is expected to decrease yields of the major grain crops across the globe.

Water Supply. Rivers fed from the Sierra Mountains have had runoff decreases between 5 and 15 percent in the 20th century. These changes in runoff have the potential to reduce the amount of water available to meet the state's irrigation, fire suppression, residential, environmental, and recreational needs during the summer, especially in dry years. Additionally, impacts have occurred on the state's snowpack: monitored Sierra Nevada glaciers diminished by 22-69 percent in the 20th century.

Precipitation models show a shift toward drier conditions in Central and Southern California, with a decrease of at least 8 percent in the already dry San Diego region. The drier conditions are brought about by declines in both rain and snowfall. By the latter half of this century, precipitation changes could lead to critically dry water years occurring almost a third more often in the San Joaquin Valley. In addition to changes in precipitation amounts, the form of precipitation will also change. The state will have more precipitation fall as rain than as snow, which has implications for snow pack and runoff, more snow melting earlier in the spring. Hence, less melting snow will be available during hot, dry summer months for irrigation, drinking water, hydropower etc. Additionally, climate change will exacerbate on-going conflicts for water by increasing demands by users and the environment and decreasing supply.

One study³³ illustrates problems in California's water supply allocations (the amount of water that goes to different users each year) if the current allocation criteria and decision-making procedures continue to be used as the climate changes. Depending on what type of precipitation season has occurred, different amounts of water are allocated among the state's many users. Using the current allocation thresholds, the study projects changes in stream flow for the Sacramento and San Joaquin Valleys, showing that by the latter half of the 21st century, critically dry water years could occur substantially more often (8 percent more frequently in the Sacramento Valley and 32 percent more often in the San Joaquin Valley), compared to the historical period (1951-2000). During such critically dry years it will be nearly impossible to satisfy the state's water needs, including those for agricultural and environmental purposes, which could affect the farm economy and endangered species. Another study,³⁴ focusing on legal and institutional barriers to adaptation suggests that climate change (coupled with future

³³ Null, S. E., and J. H. Viers (2012). Water and Energy Sector Vulnerability to Climate Warming in the Sierra Nevada: Water Year Classification in Non-Stationary Climates. California Energy Commission. Publication number: CEC-500-2012-015, provided here as attachment Item 42.

³⁴ Hanemann, M., D. Lambe, and D. Farber (2012). Climate Vulnerability and Adaptation Study for California: *Legal Analysis of Barriers to Adaptation for California's Water Sector*. California Energy Commission. Publication number: CEC-500-2012-019, provided here as attachment Item 43.

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
October 19, 2012
Page 16

population increases) will exacerbate ongoing conflicts over water by increasing demand and decreasing supply. The study concludes that the most important step toward preparing for climate change would be to implement and enforce an accurate monitoring system that records who is diverting water in California, in what quantities, and when. Adaptation will be needed to address the projected changes to the available supply of water and to the demand for water. For successful adaptation to occur, there are a number of prerequisites, almost none of which are currently in place.

Ecosystems. California is one of the most ecologically diverse places in the world. The state's ecosystems also provide a wide spectrum of goods and services supporting the economy of California and human well-being, including fresh water, fertile soil, biological and genetic diversity, crop pollination, carbon storage, climate stabilization, and recreational opportunities. All of these values and benefits can be lost when species are lost or ecosystems become unhealthy and fragmented, or burn in wildfires.

A number of changes in the population, distribution, and viability of native species in California have been connected to climate change. For example, almost half of the species surveyed in Yosemite National Park show a change in the elevation at which they can be found today, compared to early in the 20th century. Most of these changes involved species moving to higher elevations, which indicates pressure from increasing temperatures forcing species higher in elevation to meet their temperature requirements.³⁵ Observed contractions in the range of species mostly involved higher elevation species such as the Bushy-tailed woodrat, Pika, and Alpine chipmunk. From 1983 to 2004, tree mortality in forests of the Sierra Nevada has increased at the average rate of 3 percent per year. The increase in mortality rate coincides with a temperature-driven increase in estimated drought stress on the trees.

Ecological impacts may become more severe if species are unable to overcome physical barriers (e.g., human settlements) to migrate to areas with suitable climatic conditions as climate evolves in the California landscape. Preliminary identification of these important migration corridors plays a key role in the preservation of the ecological richness of California. Comparisons of current data with species data from over a century ago are being used to improve the estimation of how ecological systems in California might evolve through this century as climate changes accelerate. Climate change will have drastic effects on some species and habitats. Some climatic zones such as alpine climates could disappear entirely. Eighty-three percent of California's native fish species are at high risk of extinction due to climate change, while only 19

³⁵ Santos, Maria J., Craig Moritz, and James H. Thorne (2012). Identifying Vulnerable Species and Adaptation Strategies in the Southern Sierra of California Using Historical Resurveys. California Energy Commission. Publication number: CEC - 500 - 2012 - 025 , provided here as attachment Item 44.

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
October 19, 2012
Page 17

percent of non-native fish are at high risk.³⁶ Fish requiring cold water, such as Coho salmon and steelhead trout, are particularly at risk for extinction.

Economic Impacts. Climate change poses enormous risks to California's economy, from the impacts on public health and natural resources, to infrastructure, agriculture, tourism, and more. Putting a dollar value on the physical impacts of climate change helps us to begin to balance costs associated with preparing for climate impacts and reducing greenhouse gas emissions with the cost of inaction or delayed action. Studies specific to California, utilizing the data from climate modeling have examined certain potential economic consequences of climate change impacts. These initial assessments demonstrate that climate change poses significant financial risks for California. The studies examined the costs associated with both lower (significant emission reduction) and higher ("business as usual") greenhouse gas emissions.

Water System and Levee Failure. California's water distribution system is predicted to incur climate change related costs between \$140 and \$400 million annually by the end of the century. The added risk of a major failure of the levee system in the Sacramento/San Joaquin Delta due to accelerated sea level rise could substantially increase the costs and the risk to local economies.

Property at Risk from Coastal Flooding. The costs of replacing property at risk of coastal flooding or protecting vulnerable areas are estimated to be at least \$14 billion and \$100 billion, respectively.³⁷ A socioeconomic analysis suggests that there is the likelihood of a disproportionate impact on low-income communities and those of color from sea-level rise.

Increase in Electricity Costs. Under a lower GHGs emissions scenario, it is projected that electricity expenditures in the residential sector could increase by \$3.5 billion per year by 2100. For the higher emission scenario, these incremental costs are estimated at \$15 billion annually. For high-elevation hydropower units, up to 20 percent decreases in annual electricity generation would translate to an annual loss of about \$1 billion.

Decline in Timber Production, Damage from Fires. An overall decline is expected during this century in the value of harvested timber, with decreases between 4.9 percent and

³⁶ Moyle, Peter B. et al, (2012). Projected Effects of Future Climates on Freshwater Fishes of California. California Energy Commission. Publication number: CEC - 500 - 2012 - 028, provided here as attachment Item 45.

³⁷ [Executive Summary](http://www.energy.ca.gov/2010publications/CAT-1000-2010-004/CAT-1000-2010-004-ES.PDF) of Climate Action Team Biennial Report to the Governor and Legislature (2010), available at <http://www.energy.ca.gov/2010publications/CAT-1000-2010-004/CAT-1000-2010-004-ES.PDF>, provided here as attachment Item 46.

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
October 19, 2012
Page 18

8.5 percent in California. By 2085, damages from forest fires on housing units could be \$0.7 to \$14 billion per year in the higher emissions scenario and \$0.5 to \$11 billion per year in the lower emissions scenario.

Compelling & Extraordinary Conditions: Conclusion

California has provided abundant evidence of its need to reduce emissions from its passenger vehicle fleet to meet compelling and extraordinary conditions facing our State. If anything, our need for these reductions of all air pollutant types is more urgent than when EPA recently found it could not make a determination to the contrary, thereby granting our requests. California faces persistent smog-forming and particulate matter conditions for most of its population, conditions that will become more difficult to address as new more stringent federal ambient air quality standards are implemented. And we have provided overwhelming evidence of the increasingly apparent effects of global warming and our need to reduce greenhouse gas emissions contributing to those impacts. California easily meets this prong of the waiver analysis, and currently there is nothing in the record to support a contrary determination by EPA.

Finally, because no commenter has questioned the technological feasibility of the Advanced Clean Car Program, EPA has no basis to deny our requests for any model year for any of the associated LEV III, GHG, or ZEV regulations. Therefore EPA should act to grant our request promptly, and no later than the end of 2012, to provide manufacturers with their desired lead time for planning and implementing new model year decisions.

Sincerely,


Tom Cackette
Chief Deputy Executive Officer

cc: (via e-mail, with attachments)

David Dickinson
Office of Transportation and Air Quality
United States Environmental Protection Agency

Air and Radiation Docket

Docket ID No. EPA-HQ-OAR-2012-0562

October 19, 2012

Page 19

In support of this supplement to our May, 2012 waiver request, the following additional documents pertaining to the ACC Package are enclosed on compact disc, with the Item numbering continuing from the May, 2012 request:

17. Sections V.B.-C., 74 Fed.Reg. 32744, 32759-32763 (July 9, 2009), and pp. 19-39 of enclosed California brief
18. <http://www.epa.gov/airquality/greenbook/gnc.html>
19. <http://www.epa.gov/airtrends/values.html>.
20. <http://www.aqmd.gov/aqmp/2012aqmp/RevisedDraft/Ch8.pdf>
21. <http://www.aqmd.gov/aqmp/2012aqmp/RevisedDraft/AppVII.pdf>
22. http://www.arb.ca.gov/planning/sip/2007sip/2011_ozone_sip_staff_report_with_appendices.pdf
23. Proposed approval of San Joaquin Valley 8-hour Ozone SIP, 76 FR 57846 (September 16, 2011)
24. <http://www.valleyair.org/Workshops/postings/2012/10-9-12PM25/11AppendixBEmissionInventory.pdf>
25. <http://www.arb.ca.gov/regact/2012/leviiighg2012/levappt.pdf>
26. *Vision for Clean Air: A Framework for Air Quality and Climate Planning*, June 27, 2012
27. M. Bevis et al Bedrock displacements in Greenland manifest ice mass variations, climate cycles and climate change. Proceedings of the National Academy of Sciences, 2012; DOI: 10.1073/pnas.1204664109
28. Greg Biging et al., Impacts of Sea Level Rise on the Transportation Infrastructure in the Bay Area. California Energy Commission report, 2012 (<http://www.energy.ca.gov/2012publications/CEC-500-2012-040/CEC-500-2012-040.pdf>).
29. Our Changing Climate 2012 Vulnerability & Adaptation to the Increasing Risks from Climate Change in California. Publication # CEC-500-2012-007. Posted: July 31, 2012; available at http://www.climatechange.ca.gov/adaptation/third_assessment/
30. Kleeman, M.J., S.-H. Chen, and R.A. Harley. 2010. Climate change impact on air quality in California: Report to the California Air Resources Board. <http://www.arb.ca.gov/research/apr/past/04-349.pdf>.
31. Krawchuk, M. A., and M. A. Moritz (2012). Fire and Climate Change in California. California Energy Commission. Publication number: CEC-500-2012-026.
32. H.B. Singh, et al., (2012): Interactions of fire emissions and urban pollution over California: Ozone formation and air quality simulations. Atmospheric Environment, 56, 45–51.

Air and Radiation Docket

Docket ID No. EPA-HQ-OAR-2012-0562

October 19, 2012

Page 20

33. Xu Yue et al (2012). Ensemble projections of wildfire activity 1 and carbonaceous aerosol concentrations over the western United States in the mid-21st century. Manuscript in preparation.
34. Cooley, H., E. Moore, M. Heberger, and L. Allen (2012). Social Vulnerability to Climate Change in California. California Energy Commission. Publication Number: CEC-500-2012-013.
35. Scott Sheridan et al. (2012). Future heat vulnerability in California, Part I: projecting future weather types and heat events. Climatic Change, DOI 10.1007/s10584-012-0436-2.
36. Basu R, Pearson D, Malig B, et al.(2012) The effect of high ambient temperature on emergency room visits. Epidemiology 2012 Nov; 23(6):813-20.
37. National Research Council Report (2012). Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future. PDF is available from The National Academies Press at http://www.nap.edu/catalog.php?record_id=13389.
38. Cayan, Dan, Mary Tyree, and Sam Iacobellis (2012). Climate Change Scenarios for the San Francisco Region. California Energy Commission. Publication number: CEC-500-2012-042.
39. Jackson, L. E., et al. (2011) "Case study on potential agricultural responses to climate change in a California landscape." Climatic Change 109 (Suppl 1): S407-S427.
40. Rebecca Chaplin-Kramer (2012). Climate Change and the Agricultural Sector in the San Francisco Bay Area: Changes in Viticulture and Rangeland Forage Production Due to Altered Temperature and Precipitation Patterns. California Energy Commission. Publication number: CEC-500-2012-033.
41. Stephen A. Prior et al (2011) A Review of Elevated Atmospheric CO2 Effects on Plant Growth and Water Relations: Implications for Horticulture. HORTSCIENCE VOL. 46(2).
42. Null, S. E., and J. H. Viers (2012). Water and Energy Sector Vulnerability to Climate Warming in the Sierra Nevada: Water Year Classification in Non-Stationary Climates. California Energy Commission. Publication number: CEC-500-2012-015.
43. Hanemann, M., D. Lambe, and D. Farber (2012). Climate Vulnerability and Adaptation Study for California: Legal Analysis of Barriers to Adaptation for California's Water Sector. California Energy Commission. Publication number: CEC-500-2012-019.
44. Santos, Maria J., Craig Moritz, and James H. Thorne (2012). Identifying Vulnerable Species and Adaptation Strategies in the Southern Sierra of

Air and Radiation Docket

Docket ID No. EPA-HQ-OAR-2012-0562

October 19, 2012

Page 21

California Using Historical Resurveys. California Energy Commission.

Publication number: CEC-500-2012-025

45. Moyle, Peter B. et al, (2012. Projected Effects of Future Climates on Freshwater Fishes of California. California Energy Commission.

Publication number: CEC-500-2012-028.

46. Executive Summary of Climate Action Team Biennial Report to the Governor and Legislature (2010), available at

<http://www.energy.ca.gov/2010publications/CAT-1000-2010-004/CAT-1000-2010-004-ES.PDF>



Air Resources Board



Matthew Rodriguez
Secretary for
Environmental Protection

Mary D. Nichols, Chairman
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Edmund G. Brown Jr.
Governor

November 14, 2012

Janet Cohen, Hearing Officer
Docket ID No. EPA-HQ-OAR-2012-0562
USEPA Headquarters
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RE: California State Motor Vehicle Pollution Control Standards; Advanced Clean Car Program; Request for Waiver of Preemption; Opportunity for Public Hearing and Public Comment; 77 Fed.Reg. 53199 (August 31, 2012); DOCKET ID NO. EPA-HQ-OAR-2012-0562

Dear Ms. Cohen:

California's Air Resources Board (CARB) submits this letter and additional attachments to address comments raised by the National Automobile Dealers Association (NADA) (Document ID No. EPA-HQ-OAR-2012-0562-0367) and the joint comments of the Association of Global Automakers and the Alliance of Automobile Manufacturers (Global/Alliance) (Document ID No. EPA-HQ-OAR-2012-0562-0347), in order to provide the U.S. Environmental Protection Agency (EPA) with a more complete record for its waiver decision.

Protectiveness

To begin, while ARB doubts that comments raised even cumulatively come close to clearing NADA's suggested "preponderance of evidence" burden, EPA should reject NADA's invitation for EPA to jettison its administrative precedent applying a "clear and compelling" evidence standard to review of California's protectiveness determinations. As EPA has stated, "Although MEMA I did not explicitly consider the standard of proof under Section 209 in connection with a waiver request for 'standards,' there is nothing to suggest that the court's analysis would not apply with equal force to such determinations." 61 Fed.Reg. 53371 (October 11, 1996) (OBD II), Decision Document at p. 14. *Accord*, 49 Fed.Reg. at 18888 and 58 Fed.Reg. 4166 (January 7, 1993) (LEV I) Decision Document at pp. 19-20. See also H.R. Rep. No. 95-294 at 301-302 (1977),

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

Air and Radiation Docket
Docket ID No. EPA–HQ–OAR–2012–0562
November 14, 2012
Page 2

reprinted at 1977 U.S.C.C.A.N. 1077 (“There must be clear and compelling evidence that the state acted unreasonably in evaluating the risk of various pollutants in light of the air quality, topography, photochemistry, and climate in [California], before EPA may deny a waiver.”) EPA has thus applied the more restrictive standard of review for good reason, and should continue to do so. We also note that the “shifting” nature of the burden of proof for which NADA cites (p. 4) to the MEMA I case, just as easily allows EPA to continue applying the more restrictive standard.

In its prior submissions to the Docket ARB anticipated and addressed most of NADA’s more substantive comments (pp. 5-7, 12) regarding the Board’s determination that California’s passenger vehicle program is at least as protective as the federal program for these vehicles; here we have the following additional response.

NADA appears to be arguing that because manufacturers may ultimately exercise what is now¹ only a *proposed* option – scheduled for Board consideration at its November 15, 2012 hearing – to demonstrate compliance in California using National Program compliance results, therefore the California regulations on their face are not as protective. Because NADA misreads the regulations now under EPA waiver review, EPA should dismiss NADA’s argument.

California demonstrated that it was reasonable for the Board to determine that the California standards *as submitted* are, in the aggregate, as or more stringent than the applicable federal standards. This was a fairly simple determination by the time of our original June 2012 waiver submittal (including our May 2012 Support Document) because: 1) EPA’s proposed 2017-2025 model year GHG standards were not finalized; 2) EPA had not finalized, much less proposed, a 1 mg/mile PM standard and other criteria pollutant improvements for the 2015 and subsequent model years; and 3) EPA has no ZEV program that may achieve an additional incremental wells-to-wheels criteria pollutant reduction. That Board determination remains solid despite the now finalized National Program GHG rule because 2) and 3) remain true, and because EPA’s 2017-2025 National Program GHG standards, while finalized: A) do not account for upstream GHG emissions as do California’s; B) include vehicle multipliers for natural gas vehicles, effectively diluting the federal standard vis a vis California’s; and

¹ As ARB noted in its prior waiver submissions and at the September 19, 2012 hearing, while CARB has repeatedly stated its intent to meet its commitment to propose what others have termed a “deemed-to-comply” rule, our original June, 2012 waiver submission (including May, 2012 Support Document) correctly requested a waiver for the California standards as submitted; these are the standards EPA noticed for comment in this Docket. For this reason Global Automakers and Alliance insistence on EPA waiting until CARB considers this proposed compliance option (pp. 2-3) are similarly misplaced.

Air and Radiation Docket
Docket ID No. EPA–HQ–OAR–2012–0562
November 14, 2012
Page 3

C) relaxed criteria for GHG credits for mild hybrid-electric vehicle trucks, which also dilutes the federal standard.

Moreover, because EPA must review CARB's determination of compared California and federal *aggregate* emissions from what NADA concedes are "interrelated" regulations, EPA cannot countenance NADA's understated "Note " at the bottom of their page 2. There NADA attempts to *exclude* LEV III criteria pollutant benefits by sleight of hand; but the LEV III standards *include* the criteria pollutant (primarily PM) reductions that California's program has and the federal program thus far lacks. In fact, it is exactly this federal-California difference that Global Automakers and the Alliance – i.e., the associations representing the affected vehicle manufacturers – complain about in their comments (pp. 21-23).

In addition, the proposal for Board consideration this week is for an *optional* GHG compliance mechanism, and EPA is reviewing the feasibility of the GHG and related regulations as a whole. Even if CARB approves the pending proposed deemed-to-comply amendments, one or more (or even all) manufacturers could still choose to continue demonstrating compliance under the existing California regulations. Or, to the extent one or more (or even all) manufacturers choose National Program compliance to meet California's standards, *that demonstration becomes part of compliance in California*; our standards would then by definition yield at least – i.e. essentially equal – the GHG reductions as from the National Program, so California's standards cannot be less stringent. That is exactly what the proposed deemed-to-comply provision is designed to do: ensure GHG emission reductions accruing to California will always be at least as great as under the Board-approved January 2012 standards. Thus NADA fails no better under this "apples-to-apples" comparison it claims CARB failed to make. As the comparison is self-evident, there was no need for the Board to have made specific findings on the matter.

Contrary to NADA's assertion on p. 12, we do not believe California is required to show that each California standard – there the ZEV standard mentioned – is at least as protective in the aggregate; this would render the Clean Air Act Section 209(b) phrase "in the aggregate" superfluous. That is why CARB made one protectiveness determination. Nonetheless, NADA's argument also cites only to our tank-to-wheel analysis on p. 15 of our May, 2012 Support Document, while conveniently omitting the upstream criteria and PM *well-to-wheel* emissions reductions we noted on the very next page. As EPA has acknowledged in waiving preemption of California's prior ZEV program and its amendments, ZEVs are an investment in the future. While the exact level of indirect upstream emission reductions are uncertain now, we need these

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
November 14, 2012
Page 4

technologies to be commercialized by 2025 to reach smog forming and GHG emission reduction targets long term.

In reference to the ZEV standards NADA also argues that CARB failed to make the required protectiveness determination (Comment at p. 12), and that this failure is illustrated by CARB's conclusions that:

1. There is no criteria emissions benefit from including the ZEV proposal (sic) in terms of vehicle (tank-to-wheel or TTW) emissions.²; and
2. The ZEV regulations does not provide GHG emission reductions in addition to the LEV III GHG regulation given that ZEV emissions are included in determining compliance with the GHG standard.³

CARB responds that the purpose of the ZEV regulation is to commercialize the technologies needed to meet long term goals even beyond the emission reductions anticipated by the LEV III program. Additionally, while we do not account for any vehicle emission reductions from ZEVs above and beyond the LEV program, emission reductions are achieved from upstream sources well to tank. Table 6.2 of the ISOR details the well to wheel emissions benefits of the ZEV program compared to the LEV III program.

Finally, should the Board approve the proposed deemed-to-comply provision, ARB may submit further comment demonstrating that doing so does not affect the Board's prior protectiveness determination on the Advanced Clean Car program.

Compelling & Extraordinary Conditions

While NADA correctly states (p. 6) that there is no binding precedent specific to EPA waiving California's GHG regulations that requires EPA to treat California's motor vehicle program as a whole in reviewing the need for our GHG standards, NADA misses the point. We demonstrated (May 2012 Support Document, pp. 17-18, and October 19, 2012 Supplemental Comment p. 2) that EPA's longstanding administrative practice to review the need for separate standards in the context of the ongoing compelling and extraordinary conditions justifying California's motor vehicle program remains sound. Applying that appropriate standard of review, California's ongoing need remains clear.

² California Air Resources Board, *CAA Section 209(b) Waiver Support Doc.* (May, 2012), at p. 15.

³ California Air Resources Board, *CAA Section 209(b) Waiver Support Doc.* (May, 2012), at p. 16.

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
November 14, 2012
Page 5

NADA makes two other arguments that fare no better. First (p.7), they argue that California's commitment to accept National Program compliance demonstrates we do not need the emission reductions from our GHG regulations. But this is no different than the numerous times that EPA has followed California's lead – blazing a new trail as a laboratory for innovation – by catching up to or harmonizing with California's standards. Indeed, this was part of the Congressional design.⁴ Second, NADA argues (at p.8), that referring to our regulations as a “backstop” is some kind of forbidden political consideration EPA cannot recognize. Again, California's actions here are simply furthering the Congressional design of Section 209(b): to ensure that California can protect public health and welfare by ensuring its ability to separately implement and enforce necessary emission reductions through its own regulatory mechanisms. Section 209(b) guarantees that California can continue to set – or in this hypothetical concern, keep – standards that at times will be more stringent than applicable federal standards. Indeed, that is the whole point of the allowed separate California standards, as NADA itself concedes elsewhere (as described above) by acknowledging our standards must be as or more stringent as – i.e., as protective as – the federal standards.

NADA also argues that CARB's determination that the compelling and extraordinary conditions requirement is satisfied is based on flawed information. Specifically, they take issues with CARB's statement that by 2025 over 15 percent of all light-duty vehicles sales in California are likely to be ZEVs and TZEVs.⁵ NADA claims that: “This 15% figure is actually closer to an incredible 25% of all passenger vehicle sales when SUVs, pick-ups, and vans are subtracted as infeasible candidates for BEV and fuel cell technologies.”⁶ CARB responds that automakers are, according to their own press releases and statements⁷, pursuing a portfolio of technologies to meet the ZEV mandate and commercialize zero emission technologies. One reason a number of them are pursuing fuel cell technology is because fuel cell drive systems work very effectively in larger vehicle platforms and allow application of zero emission technology in a broader cross-section of vehicle platforms.

⁴ See 2006 National Academy of Science report at p. 4, attached here as Item 48.

⁵ NADA Comment at p. 13.

⁶ NADA Comment, fn. 70.

⁷ Toyota, Nissan, and Hyundai all provided testimony on product plans at the ACC Board Hearing. Announcements by Honda and Mercedes Benz are attached here as items 57 and 58.

Air and Radiation Docket
Docket ID No. EPA–HQ–OAR–2012–0562
November 14, 2012
Page 6

ZEV Consistency with Section 202(a)

In their comments, Global Automakers and the Alliance raise for the first time⁸ the novel claim that EPA must consider the feasibility of ZEV infrastructure in other states that may or may not continue, and presumably other states that are contemplating, adoption of California's ZEV standards in their state. (Comments at p. 12). Besides the obviously speculative nature such review would take, it's simply not permitted under waiver law's clear requirements or EPA's past application of those requirements.

The proper scope of EPA's inquiry is limited by the express terms of section 209(b). This limitation is well illustrated both in EPA's past waiver determinations⁹ and in caselaw.¹⁰ In its 2009 waiver determination for California's greenhouse gas emission standards EPA explicitly addressed the limitations on a section 209(b) analysis with regards to the standard's claimed impacts upon section 177 states.¹¹ In granting that waiver request, the Administrator stated: "section 209(b) does not authorize me in reviewing a waiver request to consider the impact of actions or potential actions taken by other states under section 177 of the Act. [Citation omitted.] I therefore will not consider this claim in determining whether to grant California's waiver request."¹²

While the consideration of a standard's feasibility in section 177 states is not proper under section 209(b), it is worth noting that section 177 requires that a state adopting a standard allow for at least two years to elapse before that standard may be applied to a given vehicle model year. This requirement of section 177 will allow a period of at least two years for the development of any necessary infrastructure within a state before that

⁸ Both manufacturer associations generally supported the Advanced Clean Cars standards in the state rulemaking proceeding, in which neither association (nor individual manufacturer therein) raised this entirely new theory. See attachment Items 48 and 49 here. Rather, the limited number of technological feasibility and lead time arguments that were submitted by industry during the Advanced Clean Cars rulemaking were focused on the 1 mg/mi PM standard. These were addressed in the Final Statement of Rulemaking for the LEV III element of the Advanced Clean Cars rulemaking, available at <http://www.arb.ca.gov/regact/2012/leviiighg2012/levfsor.pdf>. CARB submits that California is entitled to address such novel issues in its state rulemaking proceeding so closely followed by a waiver hearing, else they are waived for purposes of EPA's review.

⁹ 49 Fed.Reg. 18887-02, 18889 (May 3, 1984) and 58 Fed. Reg. 4166 (January 7, 1993), LIV I Decision Document, at pp. 20-21.

¹⁰ *Motor and Equipment Manufacturers Association v. EPA (MEMA I)*, 627 F.2d 1095, 1114-20 (Administrator properly declined to review potential anti-trust and constitutional implications of CARB regulations under 209(b).)

¹¹ 74 Fed.Reg. 32744, 32783 (July 8, 2009).

¹² *Ibid.*

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
November 14, 2012
Page 7

state's standard may come into effect. And here the states would provide well more – a decade more or a dozen years – before the final implementation year of the standards in 2025.

While we believe it would be entirely inappropriate under the law for EPA to review feasibility in other states, it is also worth noting that fueling infrastructure in states other than California does not seem to be a concern as both Nissan and General Motors are currently marketing advanced technology vehicles nationally, and Ford will begin 50 state marketing in early 2013. In addition, a number of Northeast states are preparing for plug-in electric vehicles through deployment of charging infrastructure. New York and Maryland have invested more than 5 million dollars in electric vehicle supply equipment¹³.

Regarding section 202(a), Global Automakers and the Alliance also argue that there is insufficient information to determine that there will be adequate infrastructure to justify ending the travel provisions for BEVs after MY2017. (Comments at p. 14). Specifically, these commenters take issue with the assessment in the “Interim Joint Technical Assessment Report: Light-Duty portion Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2017-2025” that the development of charging infrastructure is inadequate. CARB responds that there is much activity in the field of electric vehicle charging infrastructure. Public charging programs are being funded by the California Energy Commission¹⁴, U.S. DOE EV Everywhere program¹⁵, the U.S. DOE EV Project¹⁶ and other programs to address the needs of plug in vehicles. At this time it appears that charging infrastructure is sufficient and efforts underway to address infrastructure needs (through the programs listed above and through California's Zero Emission Vehicle Executive Order) are focused on the highest priority charging locations, namely multi-family dwellings and workplace charging.

Regarding feasibility, Global Automakers and the Alliance also claim that there is insufficient data on consumer demand to show that there will be adequate consumer demand to meet the ZEV sales requirements for model year 2018 and beyond. (Comments at pp. 17-21). In response CARB notes that current sales data for plug in vehicles show sales growing rapidly – faster than conventional hybrids grew when they

¹³ Press releases from Governor of New York (June 6, 2012) and Maryland Energy Administration (June 24, 2010), attached here as items 49 and 50.

¹⁴ 2011-2012 Investment Plan For The Alternative and Renewable Fuel and Vehicle Technology Program attached here as item 60

¹⁵ EV-Everywhere Challenge announcement (March 7, 2012) attached as item 61

¹⁶ The EV Project Overview (accessed November 14, 2012) attached as item 62

Air and Radiation Docket
Docket ID No. EPA–HQ–OAR–2012–0562
November 14, 2012
Page 8

were first launched¹⁷. Although the sales are yet at levels that will be required in the 2018 and beyond timeframe, these early sales data, aggressive programs for community readiness, public education, infrastructure development and incentives are in place to support as much as possible consumer acceptance and adoption of ZEV technologies.

NADA's concerns regarding consistency of California's GHG standards with section 202(a) (pp. 9-10) are likewise easily dismissed as they are not supported by the relevant caselaw or EPA's past application of the law. NADA claims that under section 202(a) it is inappropriate for EPA to grant a waiver for a given standard unless the rulemaking agency can "demonstrate technological feasibility for all the years in which those standards would be in effect" and so argues that EPA should not grant a waiver to California to regulate vehicles after model year 2022 as such projections of technological feasibility would be too speculative. (NADA Comment at p. 9). In attempting to force this novel requirement into EPA's analysis, NADA is disregarding decades of precedent that clearly sets out the appropriate "technological feasibility" analysis under section 202(a). Section 202(a) has historically been interpreted to allow for projections of likely future technological development. Such projections do not need to "possess the inescapable logic of a mathematical deduction."¹⁸ Instead, such a projection is considered sufficient if it "answers any theoretical objections to the [projected technology], identifies the major steps necessary in refinement of the technology, and offers plausible reasons for believing that each of those steps can be completed in the time available."¹⁹ Moreover, where the requirements of a standard are phased in over a lengthy period of time it bears on the likelihood of a proper finding of technological feasibility.²⁰ CARB submits that it has met the technological feasibility standards of section 202(a) with the projections and explanations submitted with its waiver request and notes that NADA is taking issue with standards that do not come into effect for a lengthy period of time. This great length of time – until after model year 2022- supports a finding of technological feasibility under NRDC, and would be in line with past EPA waiver decisions.

¹⁷ National Governors Association's "State and Local Plug-In Electric Vehicle Workshop Summary" attached as item 63

¹⁸ *Natural Resources Defense Council, Inc. v. U.S. Environmental Protection Agency*, (1981) 655 F.2d 318, 331.

¹⁹ *Ibid.*

²⁰ *Ibid.*

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
November 14, 2012
Page 9

Cost-effectiveness Measured by Cost Per Ton of CO2 Removed is Irrelevant

The Global Automakers and the Alliance argue that EPA should consider the cost of compliance with the ZEV program in terms of its cost-effectiveness per ton of CO₂ removed. (Comments at pp. 16-17). Such a metric is irrelevant under section 202(a)'s cost of compliance analysis and EPA has never considered it in granting past waivers.

In its 2009 waiver determination for California's greenhouse gas emission standards the administrator described the appropriate cost of compliance analysis under section 202(a):

Consistent with *MEMA I*, the Agency has evaluated costs in the waiver context by looking at the actual cost of compliance in the time provided by the regulation, not the regulation's cost-effectiveness. Cost-effectiveness is a policy decision of California that is considered and made when California adopts the regulations, and EPA, historically has deferred to these policy decisions. EPA has stated in this regard, 'the law makes it clear that the waiver request cannot be denied unless the specific findings designated in the statute can be made. The issue of whether a proposed California requirement is likely to result in only marginal improvement in air quality not commensurate with its cost or is otherwise an arguably unwise exercise of regulatory power is not legally pertinent to my decision under section 209. . .' [Citation omitted.] Thus under the language of section 202(a)(2), EPA will look at the compliance costs for manufacturers in developing and applying the technology with the costs being broken down on a cost per vehicle or unit basis.²¹

In sum, the cost-effectiveness analysis that the commenters want EPA to apply is wholly irrelevant to the requirements of section 202(a) and so should be disregarded.

Looking beyond the legal irrelevance of the commenters' proposed analysis, it is worth noting that ARB would consider the ZEV program in conjunction with the LEV program

²¹ 74 Fed.Reg. 32744, 32775 (July 8, 2009.) (Emphasis added.)

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
November 14, 2012
Page 10

when considering the costs and benefits of the program as a whole. This is appropriate because in their entirety, the program affects new motor vehicle smog forming and greenhouse gas emissions. The costs are reasonably spread across the entire new vehicle fleet because that is what consumers will most likely see; in order to successfully place ZEVs with consumers, their incremental costs will be spread throughout the vehicle fleet. This is consistent with the introduction of other new technologies and vehicle lines.

The ZEV regulation remains an important part of California's plans to reach attainment of health based air quality standards. To the extent that California still requires emission reductions from passenger cars and light trucks beyond 2025, it is imperative that zero emission technologies become commercially available so that progress can continue beyond the reductions expected from LEV III.

Auto Manufacturers, not Dealers, are Regulated Parties Under ZEV Regulation

NADA claims that:

“For Dealers in California and in the Section 177 states that have adopted ZEV mandates, the new ZEV mandates cause direct and substantial economic harm. ZEV mandates require dealers to purchase from their manufacturers vehicles that are costly to buy, finance, and market, and support, at the expense of a wide-range of conventionally- and alternatively-propelled vehicles that are acceptable to and demanded by the retail marketplace.” (NADA Comments p. 11).

In response, it is important to recognize that the ZEV regulations do not place requirements on dealers to offer for sale or sell ZEVs; rather the requirement is on the automakers. As is demonstrated by current automaker practice, ZEVs are being marketed by selected dealers willing to take on the advanced technology products. Dealers hoping to include ZEVs in their showrooms are applying to automakers to be accepted as sellers of ZEVs²². Since the obligation to sell and place ZEVs in service falls to the automakers, it is the automakers' responsibility to make the subject cars marketable and sellable by the dealers. They have accomplished this to date with

²² Forbes.com article (May 23, 2012) attached here as item 51.

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
November 14, 2012
Page 11

competitive pricing and incentives as well as automaker sponsored advertising and consumer education.²³

Market for ZEVs is Not Limited by Consumer Concerns on Range and Cost

NADA's comments imply that the market for ZEVs is limited because of consumer concerns with limited range and upfront costs.²⁴

CARB responds that a more appropriate measure of ZEV market success and growth potential would be to look at the years in which ZEVs have actually been available to consumers. In the last two years, with the introduction of the Nissan Leaf, Ford Focus EV, Honda Fit EV, Mitsubishi iMiEV, and others, BEV sales have grown 228 percent²⁵. While the numbers are still small compared to the market as a whole, this market segment is faster growing than most conventional new vehicle market entries.

CARB's ZEV Standards Satisfy Section 202(a)'s Technological Feasibility Requirements

NADA disregarded well established law to create its own definition of "technological feasibility" under section 202(a). NADA wants the analysis to require waiver applicants to establish that ZEV technology:

1. Be at least as safe as comparable conventionally-fueled vehicles,
2. Offer a range comparable to conventionally-fueled vehicles,
3. Offer a refueling time comparable to conventionally-fueled vehicle,
4. Offer performance attributes and capabilities comparable to similar sized and conventionally-fueled vehicles, and
5. Most importantly, come to market at a cost comparable to conventionally-fueled vehicles.²⁶

²³ Ford Motor Company press release (April 18, 2012), Honda Fit EV Frequently Asked Questions (accessed November 14, 2012), Mitsubishi i-MiEV Frequently Asked Questions (accessed November 14, 2012), and Nissan LEAF website (accessed November 14, 2012), attached here as items 52 through 55.

²⁴ "As of January 1995, out of 16,235,000 vehicles registered in California, only 1,079 were fuel cell vehicles and BEVs. As of January 2012, out of 30,495,000 light-duty vehicles registered in California, less than 5,000 were fuel cell vehicles and BEVs." (NADA Comments, fn. 63).

²⁵ Natural Resources Defense Council post (October 31, 2012) attached here as item 56

²⁶ NADA Comment at p. 15.

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
November 14, 2012
Page 12

CARB responds that NADA's position is not in line with the law. Technological feasibility is traditionally and correctly assessed on the following: cost (*Motor and Equipment Mfrs. Ass'n, Inc. v. E.P.A.*, (1979) 627 F.2d 1095, 1118), performance (*International Harvester Co. v. Ruckelshaus*, (1973) 478 F.2d 615, 641-647), and durability (*Natural Resources Defense Council, Inc. v. U.S. Environmental Protection Agency*, (1981) 655 F.2d 318, 333-335 (NRDC)). The ZEVs produced for the regulation will meet the same safety requirements that conventionally fueled vehicles meet. They already achieve acceleration and power characteristics expected on traditional vehicles and have demonstrated adequate durability. Range and refueling times are characteristics not traditionally taken into consideration. The automakers are targeting range for battery electric vehicles that match up with the vast majority of daily driving needs for most consumers.²⁷ For fuel cell vehicles, automakers have demonstrated range capability equal to or greater than conventionally fueled vehicles. With regard to refueling time, BEV drivers look at refueling differently; 30 seconds a day at home to plug in and have a full range daily instead of visiting a gasoline station weekly is characterized as much more convenient. Fuel cell vehicles refuel in about the same amount of time as a gasoline car. By all of these measures ZEVs are more than technologically feasible for commercialization, certainly so with the abundant nine to 12 years of lead time for the 2022-2025 model years that are the focus of the comments.

Current Low Level Particulate Matter Measurement Capabilities are Adequate for Section 202(a) Purposes

In their comments Global and the Alliance raised several issues with respect to the particulate matter (PM) requirements of LEV III (Docket ID No. EPA-HQ-OAR-2012-0562-0349 pp. 21-23). Specifically, Global and the Alliance challenged the measurement capability of current test procedures to accurately measure PM emissions at 1 mg/mi and the technical feasibility of achieving such low PM emissions. Before addressing their comments concerning measurement capability and technical feasibility at low levels of PM emissions, we would first like to address the implication in the introduction to their comments that, since PM emissions from light-duty vehicles (LDVs) are so small a fraction of the PM inventory in California, further reductions are unwarranted. As noted on page 5 of the LEV III Technical Support Document,

²⁷ Green Car Congress post (January 12, 2012) attached here as item 59

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
November 14, 2012
Page 13

“Development of Matter Mass Standards for Future Light-Duty Vehicles²⁸,” CARB acknowledges that, while PM emissions from LDVs are not a major contributor to the inventory, they are a significant contributor to urban pollution and human exposure, particularly near heavily traveled roadways, many of which are located in major urban centers in areas classified as non-attainment for health based PM ambient air quality standards. In addition, as we described earlier at pp. 9-10 the exact amount of pollution reduced and the cost-effectiveness of particular California standards is simply not relevant to EPA’s determination.

Before turning to their comments on current measurement capability at low PM levels, it is important to note that implementation of the 1 mg/mi PM standard begins in model year 2025, providing thirteen years of lead time to improve the test procedure and for industry to incorporate needed improvements to their engines and fuel systems. Furthermore, CARB has consistently demonstrated PM measurement capability at 1 mg/mi level at our vehicle test laboratory using our current understanding of new test procedures in 40 CFR Part 1066 currently under development by EPA and has identified areas of improvement to Part 1066 it intends to evaluate in cooperation with industry and USEPA (see pp. 54-59 of the above referenced Technical Support Document). Per *NRDC*, CARB has thus identified barriers to implementation of needed technologies and a viable path to overcome those barriers.

The situation is analogous to CARB’s adoption of the LEV II SULEV emission standard in 1999. At that time, industry submitted similar comments on the inadequacy of existing test procedures to measure at the requisite low emission levels²⁹. As is the case here, CARB had demonstrated adequate measurement capability to support the standard and committed to work with industry on further improving test procedures and instrumentation. As a result, three years later, in model year 2002, industry certified the first two SULEV vehicle models, the Honda Accord EX and Nissan Sentra CA.

²⁸ Development of Particulate Matter Mass Standards for Future Light-Duty Vehicles can be found at <http://www.arb.ca.gov/regact/2012/leviiighg2012/levappp.pdf>.

²⁹ Final Statement of Reasons, pp. 55-56: “LEV II” AND “CAP 2000” AMENDMENTS TO THE CALIFORNIA EXHAUST AND EVAPORATIVE EMISSION STANDARDS AND TEST PROCEDURES FOR PASSENGER CARS, LIGHT-DUTY TRUCKS AND MEDIUM-DUTY VEHICLES, AND TO THE EVAPORATIVE EMISSION REQUIREMENTS FOR HEAVY-DUTY VEHICLES can be found at http://www.arb.ca.gov/regact/levii/to_oal/leviifso.pdf.

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
November 14, 2012
Page 14

To summarize, the LEV III PM standards are based on a particular concern for their impact on public health and air quality. In addition, industry has not made a definitive case that would warrant deferral of a waiver for these standards.

Conclusion

Having responded to the limited comments presented in opposition to California's request, ARB respectfully requests EPA to grant a Clean Air Act Section 209(b) waiver of preemption for all Advanced Clean Car standards, for all model years.

Sincerely,



Tom Cackette
Chief Deputy Executive Officer

cc: Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
Environmental Protection Agency
Mailcode: 6102T
1200 Pennsylvania Avenue NW
Washington, D.C. 20460

(via e-mail, with attachments)

David Dickinson
Office of Transportation and Air Quality
United States Environmental Protection Agency

In support of this supplement to our May, 2012 waiver request, the following additional documents pertaining to the ACC Package are enclosed on compact disc, with the Item numbering continuing from our October 19, 2012 supplement:

Air and Radiation Docket
Docket ID No. EPA-HQ-OAR-2012-0562
November 14, 2012
Page 15

In support of this supplement to our May, 2012 waiver request, the following additional documents pertaining to the ACC Package are enclosed on compact disc, with the Item numbering continuing from our October 19, 2012 supplement:

48. State and Federal Mobile Source Standards, National Academy of Sciences (2006), National Academy Press.
49. "Governor Cuomo Announces Deployment of 325 Electric Vehicle Charging Stations Across New York State"; press release, Governor of New York
50. "Governor O'Malley Fuels \$1 Million Investment for Additional Electric Vehicle Advancements in Maryland: Charging Stations Will Reduce State Demand on Oil, Save Taxpayers Money", press release, Maryland Energy Administration
51. "Ford Dealerships Prepare for the Focus Electric", May 3, 2012, Forbes.com
52. "Ford Launches Documentary Series, Education Push & Electric Car to Help Consumers Make Greener Shift", press release, Ford Motor Company
53. Honda Fit EV Frequently Asked Questions, accessed November 14, 2012
54. Mitsubishi iMiEV Frequently Asked Questions, accessed November 14, 2012
55. Nissan LEAF website, accessed November 14, 2012
56. "Electric Car Sales Increase 228 Percent", posted October 31, 2012, Natural Resources Defense Council Staff Blog
57. Summary of Honda CEO Speech on September 21, 2012, press release, Honda Motor Company
58. "Mercedes Will Release First Mass-Market Fuel Cell in 2014", posted June 24, 2011, Hybridcars.com
59. "Another Cut at US Electric Vehicle Range Requirements and Usage Patterns; Fully-Charged LEAF Could Handle 83-95% of All Driving Days", posted January 12, 2012, Greencarcongress.com
60. 2011-2012 Investment Plan For The Alternative And Renewable Fuel and Vehicle Technology Program
61. "President Obama Launches EV-Everywhere Challenge as Part of Energy Department's Clean Energy Grand Challenges" posted March 7, 2012, energy.gov
62. "The EV Project: Overview", accessed November 14, 2012, theevproject.com
63. National Governors Association "State and Local Plug-In Electric Vehicle Workshop: Getting Ready Together" July 10-11, 2012 Workshop Summary

State of California
AIR RESOURCES BOARD

**New Passenger Motor Vehicle Greenhouse Gas Emission Standards for Model
Years 2017-2025 to Permit Compliance Based on Federal Greenhouse Gas
Emissions Standards and Additional Minor Revisions to the LEV III and ZEV
Regulations**

Resolution 12-35

November 15, 2012

Agenda Item No.: 12-8-3

WHEREAS, sections 39600 and 39601 of California's Health and Safety Code authorize the Air Resources Board (ARB or Board) to adopt standards, rules and regulations and to do such acts as may be necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, in section 43000 of the Health and Safety Code, the Legislature has declared that the emission of air pollutants from motor vehicles is the primary cause of air pollution in many parts of the State, and sections 39002 and 39003 of the Health and Safety Code charge the Board with the responsibility of air pollution control from motor vehicles;

WHEREAS, sections 43013, 43101, and 43104 of the Health and Safety Code authorizes the Board to adopt emission standards and test procedures to control air pollution caused by motor vehicles;

WHEREAS, section 43018(a) of the Health and Safety Code directs the Board to endeavor to achieve the maximum degree of emission reduction possible from vehicular and other mobile sources in order to accomplish the attainment of State ambient air quality standards at the earliest practicable date;

WHEREAS, section 43018(c) of the Health and Safety Code provides that in carrying out section 43018, the Board shall adopt standards and regulations that will result in the most cost-effective combination of control measures on all classes of motor vehicles and motor vehicle fuel, including but not limited to reductions in motor vehicle exhaust and evaporative emissions, and reductions in in-use vehicular emissions through durability, performance improvements, and specification of vehicular fuel composition;

WHEREAS, section 39667 of the Health and Safety Code directs the Board to consider revisions to ARB's emissions standards for vehicular sources to achieve the maximum possible reduction in public exposure to substances that the Board has identified as toxic air contaminants pursuant to section 39662 of the Health and Safety Code; such regulations affecting new motor vehicles are to be based on the most advanced technology feasible for the model-year and may include, but are not limited to, the required installation of vehicular control measures on new motor vehicles;

WHEREAS, the Board's California State Implementation Plan (SIP) for ozone establishes the State strategy for attaining the ambient air quality standard for ozone in all areas of

WHEREAS, California's July 2011 commitments were as follows: (1) California committed that if U.S. EPA proposed federal greenhouse gas standards and NHTSA proposed Corporate Average Fuel Economy standards for model years 2017 and beyond substantially as described in the July 2011 Notice of Intent (published in the Federal Register on August 9, 2011), and the agencies adopted standards substantially as proposed, California would not contest such standards; (2) California committed to propose to revise its standards on greenhouse gas emissions from new motor vehicles for the 2017 through 2025 model years, such that compliance with the greenhouse gas emissions standards adopted by U.S. EPA for those model years that are substantially as described in the July 2011 Notice of Intent, even if amended after 2012, shall be deemed in compliance with the California greenhouse gas emissions standards, in a manner that is applicable to states that adopt and enforce California's greenhouse gas standards under Clean Air Act (CAA) Section 177; and (3) California committed to propose that its revised Zero-Emission Vehicle (ZEV) program for the 2018 through 2021 model years include a provision providing that over-compliance with the federal greenhouse gas standards in the prior model year may be used to reduce in part a manufacturer's ZEV obligation in the next model year;

WHEREAS, California's commitment to work with the federal government in no way relinquished California's right to develop and adopt new greenhouse gas emission standards for 2017 and subsequent model passenger vehicles that are specific to California;

WHEREAS, on December 1, 2011 U.S. EPA and the federal Department of Transportation jointly issued a Notice of Proposed Rulemaking for 2017 through 2025 model year passenger vehicles that proposes a coordinated federal greenhouse gas and fuel economy program for light-duty vehicles, referred to as the "2017 through 2025 MY National Program" (76 Fed. Reg. 74854 (December 1, 2011));

WHEREAS, in a January 2012 rulemaking, the Board approved its second generation greenhouse gas regulations as part of the Low-Emission Vehicle III (LEV III) element of the Advanced Clean Cars program, which reduce car CO₂ emissions by about 36% and truck CO₂ emissions by about 32% from model year 2016 through 2025;

WHEREAS, a second element of the Advanced Clean Cars program, the ZEV regulations, includes regulatory changes that implement California's third (3) commitment above;

WHEREAS, the LEV III greenhouse gas regulations are contained primarily in title 13, California Code of Regulations, section 1961.3, which incorporates by reference the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," incorporated by reference in section 1961.2;

WHEREAS, at the January 2012 hearing, the Board directed the Executive Officer to either propose modifications to the approved regulatory amendments, or to return to the Board with a new regulatory proposal, to accept compliance with the 2017 through 2025

Climate change and California drought in the 21st century

Michael E. Mann^{a,1} and Peter H. Gleick^b

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Climate science has advanced over decades from an initial focus on the development and use of numerical models of Earth's climate and compilation of rich networks of observational data, to now being in a position to "detect" and "attribute" specific impacts and events to anthropogenic climate change. Recent analyses have thus established the "fingerprint" of anthropogenic climate change in an increasingly diverse array of meteorological and hydrological phenomena around the world, from heat waves to coastal damages during extreme tides and storms, flooding from more intense precipitation events, and severe drought (1). In a new study published in PNAS, Diffenbaugh et al. now add weight to the accumulating evidence that anthropogenic climatic changes are already influencing the frequency, magnitude, and duration of drought in California (2). The authors show that the increasing co-occurrence of dry years with warm years raises the risk of drought despite limited evidence

of a trend in precipitation itself, highlighting the critical role of elevated temperatures in altering water availability and increasing overall drought intensity and impact.

Golden State Goes Brown

California's nickname is the Golden State, a name that owes as much to the golden hue of its landscapes during the dry summer season as to the 19th century Gold Rush or the fields of golden poppies. The grasses green up again in late fall when the mid-latitude storms and rainfall return. What happens if those rains come late, come little, or in some cases don't come at all? Such has been the case in recent years.

California is experiencing extreme drought. Measured both by precipitation and by runoff in the Sacramento and San Joaquin river basins, 10 of the past 14 y have been below normal, and the past 3 y have been the driest and hottest in the full instrumental record. A plot of temperature and precipitation anomalies over the full instrumental record from

1895 through November 2014 shows that the 3-y period ending in 2014 was by far the hottest and driest on record (Fig. 1). As of the publication of this commentary, the state appears headed into a fourth consecutive year of water shortfall, leading to massive groundwater overdraft, cutbacks to farmers, reductions in hydroelectricity generation, and a range of voluntary and mandatory urban water restrictions.

As drought has taken hold, the Golden State is slowly becoming a more arid, brown state, where constraints on water availability threaten a large and growing population (up nearly 80% since the severe drought of 1976–77), unique ecological resources, a major source of agricultural produce, and one of the largest economies in the world. What a sadly ironic destiny that would be for the state currently led by one Governor Brown: The growing threat of climate change to California is one of the drivers for extensive efforts under the Brown (and prior Schwarzenegger) administration to understand the risks to the state and develop strategies to reduce greenhouse gas emissions and implement adaptation strategies (3). Of course, we're not just talking about whether or not the grass is green. There are growing concerns about whether California can continue to meet its tremendous demand for water for industrial use, growing food, sustaining ecosystems, and expanding cities in the face of drought (4).

As part of the effort to understand the influence of climate change on extreme regional events, there has been a robust scientific debate over the role of climate change on California's current drought. Some studies (5–7) have argued that we cannot yet discern a link between storm tracks (and the Pacific Ocean surface temperature patterns that influence their behavior) and drought in the western United States. Others (8) do, however, see a relationship in the form of observational data, physical analysis of possible

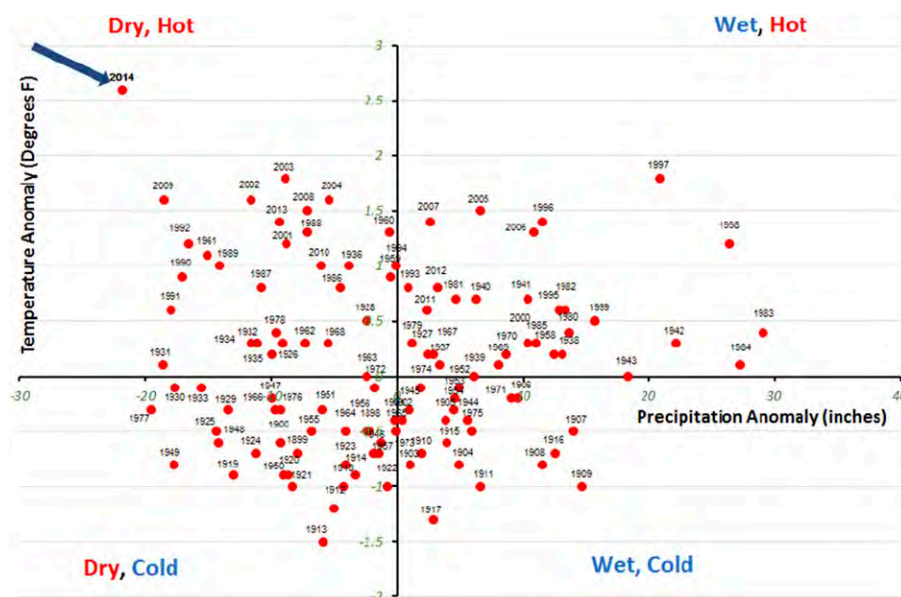


Fig. 1. California temperature (°F) and precipitation (inches) anomalies from January 1895 to November 2014, plotted as 3-y anomalies relative to 1901–2000 mean. Data from the National Climatic Data Center nClimDiv dataset.

Author contributions: M.E.M. and P.H.G. wrote the paper.

The authors declare no conflict of interest.

See companion article on page 3931.

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mechanisms, and model results that human-caused climate change is strengthening atmospheric circulation patterns in a way that “implies that the periodic and inevitable droughts California will experience will exhibit more severity.” Seeming to weigh in favor of a climate change connection is the fact that by several measures the current drought appears to be unprecedented in at least 1,200 y (9).

Don't Blame It on the Rain

Part of the challenge is that the term “drought” can be defined in different ways: for example, meteorological, hydrological, agricultural, and socioeconomic drought (10). Drought, most simply defined, is the mismatch between the amounts of water nature provides and the amounts of water that humans and the environment demand. The National Drought Mitigation Center notes (11):

In the most general sense, drought originates from a deficiency of precipitation over an extended period of time—usually a season or more—resulting in a water shortage for some activity, group, or environmental sector. Its impacts result from the interplay between the natural event (less precipitation than expected) and the demand people place on water supply, and human activities can exacerbate the impacts of drought. Because drought cannot be viewed solely as a physical phenomenon, it is usually defined both conceptually and operationally.

Commonly used indicators (such as the Palmer Drought Severity Index and the Standard Precipitation Index) evaluate the balance between incoming (through precipitation + snow/ice melt runoff) and outgoing (through evaporation, transpiration, and groundwater recharge) moisture (12, 13). Previous studies dismissing any link between anthropogenic climate change and the current California drought (5–7) have focused exclusively on only one part of this balance, the “incoming” part. These studies argue that climate change cannot be tied to the low levels of precipitation that have accompanied the drought. Another study (8) argues instead that the unusually strong atmospheric ridge in the west that has been associated with the drought (what has been termed the “ridiculously resilient ridge”) was made more likely by global warming.

How can one reconcile these divergent findings? Diffenbaugh et al. (2) seem to solve that mystery in their latest assessment. As noted earlier in Fig. 1, recent years haven't just been hot and they haven't just been dry: they've been very hot and very dry at the same time. Climate change appears to be

Diffenbaugh et al. now add weight to the accumulating evidence that anthropogenic climatic changes are already influencing the frequency, magnitude, and duration of drought in California.

increasing the likelihood of a large-scale atmospheric pattern that yields warm, dry weather in California. That's a double whammy when it comes to the hydrological balance that governs drought: less precipitation and more evaporation and transpiration, at the same time. Combined with the role that temperature plays in increasing the loss of water from agriculture, soils, surface water bodies, and snowpack, the authors note that 100% of the moderately dry years between 1995 and 2014 co-occurred with a positive temperature anomaly. Diffenbaugh et al. (2) note:

efforts to understand drought without examining the role of temperature miss a critical

contributor to drought risk. Indeed, our results show that even in the absence of trends in mean precipitation—or trends in the occurrence of extremely low-precipitation events—the risk of severe drought in California has already increased due to extremely warm conditions induced by anthropogenic global warming.

In addition, Diffenbaugh et al. (2) highlight model results that suggest the emergence of a climatic regime in which all future dry years coincide with warmer conditions. As they note, the region is moving toward “a transition to a permanent condition of ~100% risk that any negative—or extremely negative—12-mo precipitation anomaly is also extremely warm” (2).

The conclusions of Diffenbaugh et al. (2) do not stand in isolation. Indeed, they reinforce the results of another new study analyzing future climate model projections (14). That study similarly concludes that there is growing risk of unprecedented drought in the western United States driven primarily by rising temperatures, regardless of whether or not there is a clear trend in precipitation.

That might sound like bad news, and certainly the trends are moving rapidly in the wrong direction. The good news, however, is that this is only one possible future. If society works to limit global warming to under 2 °C, which is still possible (1), then we can likely avoid committing to a brown California. California still has a chance to remain the Golden State.

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- 2 Diffenbaugh NS, Swain DL, Touma D (2015) Anthropogenic warming has increased drought risk in California. *Proc Natl Acad Sci USA* 112:3931–3936.
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California's Advanced Clean Cars Midterm Review

*Summary Report for the Technical Analysis
of the Light Duty Vehicle Standards*

California Environmental Protection Agency

 **Air Resources Board**

California's ZEV regulation

Strengthen the ZEV program for 2026 and subsequent model years to continue on the path towards meeting California's 2030 and later climate change and air quality targets. Set new requirements to target credit provisions and regulatory structure adjustments in order to increase certainty on future vehicle volumes, technology improvement, and PHEV qualifications and other factors to maximize GHG and criteria pollutant reductions.

For the first time since the initial adoption of the regulation, the Board adopted increased ZEV credit requirements in 2012. This action, in concert with the development of strong comprehensive complementary policies to support infrastructure deployment and consumer awareness, led to the advancement of ZEV technology and growth in ZEV sales. Since the adoption of the 2018 through 2025 model year standards, manufacturers have been exceeding the annual requirements of the ZEV regulation and expanding the market nationwide by delivering ZEVs and PHEVs in states which have not adopted California's ZEV regulation. Thus, committing now to a strong set of post-2025 requirements reinforces current progress and encourages manufacturers to continue advancements to electrify their fleets.

Modeling to meet the 2030 GHG targets established by SB 32 in the ARB Mobile Source Strategy report, released in May 2016, indicates approximately three million additional ZEVs and PHEVs will be needed in 2026 through 2030. To reach these volumes with any certainty, the new regulation will need modifications that provide a more direct connection to vehicle volumes and require vehicle characteristics that best ensure market success. For such significant revisions to the regulation to be successful, however, it would require greater market acceptance, more technology advancements, and lower technology costs than is known with certainty today. In PHEVs alone, the product offerings and architecture variations are increasing in diversity and it is too early to determine which combinations will be appealing to consumers while providing maximum GHG and criteria pollutant benefits. For BEVs, a step change is occurring with multiple offerings expected with 200+ miles of range at prices closer to mainstream conventional vehicles (even before state and federal incentives), with the first of these being launched within weeks of this report's release. Additionally, substantial changes to the regulatory structure will impact vehicle manufacturer product and compliance planning and necessitate sufficient lead time and stability to implement successfully while minimizing disruption to research, investment, and design cycles. Development of future new ZEV requirements needs to be done in concert with additional GHG (and potentially criteria pollutant) fleet-wide emission reduction requirements as was previously done in the 2012 ACC program. This coordinated approach ensures the regulations of multiple pollutants benefit from the synergistic effects and result in a single integrated policy to help meet California's air quality and GHG goals. To this end, ARB intends to continue to collaborate on a technical basis with its federal partners such as the U.S. Department of Energy (DOE), U.S. EPA, and NHTSA to research, develop, and promote advancement of vehicle technologies including ZEV technologies necessary for California's long term goals.

Maintain the current ZEV stringency for California through 2025 model year including the existing regulatory and credit structure. In 2012, the Board strengthened the ZEV regulation, nearly tripling the credit requirements for pure ZEVs in 2025 model year, and shifting

Accordingly, staff recommends pursuing a new regulatory update to ensure that, when the 1 mg/mi standard is phased-in, it results in robust PM control over the broad spectrum of driving conditions encountered in-use. Thus, staff recommends that the Board direct staff to: (a) pursue an increase in stringency of the US06 PM standard to ensure a similar level of PM emission control in conjunction with the 1 mg/mi FTP standard; and (b) to investigate adoption of additional standards and procedures applicable to other test cycles and ambient conditions that will ensure more comprehensive control of PM emissions under all operating conditions. These actions will also ensure that any future PM standards achieve meaningful and sustained in-use reductions.

ZEV Review

Are ZEVs and PHEVs still necessary for meeting California's long term air quality and GHG goals?

The LDV sector accounts for nearly 30 percent of the state's GHG emissions, making further reductions necessary in order to meet significant 2020, 2030, and 2050 GHG emission reduction targets in the future. In 2009, staff's modeling found "... [pure] ZEVs will need to reach 100 percent of new vehicle sales between 2040 and 2050, with commercial markets for ZEVs launching in the 2015 to 2020 timeframe."³¹ More recently, the ARB Mobile Sources Strategy report, released in May 2016, confirmed the essential role electrification will need to play in the LDV sector to meet California's long term emission reduction goals. The updated VISION scenarios in the Mobile Source Strategy show that PHEVs can remain a permanent fraction of the market, providing more flexibility for manufacturers. However, as shown in Figure 4 the combined sales of pure ZEVs and PHEVs for light-duty vehicles will still need to achieve 100 percent by 2050. A recent American Lung Association analysis confirms the importance of a long-term, full electric transformation to reduce health based and social costs.³² The study estimates health based impacts in 2015 from passenger vehicles in California and the Section 177 ZEV states to be \$24 billion, but that the cost could decline to \$3 billion by 2050 under a scenario where sales of ZEVs and PHEVs reach 100 percent by 2050.

³¹ ARB 2009, California Air Resources Board. November 25, 2009. "2009 White Paper: Summary of Staff's Preliminary Assessment of the Need for Revisions to the Zero-Emission Vehicle Regulation" November 25, 2009. <https://www.arb.ca.gov/msprog/zevprog/2009zevreview/zevwhitepaper.pdf>

³² ALA 2016, American Lung Association. "Clean Air: Health and Climate Benefits of Zero Emission Vehicles" October 2016. <http://www.lung.org/local-content/california/documents/2016zeroemissions.pdf>



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STATE CLIMATE SUMMARIES

CALIFORNIA

Key Messages 

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KEY MESSAGE 2



California snowpack plays a critical role in water supply and flood control. Projected earlier melting of the snowpack due to rising temperatures could have substantial negative impacts on water-dependent sectors and ecosystems.



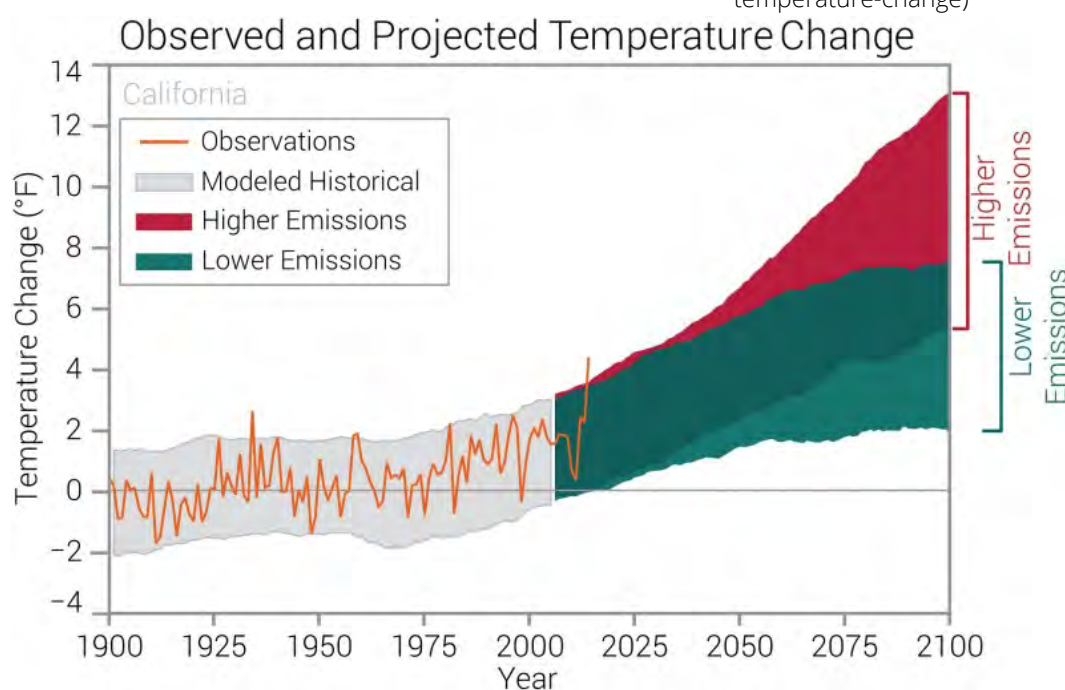
CALIFORNIA



California, the most populous and third largest state, has a diverse climate. The deserts in the south are some of the hottest and driest areas of the United States, while higher elevations can experience low temperatures and heavy snowfall. **The North Pacific High, a semi-permanent high pressure system off the Pacific Coast, and the mid-latitude jet stream play dominating roles in California's seasonal precipitation patterns.** During summer, the North Pacific High and the jet stream move northward, keeping storms north of the state and resulting in dry summers. In winter, this system moves southward, allowing storms to bring precipitation to the state. Due to the moderating effect of the Pacific Ocean, coastal locations experience moderate year-round temperatures while inland locations experience a wider range. Average annual temperatures are less than 40°F at the highest mountain elevations. Average temperatures elsewhere range from less than 50°F in the northeast to greater than 70°F in the southeast. Because of its large north-south extent, and the several mountain ranges, extreme climate events often affect only a portion of the state. For example, strong El Niño events often cause excessive precipitation in southern California, but the effects on northern California are not consistent.

FIGURE 1

(/report/noaa-led-state-summaries-2017/chapter/california/figure/ca-observed-and-projected-temperature-change)



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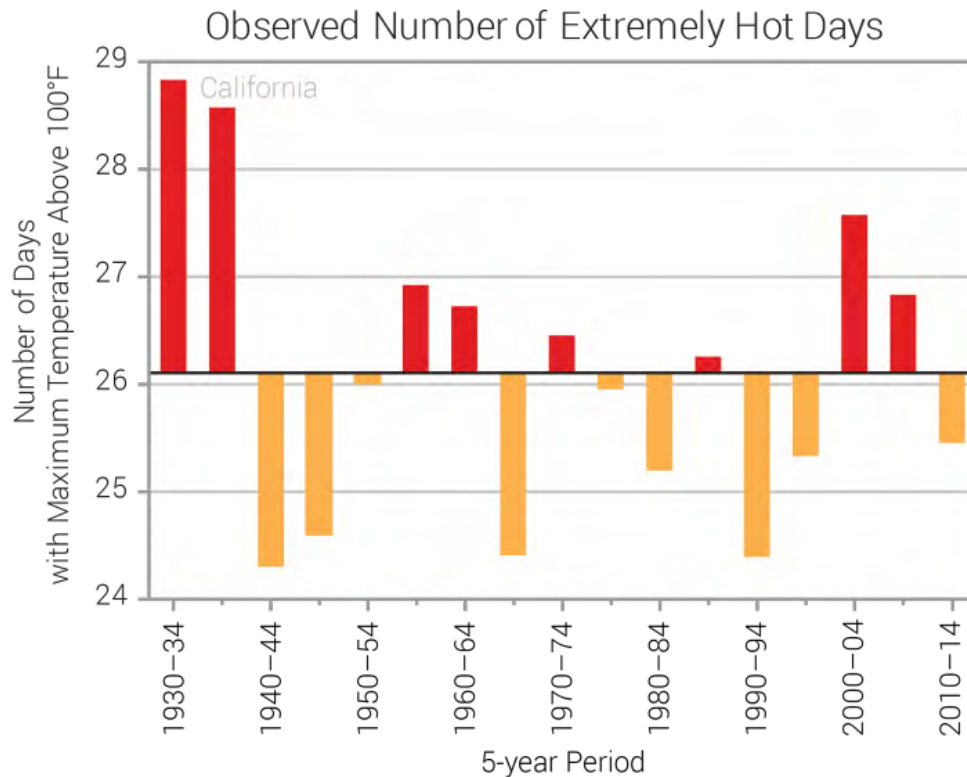
Since the beginning of the 20th century, temperatures have risen approximately 2°F (Figure 1). The years 2014 and 2015 were the first and second warmest, respectively, in the 121-year record. The early 21st century (2000–2009) had the second highest frequency of extremely hot days (maximum temperature above 100°F) in the historical record (Figure 2a), after the 1930s. During the most recent 10 years, the state has also experienced the highest number of very warm nights (minimum temperature above 75°F) on record, and since 1995 a below average number of cold nights (minimum temperature below 20°F) (Figures 3 and 4).



Figure 2

FIGURE 2A

(/report/noaa-led-state-summaries-2017/chapter/california/figure/ca-observed-number-of-extremely-hot-days)



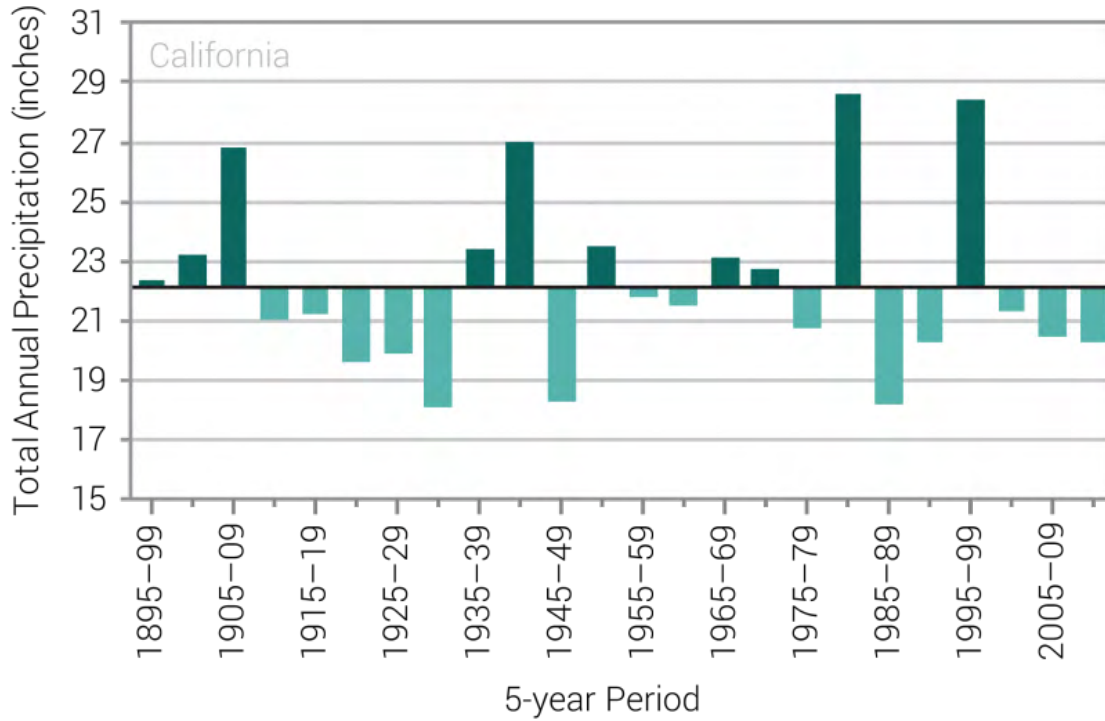
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FIGURE 2B

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Observed Annual Precipitation



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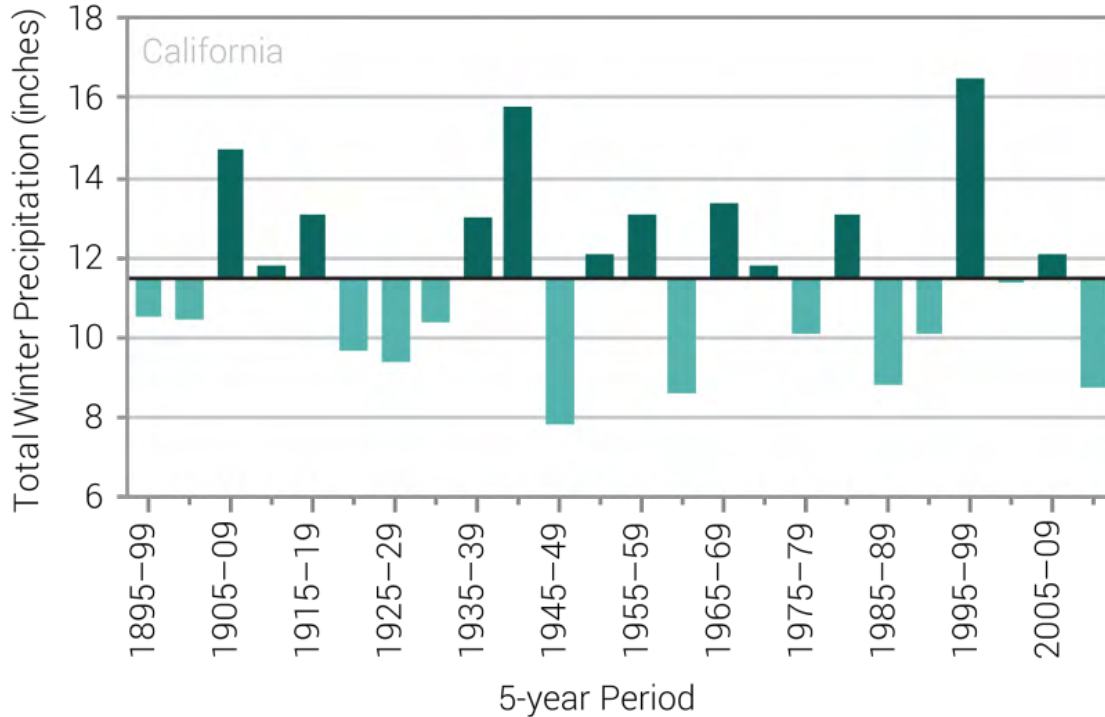
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FIGURE 2C

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Observed Winter Precipitation



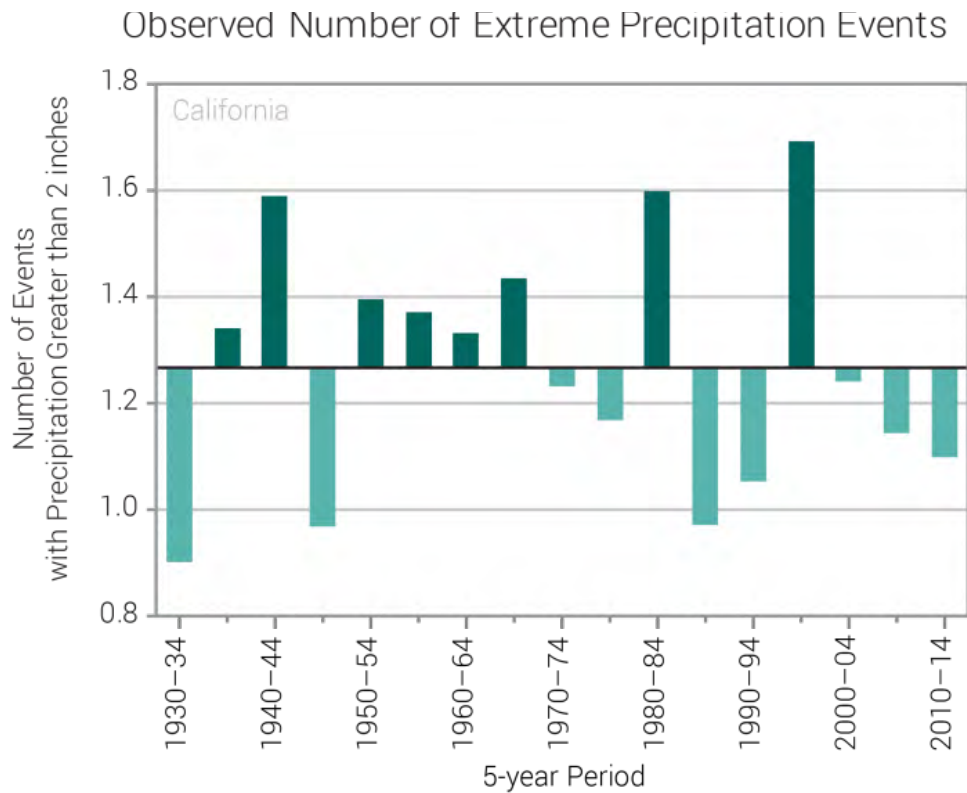
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FIGURE 2D

(/report/noaa-led-state-summaries-2017/chapter/california/figure/ca-observed-winter-precipitation)



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Figure 2: The observed number of (a) extremely hot days (maximum temperature above 100°F), (b) annual precipitation, (c) winter precipitation, and (d) extreme precipitation (daily precipitation greater than 2 inches), averaged over 5-year periods. The values in Figures 2a and 2d are from long-term reporting stations (101 for temperature and 126 for precipitation). The values in Figures 2b and 2c are from NCEI’s version 2 climate division dataset. The dark horizontal lines represent the long-term averages. The greatest number of extremely hot days occurred in the 1930s. There is no long-term trend in annual and winter precipitation and extreme precipitation days. Source: CICS-NC and NOAA NCEI.

(/report/noaa-led-state-summaries-2017/chapter/california/figure/ca-observed-number-of-very-warm-nights)

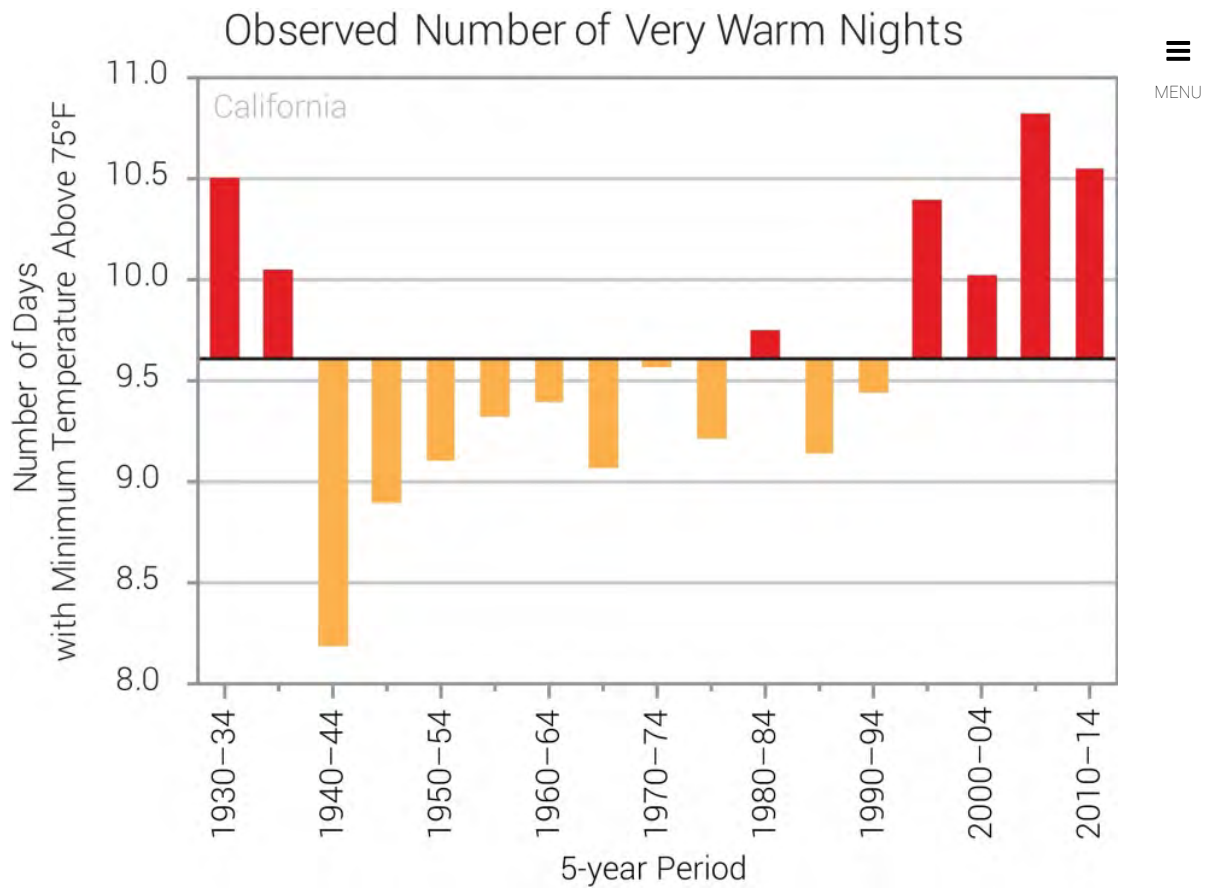


Figure 3: The observed number of very warm nights (minimum temperature above 75°F) for 1930–2014, averaged over 5-year periods; these values are averages from 101 long-term reporting stations. The dark horizontal line represents the long-term average. Over the past decade (2005–2014), California has experienced its highest number of very warm nights over the historical record. Source: CICS-NC and NOAA NCEI.

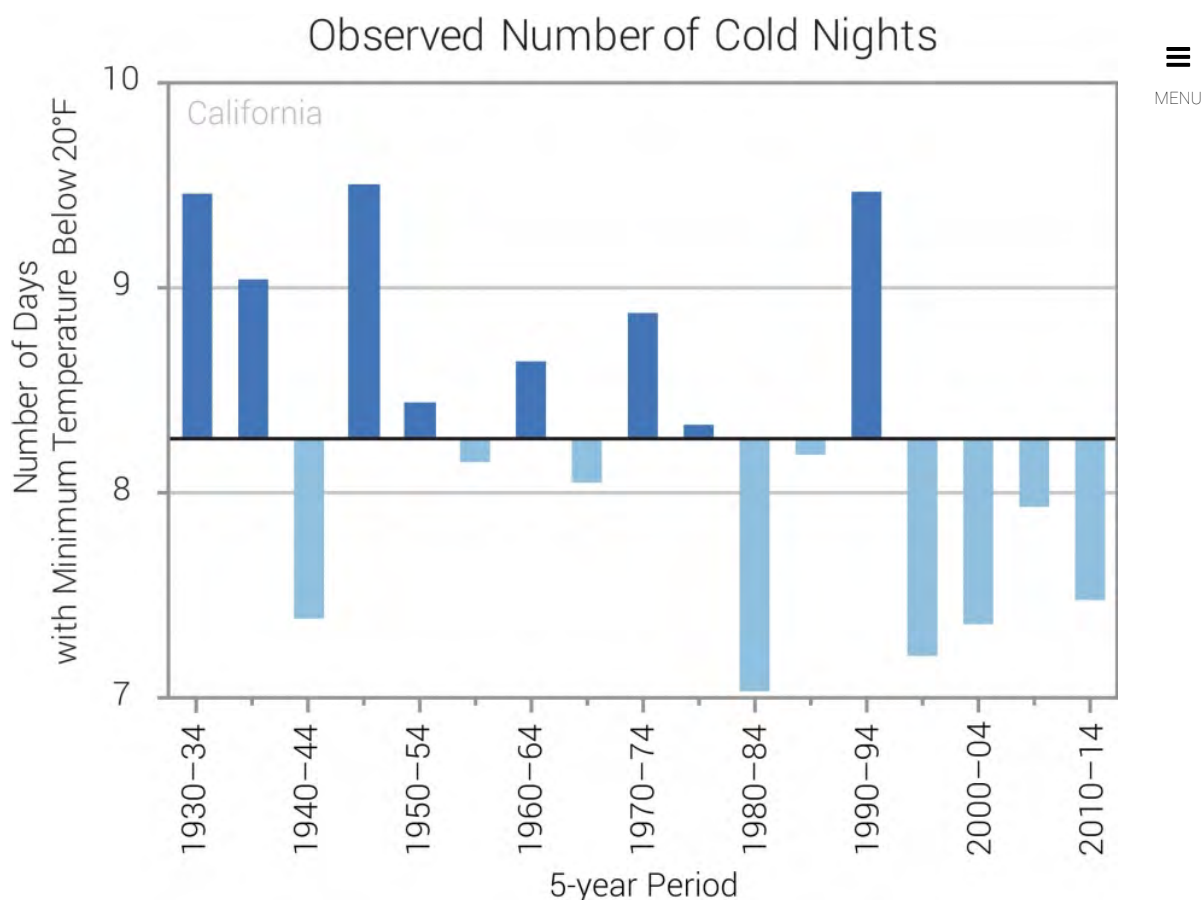


Figure 4: The observed number of cold nights (minimum temperature below 20°F) for 1930–2014, averaged over 5-year periods; these values are averages from 101 long-term reporting stations. The dark horizontal line represents the long-term average. Since 1995, California has experienced a below normal number of cold nights, indicative of warming in the region. Source: CICS-NC and NOAA NCEI.

Average annual precipitation varies from less than 2 inches in Death Valley to more than 100 inches near Crescent City in the northwest. Precipitation is also highly variable from year to year, with statewide annual precipitation ranging from 7.93 inches in 2013 to 42.46 inches in 1983, a strong El Niño year. The driest multi-year periods were in the 1920s, 1930s, late 1940s, and late 1980s, and the wettest in the 1900s, early 1940s, early 1980s, and late 1990s (Figure 2b). The driest 5-year period was 1928-1932 and the wettest was 1979-1983. Winter precipitation accounts for about half of total precipitation and has been highly variable (Figure 2c)

One of the most serious climate hazards is flooding. Extreme precipitation episodes resulting in damaging flooding periodically occur. In particular, atmospheric rivers, a weather phenomenon in which a narrow band of very moist air is transported from tropical latitudes of the Pacific Ocean to the west coast, are capable of causing torrential rainfall. From December 1996 to January 1997, heavy rains and snow fell in northern California. The period of December 26–January 3 was particularly severe with some weather stations reporting as much as 25 inches of precipitation. In addition to large rainfall, unusually warm temperatures caused tremendous snowmelt, Lake Tahoe reaching its highest level since 1917. The state experienced massive flooding; some of the most notable locations included the Yosemite Valley (first time since 1861-62), and along the Russian,

Klamath, and San Joaquin Rivers. This event was one of a number of extreme precipitation events occurring in the late 1990s, with that period having the highest number in the historical record (Figure 2d).



Drought is another serious climate hazard. Since snowpack is an important element in the management of California's complex water system, some of the most impactful droughts occur during years of abnormally low snowpack accumulation during the winter months. The historical record indicates periodic occurrences of extended wet and dry periods (Figure 7). Drought conditions can be exacerbated by warm temperatures. The record warmth in 2014 and 2015, in combination with multiple years of below average precipitation (Figure 2b), led to one of the most severe droughts on record for the state.

California is the single most productive agricultural state. The agricultural industry relies heavily on reservoir water supplied by snowmelt and rainfall runoff. Yearly variations in snowpack depths have implications for water availability as snowmelt from the winter snowpack feeds a network of reservoirs. Spring snowpack at Donner Summit reached record low levels in 2014, exceeded in 2015 by a remarkable April 1 snow-water-equivalent value of only 5% of average (Figure 5). Decreased precipitation since 2011 has contributed to near-record low levels in the Shasta Reservoir (Figure 6).

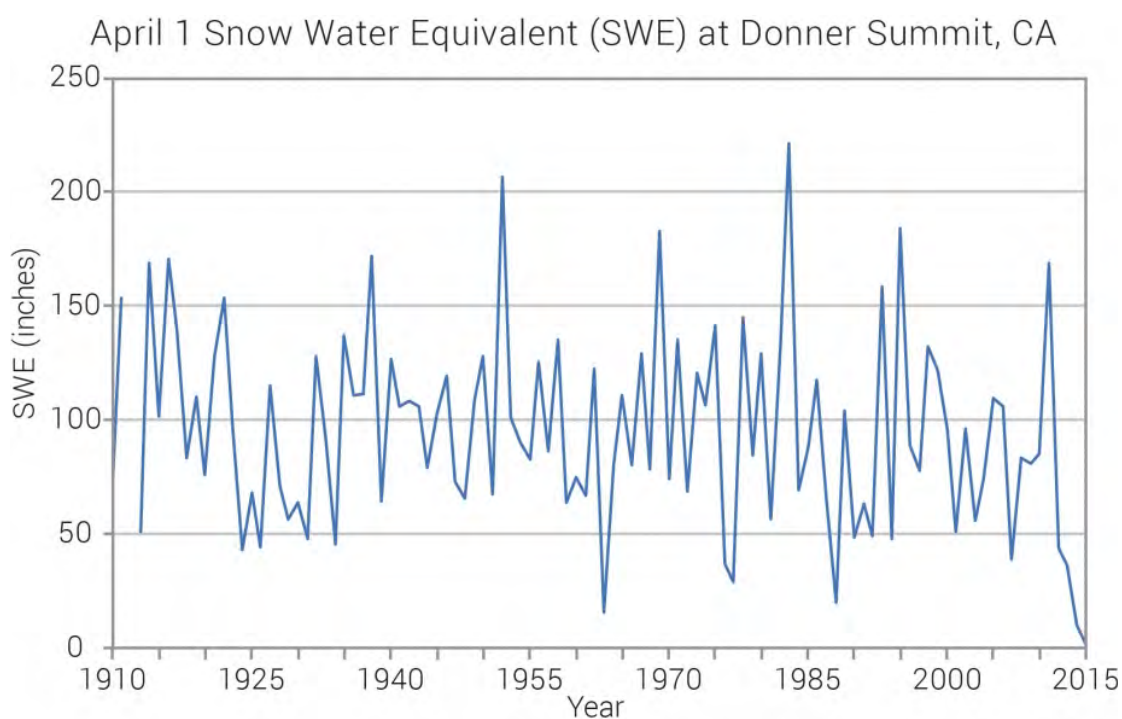


Figure 5: Variations in the April 1 snow water equivalent at Donner Summit, California snow course site. Snow water equivalent (SWE) is the amount of water contained within the snowpack. SWE varies widely from year to year. Snowpack levels have been decreasing since 2011 due to unusually low precipitation and warm temperatures during the first three months of the year, reaching record low levels in 2014 and 2015. The 2015 value was only 5% of the long-term average, a dramatic indication of the severity of the drought. Source: USDA Natural Resources Conservation Service.



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Storage Levels in the Shasta Dam Reservoir

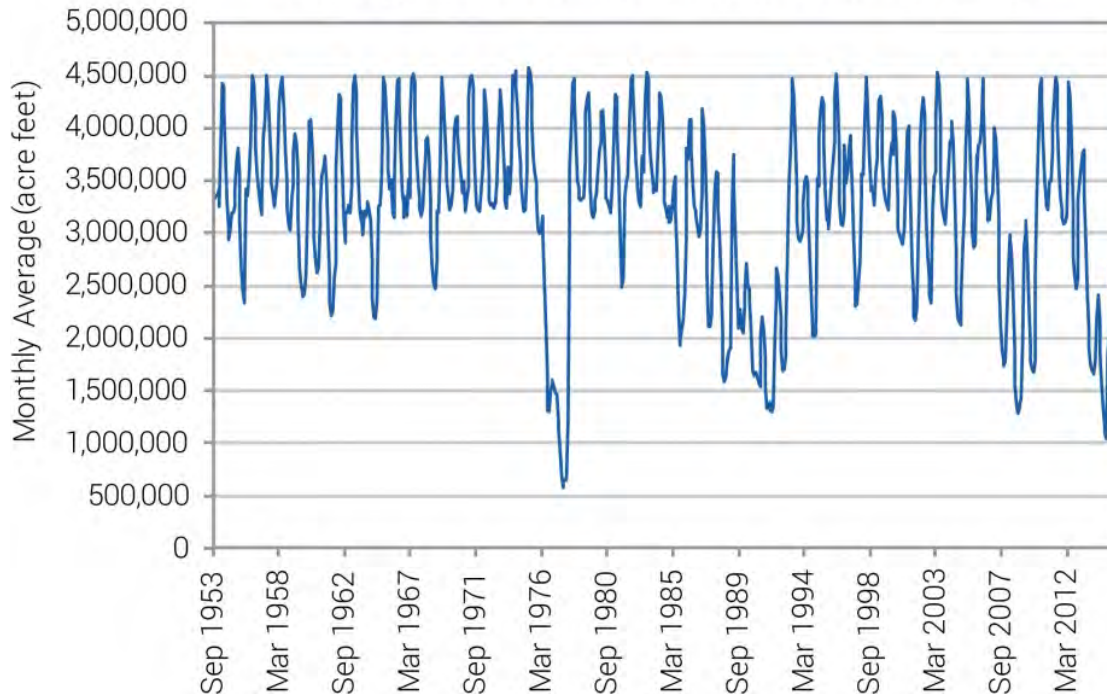


Figure 6: Long-term monthly time series of the average water levels in the Shasta Dam Reservoir. The Shasta Dam Reservoir generally experiences similar seasonal cycles in water levels from year to year. However, water levels have dropped significantly several times over the past 60 years. In 2014, the reservoir reached its second lowest levels, surpassed only by extremely low levels during the 1977 drought. Source: California Data Exchange Center.

(/report/noaa-led-state-summaries-2017/chapter/california/figure/california-palmer-drought-severity-index)

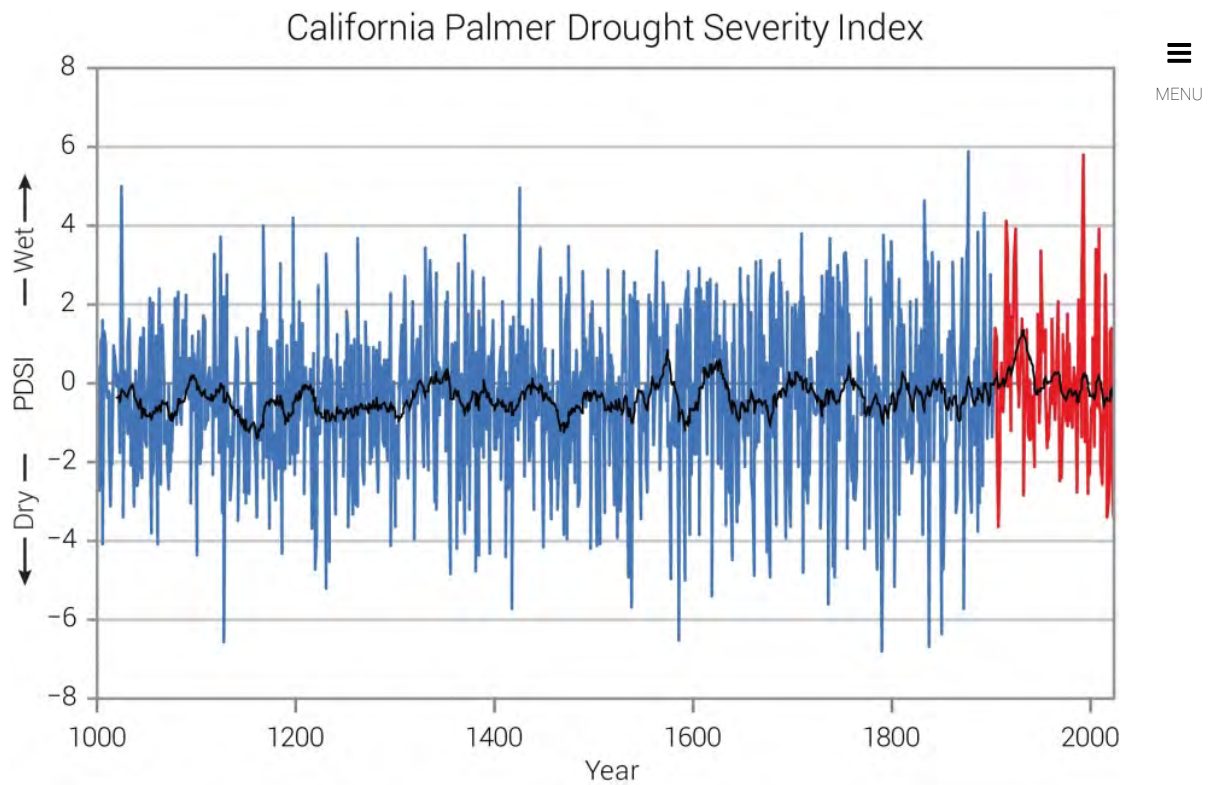


Figure 7: Time series of the Palmer Drought Severity Index from 1000 to 2014. Values for 1895–2014 (red) are based on measured temperature and precipitation. Values prior to 1895 (blue) are estimated from indirect measures such as tree rings. The thick black line is a running 20-year average. The extended record indicates periodic occurrences of extended wet and dry periods. In the modern era, the wet period of the early 1900s and the recent dry period of the 2000s are clearly evident. Source: CICS-NC and NOAA NCEI.

Because summer is the dry season, wildfires are a common occurrence, particularly toward the end of summer. Down slope winds, such as the Santa Ana winds of southern California which can gust to 80 mph, are often associated with the most destructive wildfires. Since they usually occur after the summer dry season when there is ample dry vegetation for fuel, they can cause small fires to quickly burn out of control. These Santa Ana winds have been associated with some of the state's largest fires, including in October 2003 and October 2007, when more than 800,000 and 1,000,000 acres burned, respectively. In the San Francisco Bay area, the comparable Diablo winds can also be devastating, as evidenced by the Oakland Firestorm of 1991 which killed 25 people and caused over \$1.5 billion in damages (in 1992 dollars). The denuding of vegetation by wildfires increases the risks of mudslides and flooding on those areas when heavy rain occurs.

Under a higher emissions pathway, historically unprecedented warming is projected by the end of the 21st century (Figure 1). Even under a pathway of lower greenhouse gas emissions, average annual temperatures are projected to most likely exceed historical record levels by the middle of the 21st century. However, there is a large range of temperature increases under both pathways and under the lower pathway a few projections are only slightly warmer than historical records. Overall, warming will lead to increased heat wave intensity but decreased cold wave intensity. Future heat waves could particularly stress coastal communities, such as San Francisco, that are rarely exposed to extreme temperatures and therefore are not well adapted to such events.

Winter precipitation projections range from slight decreases in southern California to increases in northern California, but these changes are smaller than natural variations (Figure 8). **Rising temperatures, however, are projected to increase the average lowest elevation at which snow falls, reducing water storage in the snowpack, particularly at those lower mountain elevations which are now on the margins of reliable snowpack accumulation.** Higher spring temperatures will also result in earlier melting of the snowpack. The shift in snow melt to earlier in the season is critical for California's water supply because flood control rules require that water be allowed to flow downstream and that water cannot be stored in reservoirs for use in the dry season.



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Projected Change in Winter Precipitation

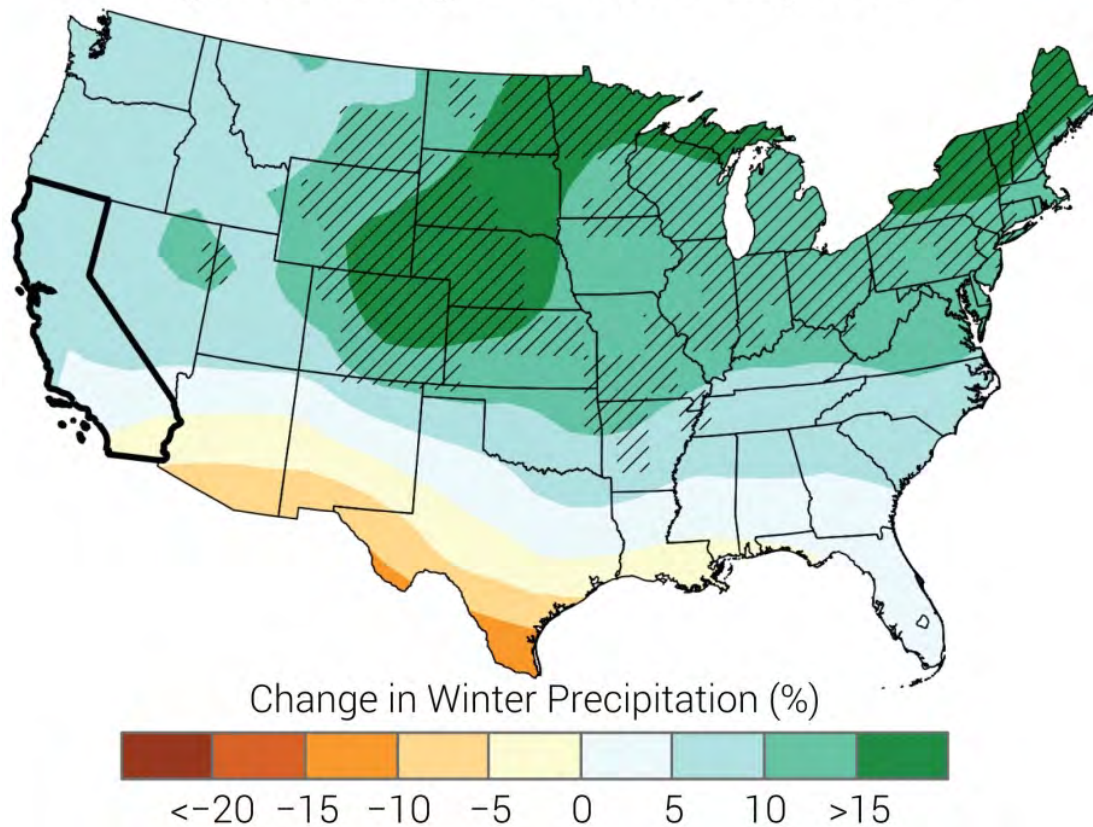


Figure 8: Projected change in winter precipitation (%) for the middle of the 21st century relative to the late 20th century under a higher emissions pathway. Hatching represents areas where the majority of climate models indicated a statistically significant change. Winter precipitation is projected to increase slightly in the central and northern parts of the state and decrease in the south, but these changes are small relative to the natural variability in this region. Source: CICS-NC, NOAA NCEI, and NEMAC.

Naturally occurring droughts are expected to become more intense. Even if precipitation increases in the future, temperature rises will increase the rate of soil moisture loss during dry spells, further reducing streamflow, soil moisture, and water supplies. **As a result, wildfires are projected to become more frequent and severe.**



Increasing temperatures raise concerns for sea level rise in coastal areas. **Since 1880, global sea level has risen by about 8 inches. It is projected to rise another 1 to 4 feet by 2100** as a result of both past and future emissions due to human activities (Figure 9). Sea level rise has caused an increase in tidal floods associated with nuisance-level impacts. Nuisance floods are events in which water levels exceed the local threshold (set by NOAA's National Weather Service) for minor impacts. These events can damage infrastructure, cause road closures, and overwhelm storm drains. As sea level has risen along the California coastline, the number of tidal flood days (all days exceeding the nuisance level threshold) has also increased, with La Jolla experiencing its greatest number in 2015 and in San Francisco in 1983 (Figure 10). **Continued sea level rise will present major challenges to California's water management system.** The Sacramento-San Joaquin Delta is the hub of California's water supply system. Water from reservoirs in Northern California flows through the Delta where it is then pumped into aqueducts to central and southern California. Sea level rise will cause salty ocean water to intrude into the Delta through San Francisco Bay. This would require increased releases of water from upstream reservoirs to keep the salty water out of the Delta. Water that is used to repel salt flows out into the ocean is no longer available for water supply, reducing the overall amount of water.

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Past and Projected Changes in Global Sea Level

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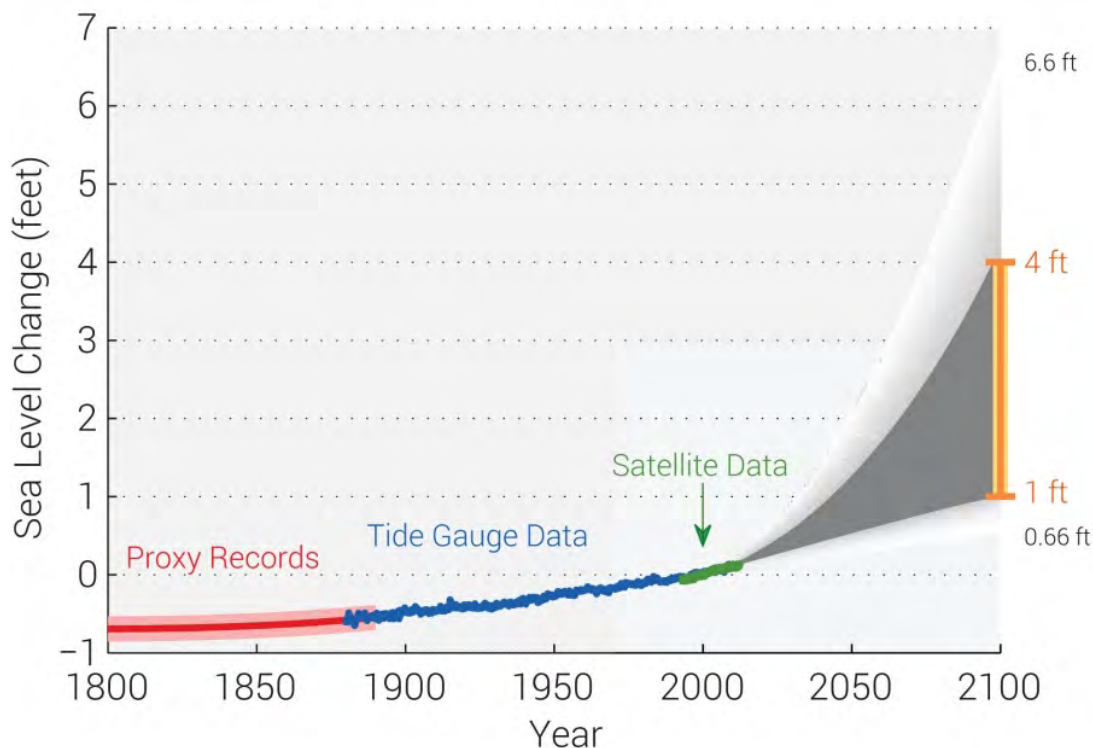


Figure 9: Estimated, observed, and possible future amounts of global sea level rise from 1800 to 2100, relative to the year 2000. The orange line at right shows the most likely range of 1 to 4 feet by 2100 based on an assessment of scientific studies, which falls within a larger possible range of 0.66 feet to 6.6 feet. Source: Melillo et al. 2014 and Parris et al. 2012.

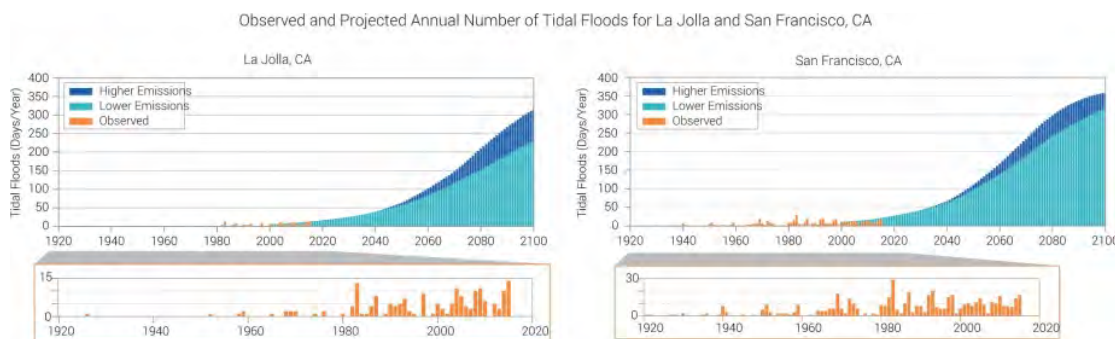


Figure 10: Number of tidal flood days per year for the observed record (orange bars) and projections for two possible futures: lower emissions (light blue) and higher emissions (dark blue) per calendar year for La Jolla and San Francisco, CA. Sea level rise has caused an increase in tidal floods associated with nuisance-level impacts. Nuisance floods are events in which water levels exceed the local threshold (set by NOAA’s National Weather Service) for minor impacts, such as road closures and overwhelmed storm drains. The greatest number of tidal flood days (all days

exceeding the nuisance level threshold) occurred in 2015 at La Jolla and in 1983 in San Francisco. Projected increases are large even under a lower emissions pathway. Near the end of the century, under a higher emissions pathway, some models (not shown here) project tidal flooding nearly every day of the year. To see these and other projections under additional emissions pathways, please see the supplemental material on the State Summaries website (<http://stateclimatesummaries.globalchange.gov> (<http://stateclimatesummaries.globalchange.gov>)). Source: NOAA NOS.

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Indicators of Climate Change in California



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Matthew Rodriguez
Secretary for Environmental Protection



INDICATORS OF CLIMATE CHANGE IN CALIFORNIA

May 2018

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SUMMARY

From record temperatures to proliferating wildfires and rising seas, climate change poses an immediate and escalating threat to California's environment, public health, and economic vitality. Recent climate-related events – such as the devastating 2017 wildfires and the record-setting 2012-16 drought – have highlighted the challenges that confront the state as its climate continues to evolve.

California has been a pioneer in addressing climate change. This report helps support policy decisions and facilitates communication about climate change by providing, in a single document, indicators characterizing its multiple aspects in California.

Indicators are scientifically-based measurements that track trends in various aspects of climate change. Many indicators reveal discernable evidence that climate change is occurring in California and is having significant, measurable impacts in the state.

The report's 36 indicators are grouped into four categories, as listed below. The report discusses what these indicators show, why they are important, and the factors that may be influencing them.

- Human-influenced (anthropogenic) drivers of climate change, such as greenhouse gas emissions
- Changes in the state's climate
- Impacts of climate change on physical systems, such as oceans, lakes and snowpack
- Impacts of climate change on biological systems – humans, vegetation and wildlife

The following pages summarize and highlight the report findings.

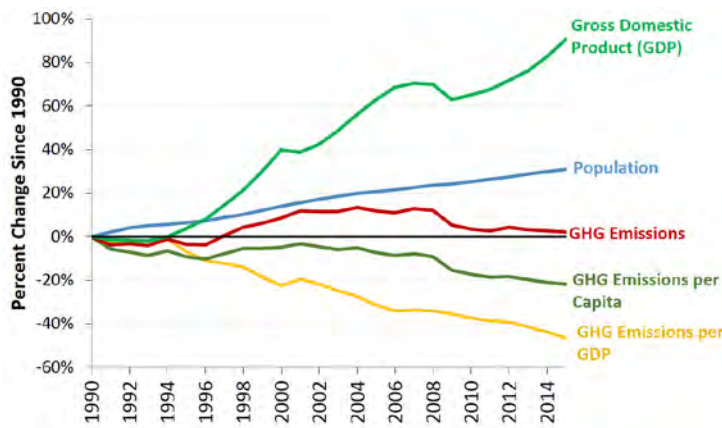


The Earth’s climate is warming, mostly due to human activities such as changes in land cover and emissions of certain pollutants. Greenhouse gases are the major human-influenced drivers of climate change. These gases warm the Earth’s surface by trapping heat in the atmosphere.

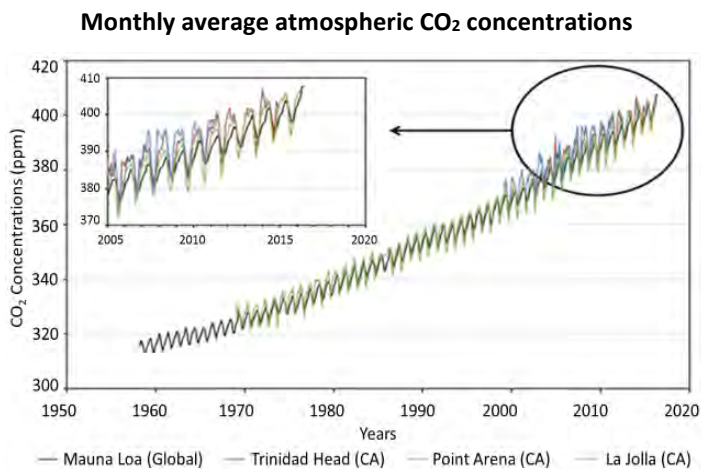
International climate agreements aim to stabilize atmospheric greenhouse gas concentrations at a level that would prevent “dangerous anthropogenic interference with the climate system.” The 2015 Paris Agreement calls for keeping the rise in the global average temperature to well below 2 degrees Celsius (°C) above pre-industrial levels. The Agreement also commits to pursue efforts to further limit the increase to 1.5°C. These efforts would significantly reduce the risks and impacts of climate change.

California’s **greenhouse gas emissions** show promising downward trends, with emissions per capita and per dollar of its gross domestic product declining since 1990. These trends are the result of California’s pioneering efforts to curb greenhouse gas emissions, and are occurring despite an increase in the state’s population and economic output. Greenhouse gases are emitted from fossil fuel combustion for transportation and energy, landfills, wastewater treatment facilities, and livestock. The major greenhouse gases are carbon dioxide (CO₂), methane, nitrous oxide, and fluorinated gases. CO₂ accounts for 85 percent of greenhouse gas emissions in the state, and transportation is its largest source, accounting for over a third of the total emissions in 2015.

Trends in California's population, economy, and greenhouse gas (GHG) emissions since 1990

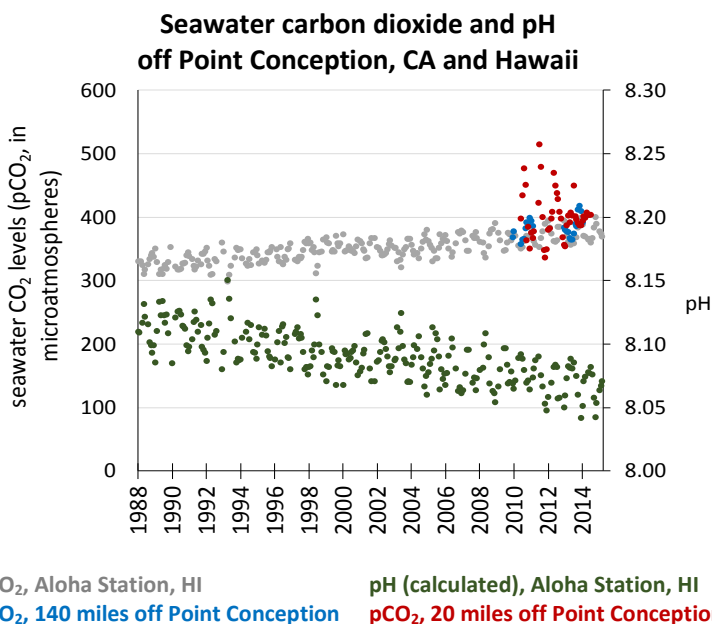


Concentrations of black carbon in California’s air have dropped by more than 90 percent over the past 50 years despite a seven-fold increase in statewide diesel fuel consumption — its largest anthropogenic source. This is largely due to tailpipe emission standards, diesel fuel regulations and biomass burning restrictions. Black carbon is a “short-lived climate pollutant.” Unlike CO₂, it does not persist for long in the atmosphere. It is also a powerful global warming agent. Black carbon is the second most important contributor to global warming after CO₂.



Atmospheric concentrations of CO₂ continue to increase. Measurements at California coastal sites are consistent with those at Mauna Loa, Hawaii, where the first and longest continuous measurements of global atmospheric CO₂ concentrations have been taken. In less than six decades, concentrations of CO₂ have increased from 315 parts per million (ppm) to over 400 ppm in 2015. Since CO₂ persists in the atmosphere for centuries, its levels are expected to remain above 400 ppm for many generations.

As atmospheric concentrations of CO₂ increase, so do levels in the ocean, leading to **ocean acidification**. The ocean absorbs approximately 30 percent of the CO₂ released into the atmosphere each year. Monitoring off Hawaii from 1988 to 2015 shows CO₂ levels in seawater are increasing at a steady rate. The longest-running publicly available data in California from Point Conception, near Santa Barbara, began in 2010. While not measured long enough to discern a trend for California waters, values are similar to those measured at Hawaii at similar times.

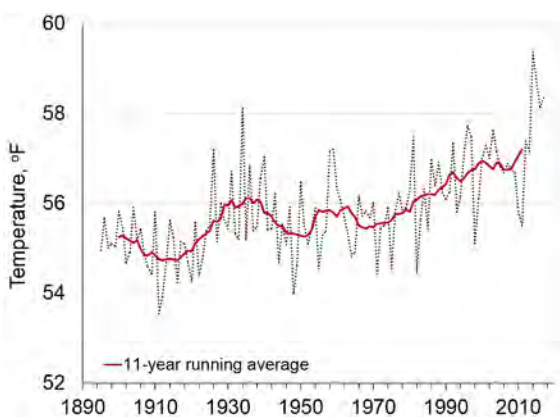




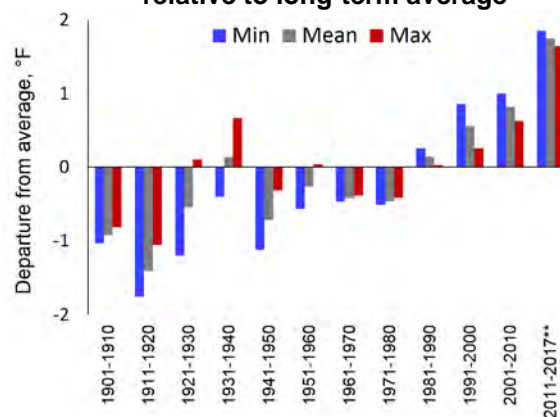
Climate is generally defined as “average weather,” usually described in terms of the mean and variability of temperature, precipitation and wind over a period of time. The evidence that the climate system is warming is unequivocal. In California, consistent with global observations, each of the last three decades has been successively warmer than any preceding decade.

Since 1895, **annual average air temperatures** have increased throughout the state, with temperatures rising at a faster rate beginning in the 1980s. The last four years were notably warm, with 2014 being the warmest on record, followed by 2015, 2017, and 2016. Temperatures at night have increased more than during the day: minimum temperatures (which generally occur at night) increased at a rate of 2.3 degrees Fahrenheit (°F) per century, compared to 1.3°F per century for maximum temperatures.

Statewide annual average temperature



Statewide temperatures by decade relative to long-term average*



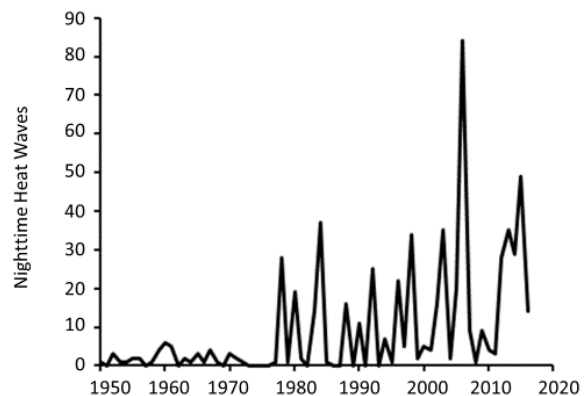
* 1949-2005 base period
 ** Partial decade

Temperature is a basic physical factor that affects many natural processes and human activities. Warmer air temperatures alter precipitation and runoff patterns, affecting the availability of freshwater supplies. Temperature changes can also increase the risk of severe weather events such as heat waves and intense storms. A wide range of impacts on ecosystems and on human health and well-being are associated with increased temperatures.

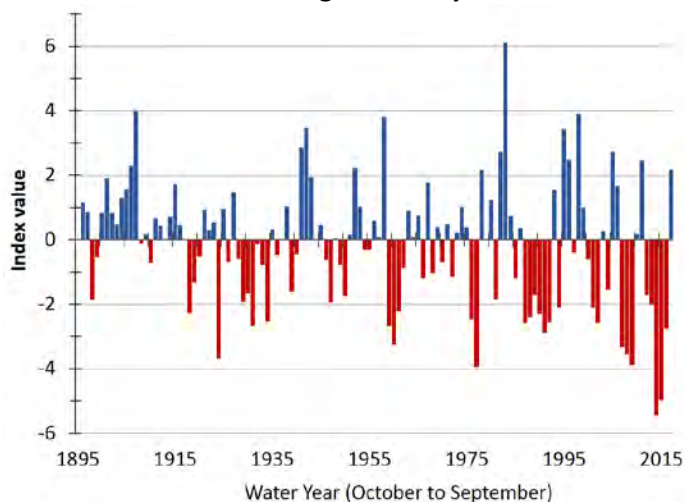


Extremely hot days and nights — that is, when temperatures are at or above the highest 2 percent of maximum and minimum daily temperatures, respectively — have become more frequent since 1950. Both extreme heat days and nights have increased at a faster rate in the past 30 years. Heat waves, defined as five or more consecutive extreme heat days or nights, are also increasing, especially at night. Nighttime heat waves, which were infrequent until the mid-1970s, have increased markedly over the past 40 years.

Nighttime heat waves (April to October)



Palmer Drought Severity Index



A universally used indicator of **drought** — the Palmer Drought Severity Index — shows that California has become drier over time. Five of the eight years of severe to extreme drought (when index values fell below -3) occurred between 2007 and 2016, with unprecedented dry years in 2014 and 2015. The record warmth from 2012 to 2016 coincided with consecutive dry years, including a year of record low snowpack, leading to the most extreme drought since instrumental records began in 1895.

Other indicators of changes in climate show that:

- **Winter chill** has been declining in certain areas of the Central Valley. This is the period of cold temperatures above freezing but below a threshold temperature needed by fruit and nut trees to become and remain dormant, bloom, and subsequently bear fruit. When tracked using “chill hours,” a metric used since the 1940s, more than half the sites studied showed declining trends; with the more recently developed “chill portions” metric, fewer sites showed declines.
- With warmer temperatures, the energy needed to cool buildings during warm weather — measured by “**cooling degree days**” — has increased, while the energy needed to heat buildings during cold weather — measured by “**heating degree days**” — has decreased.
- Statewide **precipitation** has become increasingly variable from year to year. In seven of the last ten years, statewide precipitation has been below the statewide average (22.9 inches). In fact, California’s driest consecutive four-year period occurred from 2012 to 2015. In recent years, the fraction of precipitation that falls as rain (rather than snow) over the watersheds that provide most of California’s water supply has been increasing — another indication of warming temperatures.



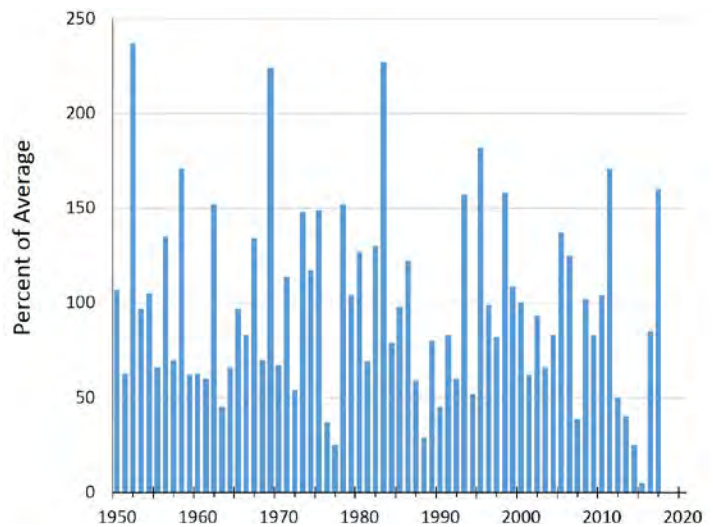
Warming temperatures and changing precipitation patterns have altered California’s “physical systems” — the ocean, lakes, rivers and snowpack — upon which the state depends. Winter snowpack and spring snowmelt runoff from the Sierra Nevada and southern Cascade Mountains provide approximately one-third of the state’s annual water supply.

The amount of water stored in the state’s snowpack — referred to as **snow-water content** — is highly variable from year to year, ranging from a high in 1952 of about 240 percent of the long-term average to a record low of 5 percent in 2015. Less snowpack accumulates when winter temperatures are warmer because more precipitation falls as rain instead of snow.

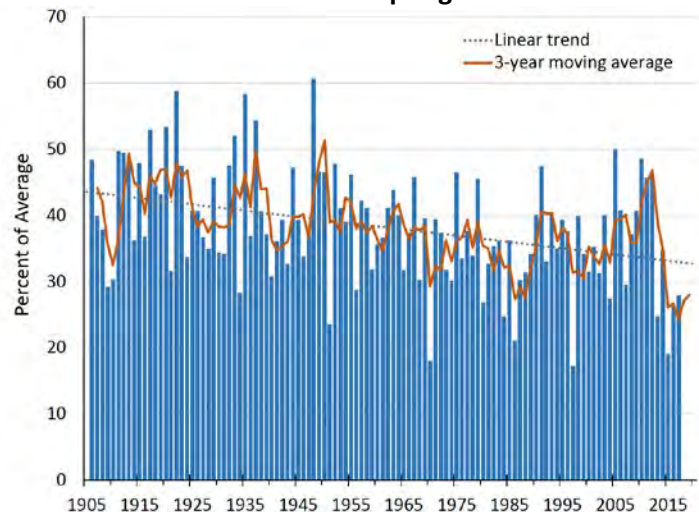
The fraction of **snowmelt runoff** reaching the Sacramento River between April and July has decreased by about 9 percent since 1906. This reduction is influenced by earlier spring warming and more winter precipitation falling as rain. With less spring runoff, less water is available during summer months to meet the state’s domestic and agricultural water demands. These reductions also affect the generation of hydroelectricity, impair cold-water habitat for certain fishes, and stress forest vegetation. The latter has consequences for wildfire risk and long-term forest health.



Snow-water content, as a percentage of average



Sacramento River spring* runoff

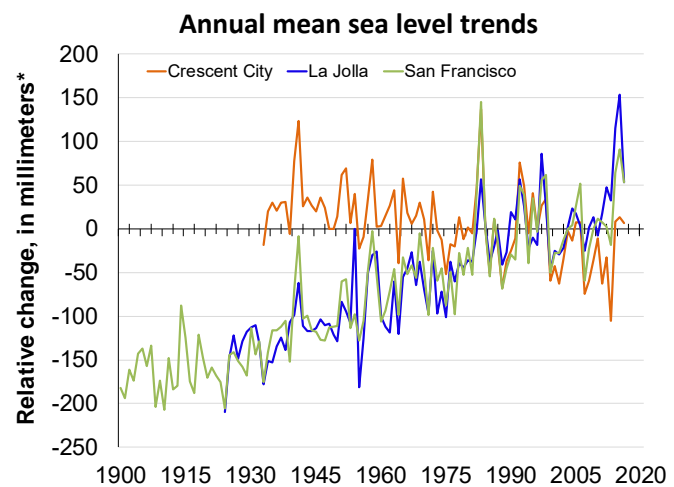


*April to July as a percent of total year runoff

From the beginning of the 20th century to 2014, some of the largest **glaciers** in the Sierra Nevada have lost an average of about 70 percent of their area. Reductions ranged from about 50 to 85 percent of each glacier's area in 1903. Glaciers are important indicators of climate change: winter snowfall nourishes the glaciers, and spring/summer temperatures melt ice and snow. Winter air temperature determines whether precipitation falls as rain or snow, affecting glacier mass gain; summer air temperature affects glacier loss. Glacier shrinkage worldwide is an important contributor to global sea level rise.



Along the California coast, **sea levels** have generally risen. Since 1900, mean sea level has increased by about 180 millimeters (7 inches) at San Francisco and by about 150 millimeters (6 inches) since 1924 at La Jolla. In contrast, sea level at Crescent City has declined by about 70 millimeters (3 inches) since 1933 due to an uplift of the land surface from the movement of the Earth's plates. Sea level rise threatens existing or planned infrastructure, development, and ecosystems along California's coast.



* Relative to tidal datum (reference point set by the NOAA)

Other indicators of the impacts of climate change on physical systems show that:

- Average **lake water temperatures** at Lake Tahoe have increased by nearly 1°F since 1970, at an average rate of 0.02°F per year. During the last four years, warming accelerated about 10 times faster than the long-term rate. The lake surface warmed faster — almost 0.04°F per year. The warming of Lake Tahoe's waters can disrupt the lake's ecosystem by affecting key physical and biological processes.
- **Coastal ocean temperatures** at three sites in California have warmed over the past century. Over 90 percent of the Earth's observed warming over the past 50 years has occurred in the ocean. Warming sea surface temperatures can alter the distribution and abundance of many marine organisms, including commercially important species. Ocean warming accounts for about half of the sea level rise that has occurred globally over the past century.
- **Oxygen concentrations** at three water depths offshore of San Diego indicate overall decreases as well as low-oxygen events. Declining oxygen concentrations can lead to significant ecological changes in marine ecosystems, including wide-ranging impacts on species diversity, abundance, and marine food webs. Changing ocean chemistry, in concert with changes in temperature, may lead to even greater and more widespread impacts on coastal marine ecosystems.

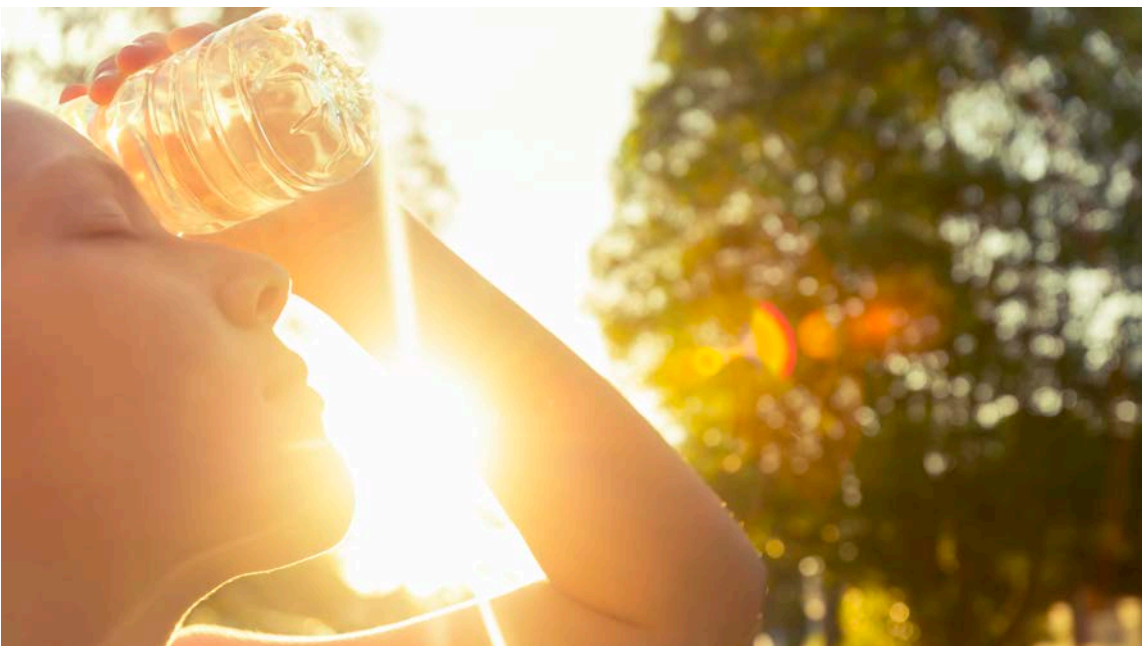


Climate change impacts on terrestrial, marine and freshwater ecosystems have been observed in California. As with global observations, species responses include those consistent with warming: elevational or latitudinal shifts in range; changes in the timing of key plant and animal life cycle events (known as “phenology”); and changes in the abundance of species and in community composition. With continued climate change, many species may be unable to adapt or to migrate to suitable climates, particularly given the influence of other factors such as land use, habitat alteration, and emissions of pollutants.

HUMANS

Humans are better able to adapt to a changing climate than plants and animals in natural ecosystems. Nevertheless, climate change poses a threat to public health. While it is difficult to track its influence using indicators, climate change can impact human well-being in many ways. Examples include injuries and fatalities from extreme events and respiratory stress from poor air quality. Indicators of the impacts of climate change on human health show that:

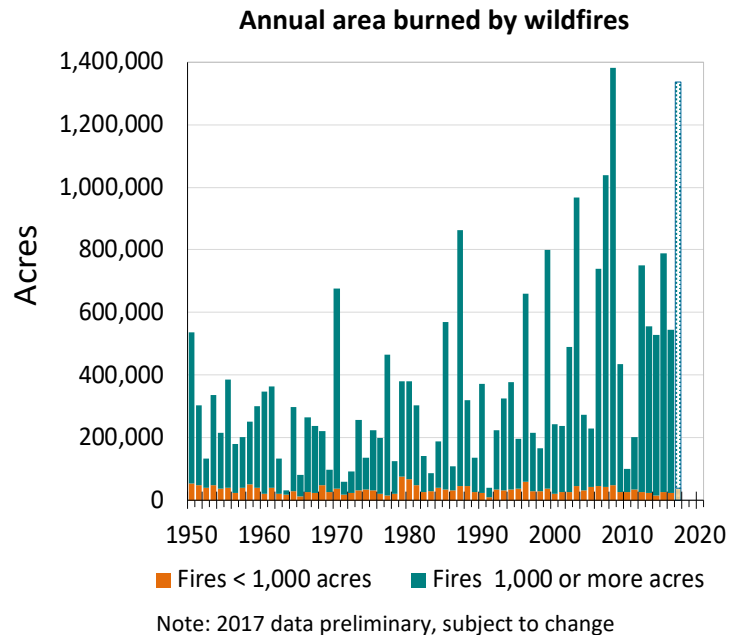
- Warming temperatures and changes in precipitation can affect **vector-borne** pathogen transmission and disease patterns in California. West Nile Virus currently poses the greatest mosquito-borne disease threat.
- **Heat-related deaths and illnesses**, which are severely underreported, vary from year to year. In 2006, they were much higher than any other year because of a prolonged heat wave.



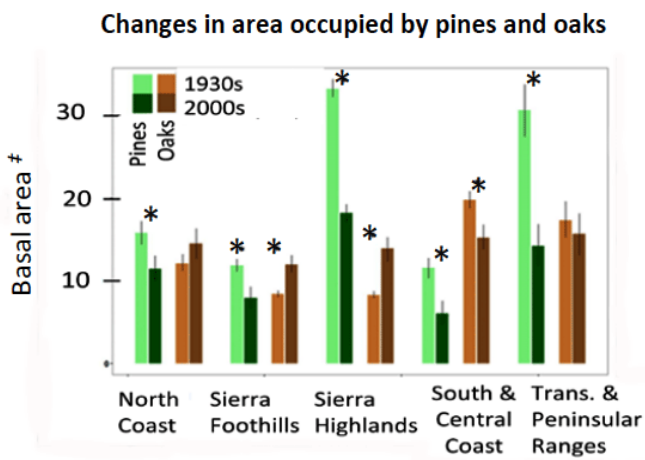
VEGETATION

Warming temperatures, declining snowpack, and earlier spring snowmelt runoff can create stresses on vegetation. A measure of plant stress, climatic water deficit, reflects the demand plants have for water relative to the availability of water in the soil. Increases in climatic water deficit are associated with a warming climate.

Since 1950, the area burned by **wildfires** each year has been increasing, as spring and summer temperatures have warmed and spring snowmelt has occurred earlier. During the recent “hotter” drought, unusually warm temperatures intensified the effects of very low precipitation and snowpack and created conditions for extreme, high severity wildfires that spread rapidly. Five of the largest fire years have occurred since 2006. The largest recorded wildfire in the state (Thomas Fire) occurred in December 2017.



Evidence of how the state’s **forests and woodlands** are responding to climate change has been found in studies that compared historical and current conditions. Historical data are from a 1930s survey of California’s vegetation.



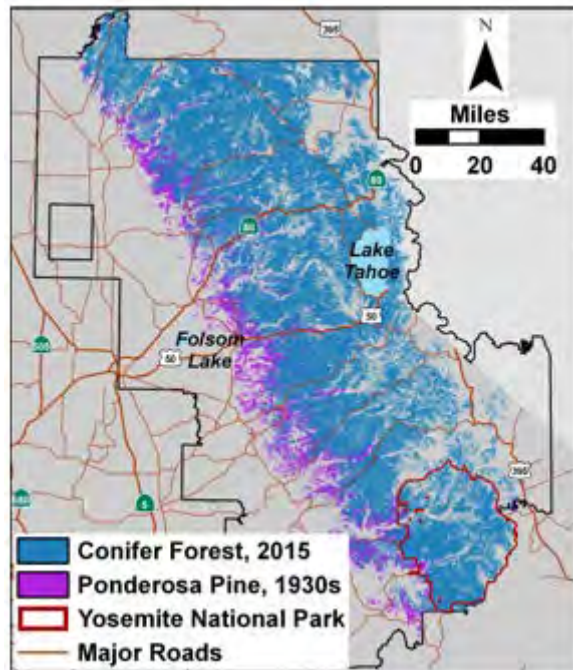
The structure and composition of the state’s forests and woodlands are changing. Compared to the 1930s, today’s forests have more small trees and fewer large trees. Pines occupy less area statewide and, in certain parts of the state, oaks cover larger areas. The decline in large trees and increased abundance of oaks are associated with statewide increases in climatic water deficit.

‡ Basal area refers to the area occupied by tree trunks

*Statistically significant differences

On the western side of the northern Sierra Nevada Mountains, the lower edge of the Ponderosa pine forest has moved upslope. Since the 1930s, the forest has retreated from elevations that no longer experience freezing winter temperatures at night. The loss of conifers in this elevation was accompanied by an expansion of forests dominated by broadleaf trees.

**Ponderosa Pine forest retreat
in the Sierra Nevada Mountains since 1934**



Other indicators of the impacts of climate change on vegetation show that:

- **Tree deaths** have increased dramatically since the 2012-2016 drought. Approximately 129 million trees died between 2012 and December 2017. Higher temperatures and decreased water availability made the trees more vulnerable to insects and pathogen attacks.
- **Vegetation distribution** has shifted across the north slope of Deep Canyon in the Santa Rosa Mountains in Southern California. Dominant plant species have moved upward by an average of about 65 meters (213 feet) in the past 30 years.
- Compared to the 1930s, today's **subalpine forests** (forests at elevations above 7,500 feet) in the Sierra Nevada are denser, as small tree densities increased by 62 percent while large tree densities decreased by 21 percent.
- In parts of the Central Valley, certain **fruits and nuts** (prunes and one walnut variety) are maturing more quickly with warming temperatures, leading to earlier harvests. Shorter maturation times generally lead to smaller fruits and nuts, potentially causing a significant loss of revenue for growers and suppliers.

WILDLIFE

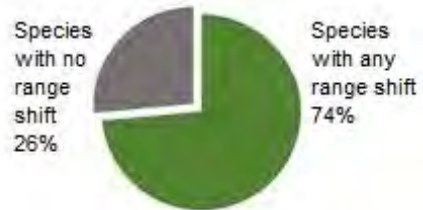
Changes in temperature, precipitation, food sources, competition for prey, and other physical or biological features of the habitat may force changes in the timing of key life cycle events for plants and animals and shift the ranges where these plants and animals live. These factors, along with the inherent sensitivity of the species, interact in ways that can affect species responses differently.

Certain birds and mammals are found at different elevations in three study regions of the Sierra Nevada Mountains today compared to a century ago.

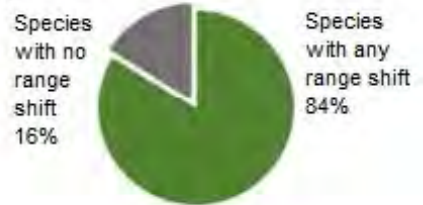
Range shifts have been observed in almost 75 percent of the small mammal species and over 80 percent of the bird species surveyed. High-elevation mammals tended to move upslope; birds and low-elevation mammals moved downslope as frequently as upslope. Across the three study regions, species did not show uniform shifts in elevation. The varied responses reflect the influence of intrinsic sensitivity to temperature, precipitation or other physical factors. They may also be due to changes in food sources, vegetation and interactions with competitors.

Sierra Nevada range shifts over the past century

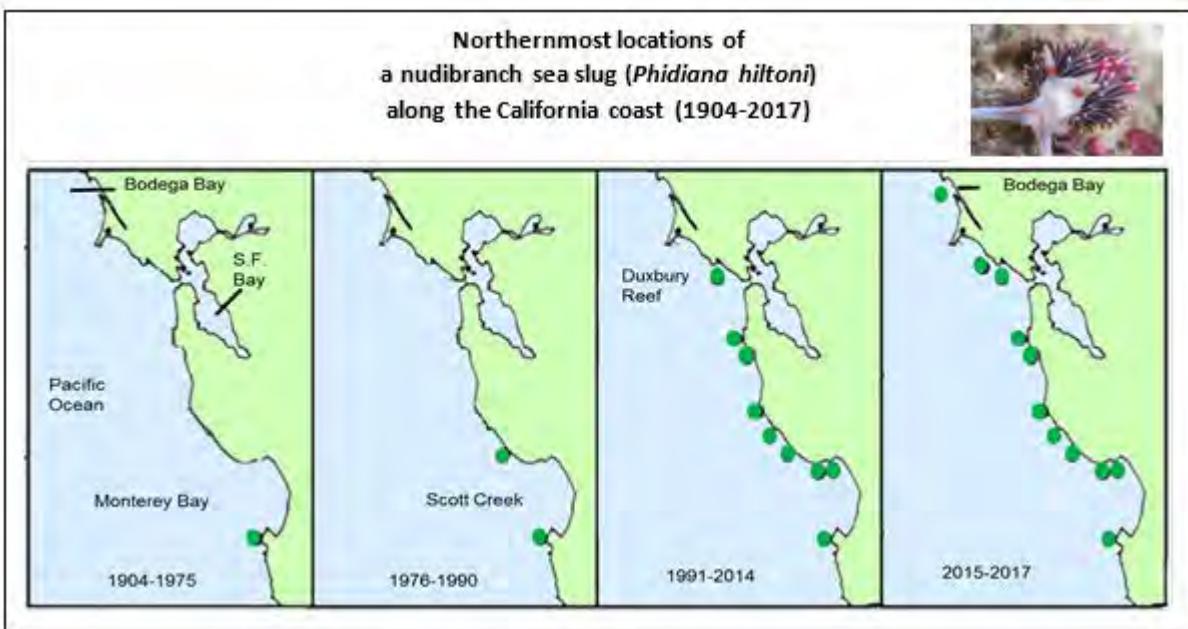
Small mammals



Birds



Marine species respond to changing ocean conditions, especially during periods of unusually warm sea surface temperatures. A **nudibranch** sea slug, *Phidiana hiltoni*, has expanded its range northward by 210 kilometers (130 miles) — from the Monterey Peninsula to Bodega Bay — since the mid-1970s in response to warming ocean conditions. This nudibranch was found for the first time in Bodega Bay in 2015. Unlike other nudibranch species, *P. hiltoni* has persisted at this northernmost location after warm water conditions ended.





Other indicators of the impacts of climate change on wildlife show that:

- Over the past 45 years, **Central Valley butterfly** species have been appearing earlier in the spring. Their earlier emergence is linked with hotter and drier regional winter conditions.
- Since 1980, the timing of spring and fall **migratory bird arrivals** at a coastal site in northern California have shown a diversity of changes.
- Across the state, **wintering bird species** have collectively shifted their range northward and closer to the coast over the past 48 years. In both cases, species' responses have not been uniform: some species have shifted to higher elevations or latitudes, and the shifts have occurred to varying degrees.
- The **effects of ocean acidification on marine organisms** involve a wide range of biological processes. The most widely observed effect is interference with shell-formation in mollusks. (Since there are no trend data tracking these effects, this is a "Type III" indicator.)
- Ocean conditions strongly influence marine organisms in the California Current, as seen with **copepod populations**. At the base of the food chain, the abundance and types of copepod species have been correlated with the abundance of many fish species.
- The number of adult **Chinook salmon** returning from the ocean to the Sacramento River has become more variable over the last two decades. This number is impacted by extreme mortality events among juvenile salmon. As residents of both marine and freshwater environments, salmon are at risk from the impacts of climate change on these habitats.
- Over a 45-year period, the **breeding success of Cassin's auklets** on Southeast Farallon Island near San Francisco has become increasingly variable. It is associated with the abundance of prey species that are influenced by ocean conditions such as warming.
- During years when sea surface temperatures are unusually warm in their breeding area, there have been fewer **California sea lion pup** births, higher pup mortality, and poor pup conditions at San Miguel Island off Santa Barbara. Sea lions are vulnerable to fluctuations in the abundance and distribution of their primary prey, which are directly influenced by ocean conditions.



EMERGING CLIMATE CHANGE ISSUES



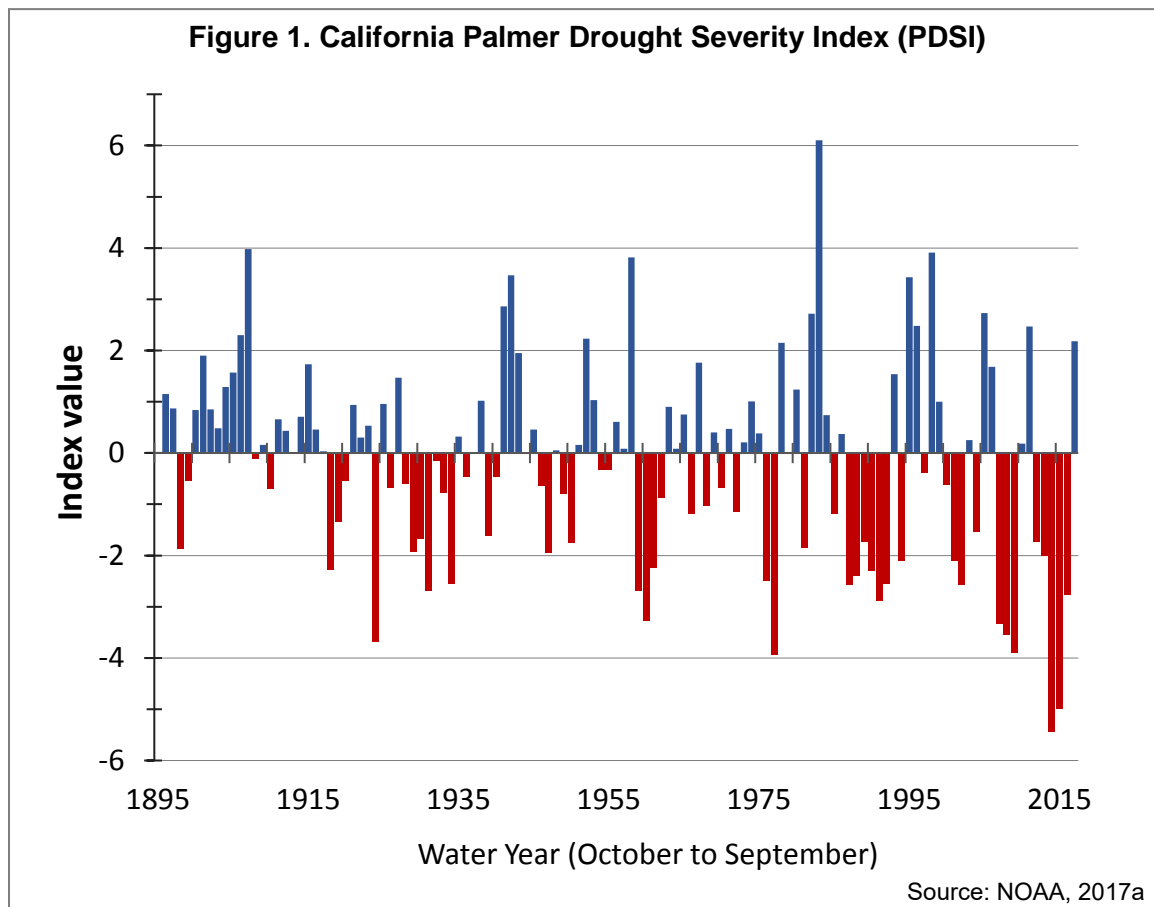
Changes and impacts in California's environment that are plausibly influenced by climate change, though not yet established, are referred to in the report as emerging climate change issues. Scientifically defensible hypotheses, models, and/or limited data support the assertion that certain observed or anticipated changes are in part due to climate change.

Among the emerging issues described in this report are:

- Increased frequency, severity, and duration of harmful algal blooms in marine and freshwater environments, which are known to be influenced by water temperature and drought conditions.
- Reduced duration and extent of winter fog in the Central Valley and coastal fog, with warming winter temperatures and other climate changes.
- Increased survival and spread of forest disease-causing pathogens and insects, along with increased susceptibility of trees, which are affected by temperature, precipitation, and forest fires.
- More favorable conditions that allow invasive agricultural pest species like the Oriental fruit fly to thrive in places where they previously could not survive.

DROUGHT

Over the past 120 years, California has become increasingly dry. The most recent drought from 2012 to 2016 was the most extreme since instrumental records began. Extraordinarily high precipitation in 2017 ended the drought.



What does the indicator show?

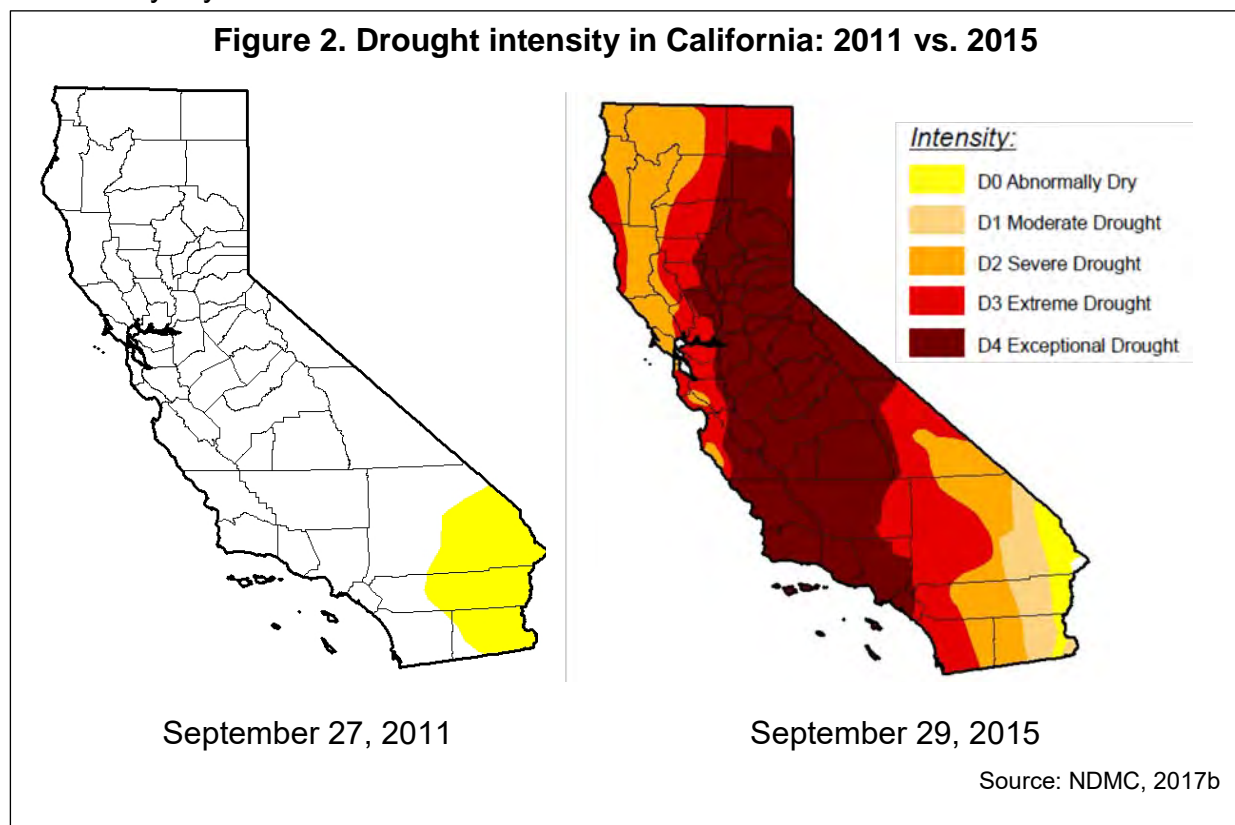
Droughts are generally thought of as periods of unusually dry weather that last long enough to cause a shortage of water (IPCC, 2014). Figure 1 shows values for the Palmer Drought Severity Index (PDSI) over the past 120 years: positive values (blue bars) indicate “wet” years; negative values (red bars) are “dry” years. Although drought can be defined in multiple ways and tracked using different metrics, the PDSI is a universally used indicator of drought; it measures relative dryness of a region using readily available temperature and precipitation data and local available water content of the soil (NDMC, 2017a). Values below -3 represent severe to extreme drought. Five of the eight years when PDSI values fell below -3 were between 2007 and 2016, with unprecedented dry years in 2014 and 2015.

As noted above, from 2012 to 2016, California experienced the most extreme drought since instrumental records began in 1895 (AghaKouchak et al., 2014; Diffenbaugh et al., 2015; Griffin and Anchukaitis, 2014; Robeson, 2015; Swain et al., 2014; Williams et al., 2015). It was possibly the most extreme for a millennium or more (Griffin and



Anchukaitis, 2014; Robeson, 2015). This drought occurred at a time of record warmth — 2014 is the warmest year on record, followed by 2015 — accompanied by record low snowpack, less than 5 percent of average in 2015. In response to the drought, a State of Emergency was declared in 2014 (<https://www.gov.ca.gov/news.php?id=18368>). Other periods of major droughts in California include 1929-1934, 1976-1977, and 1987-1992 (DWR, 2015). The drought ended with unusually high precipitation in 2017; however, because precipitation is only one component of PDSI (temperature and soil moisture are two others), an unusually high precipitation value does not necessarily result in an equally high PDSI value, particularly given the unusually hot temperatures in 2016 and 2017.

The maps in Figure 2 compare the intensity of the drought in 2015 to conditions in 2011 (NDMC, 2017b). Drought conditions fall under one of five drought categories, from least intense (“D0, abnormally dry”) to most intense (“D4, exceptional drought”). These categories are based on five key indicators, including PDSI and measures of soil moisture, streamflow and precipitation; they also incorporate numerous supplementary indicators including drought impacts (such as on crops, pastures and water supply) and local reports from expert observers. In 2015, the entire state was under one of the five drought categories, with almost half of the state’s area (46 percent) in the “exceptional drought” category. By comparison, in 2011 only 11 percent of the state was considered “abnormally dry.”



Why is this indicator important?

Droughts have major environmental, social, and economic repercussions, affecting the availability of water both for human use — such as urban uses (including drinking), agriculture, hydroelectricity generation — and for ecosystems. People most reliant on annual rainfall are generally the first to feel the impacts of drought. A single dry year can impair activities like dryland farming or livestock grazing that depend on unmanaged water supplies (DWR, 2015).

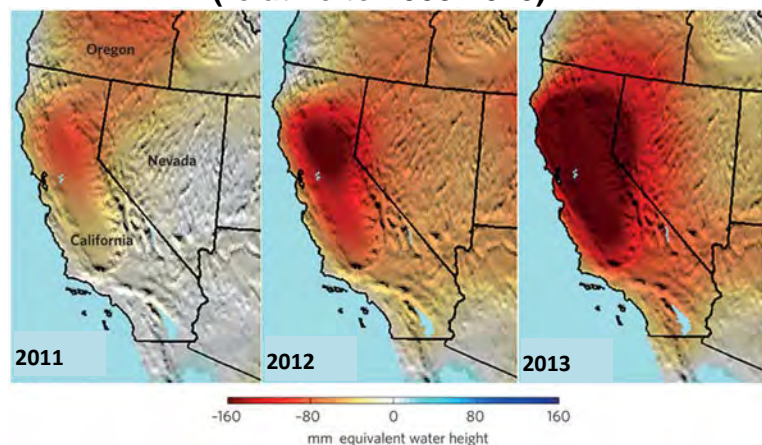
Drinking water shortages primarily occur among small drinking water systems. By late 2015, more than 100 small water systems lacked enough water and more than 2,000 domestic wells went dry, particularly in the Central Valley and Sierra Nevada foothills (PPIC, 2016). Drinking water shortages place a disproportionate burden on lower income households, as financial costs of water services tend to rise during droughts (Famiglietti, 2014; Feinstein et al., 2017).

Drought also impacts the generation of hydroelectricity, a major source of power in California. Hydroelectricity, which is dependent on snowmelt runoff and rainfall, costs less than most other forms of electricity, produces no greenhouse gases, and helps satisfy peak energy demands (Gleick, 2016). In 2014, the state's driest year, hydroelectric power generation provided 6 percent of the in-state electricity generation, down from 12 percent in 2013 (CEC, 2017). The total reductions in hydroelectricity generation during the recent drought may have increased state electricity costs by about \$2.0 billion (Gleick, 2016).

Negative economic impacts on California's agricultural sector as a whole from the recent drought were significant (Howitt et al., 2014 and 2015). Impacts included abandoned orchards and vineyards, fallowed land (more than 500,000 acres, or 6 percent of irrigated acreage, were fallowed in 2015), and lost jobs (DWR, 2015; PPIC, 2016). The livelihoods of many farmworkers disappeared (Swain, 2015).

Approximately 30 to 46 percent of the state's total water supply comes from groundwater (DWR, 2017a). Reliance on groundwater increases during droughts. Between 2011 and 2016, groundwater levels decreased by at least 10 feet in over 40 percent of monitored wells in the state (DWR, 2017b). Figure 3 illustrates how groundwater levels in California significantly dropped between 2011 and 2013 (Famiglietti, 2014).

Figure 3. Groundwater storage anomalies (relative to 2005-2010)



Maps of dry season (September-November) total water storage anomalies (mm equivalent water height, anomalies with respect to 2005-2010), constructed using data from NASA's Gravity Recovery and Climate Experiment satellite mission.

Source: Famiglietti, 2014



Over pumping of groundwater results in aquifer compaction, reducing its water-holding capacity, and land subsidence (i.e., the land surface sinks). Land subsidence can impact infrastructure — including water conveyance systems, roads, railways, bridges — aquifer storage capacity, and land topography (USGS, 2017a and 2017b).

The San Joaquin Valley, one of the most productive agricultural regions in the nation, has been impacted by the over pumping of groundwater. Starting in the early 1900s, farmers relied on groundwater for water supply. By 1970, about half of San Joaquin Valley experienced land subsidence. Some areas had dropped by as much as 28 feet. Reduced surface water availability during 1976-77, 1986-92, 2007-09, and 2012-2015 caused even more groundwater pumping. The photograph on the right from the San Joaquin Valley shows the approximate height of the land surface in 1925 compared to much lower levels in 1955 and 1977 as a result of excessive groundwater pumping.



Droughts can harm aquatic ecosystems. During the latest drought, rivers in California experienced record-low flows and poor water quality. Various coastal and mountain streams that are home to native fish like salmon and steelhead dried up. Rivers below Central Valley dams deteriorated. As many as 18 native fish species may face extinction with continued drought, which could put other species at risk of extinction. In addition, water shortages in wildlife refuges in the Central Valley and Klamath Basin during the recent drought forced birds to gather in smaller areas, making them more vulnerable to disease outbreaks and predation (PPIC, 2016).

Droughts produce drier-than-normal conditions that can increase the intensity and severity of wildfires (USGS, 2017a). Droughts and wildfires, in combination with altered land cover, disease, and human activity, can contribute to expanding or contracting vegetation ranges. Forests may convert to shrubland and grassland. Die-offs in whitebark pine in the Sierra Nevada and conifers in southern California have been related to drought. A rapid redistribution of coniferous and broadleaf species occurred in the mountains of southern California during droughts in the early 2000s (Clark et al., 2016). Droughts can contribute to bark beetle outbreaks, which cause tree mortality. Between 2010 and late 2015, aerial surveys conducted by the US Forest Service found that around 40 million trees had died in California. Nearly three quarters of this total died from drought and insect infestation from September 2014 to October 2015 alone (Tree



Mortality Task Force, 2017). Droughts also affect most ecosystem services provided by forests, including carbon storage (Clark et al., 2016).

Finally, drought may affect human health by altering patterns of certain diseases like West Nile (see *Vector-borne diseases* indicator), and by increasing air pollution from wildfires and dust storms, (DWR, 2015; see *Wildfires* indicator). These drought-related changes potentially can impact respiratory health (CDC, 2016). Interestingly, however, a study by Berman et al. (2017) found a lowered incidence of hospital admissions for respiratory illness among older people in the western US during drought periods compared to non-drought periods. The reduced incidence of respiratory admissions may be due to less exposure to pollen and allergenic spores during dry spells. In the same study, California had an overall decreased risk of mortality among the elderly during drought. Counties in the western US that have less frequent droughts showed significantly greater risks for cardiovascular admissions and mortality when droughts occurred. Another study found that the stress caused by drought may induce anxiety, depression, or other adverse mental health outcomes for some people (Vins et al., 2015).

What factors influence this indicator?

Droughts in California are influenced by the El Niño-Southern Oscillation, regional atmospheric pressure anomalies, and “drought-busting” atmospheric rivers (Griffin and Achukaitis, 2014; Dettinger, 2013). Historically dry winters in California have been associated with a ridge of high atmospheric pressure off the west coast, and wet winters have been associated with a trough off the west coast and an El Niño event. A study using climate change models and observational data found the precipitation deficit during the most recent drought to be dominated by natural variability, although sea surface temperatures were found to also play a role (Seager et al., 2015).

While precipitation is a main driver of drought variability, a growing body of evidence suggests that anthropogenic warming has increased the likelihood of extreme droughts in the state (AghaKouchak et al., 2014; Williams et al., 2015; Diffenbaugh et al., 2015; Shukla et al., 2015; Swain et al., 2014). Climate change has increased the chances of co-occurring temperature and precipitation conditions that have historically led to drought in California (Diffenbaugh et al., 2015). In fact, a combination of record high temperatures and low (but not unprecedented) precipitation contributed to the severity of the recent drought (Griffin and Achukaitis, 2014). Anthropogenic warming has been linked to the unusually intense atmospheric pattern that initiated the dry 2013-2014 winter in California (Wang et al., 2014). Mao et al. (2015) determined that the effect of anthropogenic warming in the winter of 2013-2014, although modest, likely exacerbated drought conditions. In the future, climate change is expected to continue to make dry and warm years happen more often (Diffenbaugh et al., 2015). More heat from climate change will likely increase the rate of drying, which will further exacerbate drought (Trenberth et al., 2014).

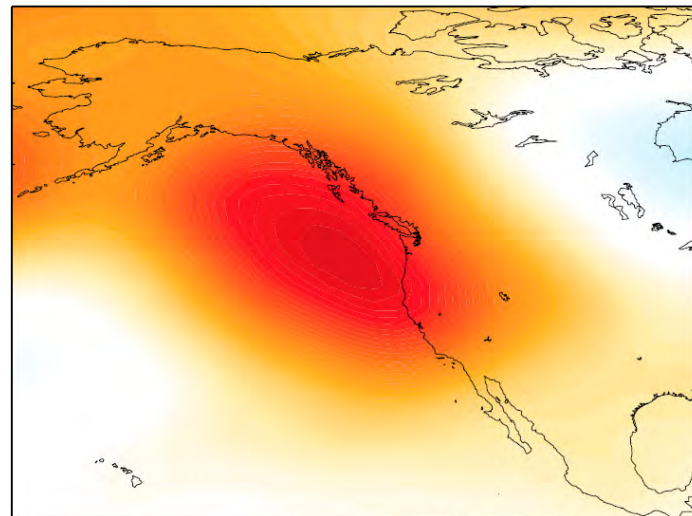
Atmospheric circulation patterns like those observed during California’s most extreme dry and hot years have increased during recent decades (Swain et al., 2016). In



particular, patterns characterized by a persistent ridge near the West Coast of North America — similar to those during the latter half of the most recent drought — have occurred more frequently; these patterns lead to both extremely low precipitation and extremely warm temperatures.

In 2012-2015, a region of atmospheric high pressure, nicknamed the “ridiculously resilient ridge” (see Figure 5) resulted in a northward shift in the Pacific storm track during the rainy season, preventing storms from reaching California. Studies (such as Swain et al., 2014 and Wang et al., 2014) suggest that climate change may be increasing the likelihood of the type of rare atmospheric event associated with the recent and unusually severe drought California.

Figure 5. The “ridiculously resilient ridge”



Oct-May 500mb geopotential height anomaly, meters

-45 -40 -35 -30 -25 -20 -15 -10 -5 0 5 10 15 20 25 35 40 45

Colors represent the mean cool season 500mb geopotential height anomaly (meters) over four consecutive years (i.e., October–May 2012, 2013, 2014, and 2015).

Source: Swain, 2015

Technical Considerations

Data Characteristics

PDSI identifies droughts by incorporating data on temperature, precipitation, and the water-holding capacity of soil. The index takes into consideration moisture received as precipitation and moisture stored in the soil, accounting for potential loss of water due to temperature. It originally functioned to identify drought affecting agriculture but has since been used to identify drought associated with other types of impacts (WMO and GWP, 2016). PDSI is used to assess long-term drought patterns (NOAA, 2017b).

Strengths and Limitations of the Data

Considered a robust index of drought, PDSI is universally used and has been employed since the 1960s. However, PDSI assumes all precipitation comes as rain (Williams et al., 2015) and does not account for frozen precipitation or frozen soils very well (WMO and GWP, 2016). PDSI also does not provide information on human water demand, streamflow and reservoir storage, or groundwater accessibility (Williams et al., 2015).

Another metric for drought, the Palmer Hydrological Drought Index (PHDI), accounts for longer-lasting dryness that can perturb water storage, streamflow, and groundwater (WMO and GWP, 2016). It measures hydrological impacts, including reservoir levels and groundwater data, and responds more slowly to changing conditions than the PDSI (NOAA, 2017b). It does not account for human influences like irrigation or management practices (WMO and GWP, 2016).





THE CONTINUED TRANSITION TO ELECTRIC VEHICLES IN U.S. CITIES

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I. INTRODUCTION

The transition to electric drive is critical to limiting transportation carbon emissions, energy consumption, and local air pollution, and governments of the world are implementing policies to accelerate the transition. Government efforts to support the electric vehicle market are beginning to take hold, as the early market steadily grows each year. The global light-duty electric vehicle market exceeded 1.2 million annual sales in 2017, up more than 50% from 2016, indicating a clear increase toward economies of scale (International Zero-Emission Vehicle Alliance, 2018a). The United States is a large part of this global growth, along with the leading world electric markets of China and Europe. The United States provides an especially rich laboratory for deeper analysis because of the variation of electric vehicle sales and policy implementation across the nation.

Figure 1 shows annual electric vehicle sales in the United States from 2010 through 2017. The figure shows the eight companies with the most electric vehicle sales in 2017, as well as annual sales from all others (HybridCars, 2018). The eight companies account for 92% of the 2017 electric vehicle market in the United States. There is a general automaker trend toward more electric vehicle models and greater production volumes. The four highest-selling models were the Chevrolet Bolt, Chevrolet Volt, Toyota Prius Prime, and Tesla Model S, each with more than 20,000 U.S. sales. Most companies had increased electric vehicle sales from 2016 to 2017. As shown, electric vehicle sales in the United States increased from approximately 150,000 in 2016 to more than 190,000 in 2017, growing by about 29%.

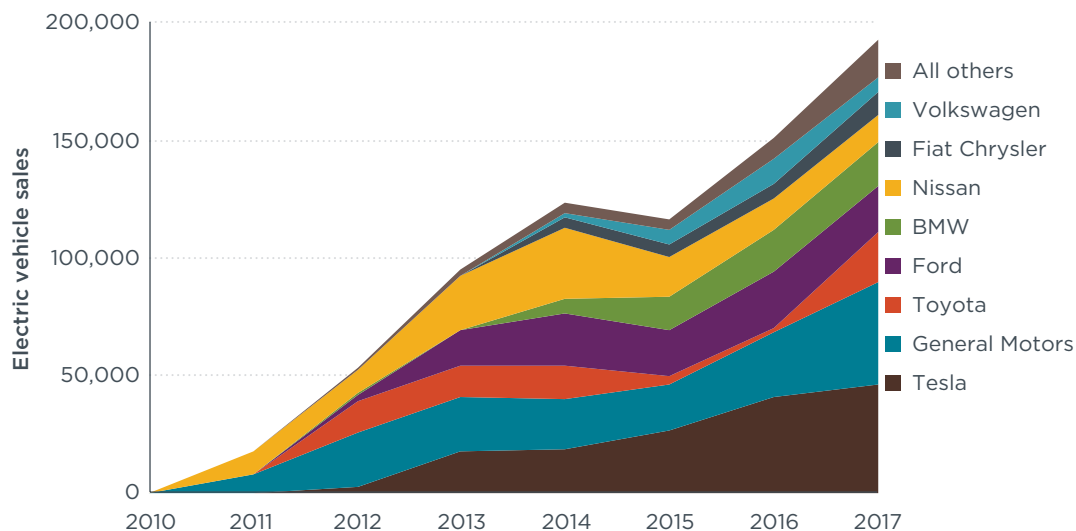


Figure 1. Automaker annual electric vehicle sales in the United States through 2017.

Automakers continue to bring more electric models across more vehicle segments to the market at greater scale. New plug-in offerings such as the Mitsubishi Outlander, Tesla Model 3, and next-generation Nissan Leaf launched in the United States in late 2017 and will likely continue to be made more widely available across more local U.S. markets. Furthermore, automakers have announced their moves toward an order of magnitude greater volume of electric vehicle production, with dozens of new model offerings in the years ahead. Battery cost reductions will ensure that these new models have lower

cost and longer range than the previous models. Because of these trends toward more models at lower prices, this is an important time for governments to consider their support policies and investments in charging infrastructure.

U.S. electric vehicle sales vary substantially at the state, regional, and local levels, as do government actions and support policies. California and the other nine Zero Emission Vehicle states account for approximately two-thirds of the U.S. EV market (Lutsey, 2018). These markets and others continue to implement a wide array of actions including consumer incentives, infrastructure deployment, and information campaigns help to overcome consumer barriers to electric vehicle adoption. Financial and nonfinancial incentives, public charging infrastructure, fleet programs, informational materials and tools, and public events help to overcome consumer barriers related to higher upfront costs, functional electric range and range anxiety, and an overall lack of awareness and understanding. Many governments are now working to bolster policy effectiveness and capture a broader set of prospective consumers.

This paper updates and builds upon our annual U.S. electric vehicle market analysis of how state, regional, and local actions are helping to overcome the prevailing electric vehicle barriers. We analyze the U.S. electric vehicle market in 2017, updating for new market data, policy, and infrastructure developments. Our previous analyses (e.g., Slowik & Lutsey, 2017) identified several factors—including financial incentives, public and workplace charging infrastructure, model availability, access to high-occupancy vehicle (HOV) lanes, and city actions—that are linked with higher electric vehicle uptake.

We describe and catalogue electric vehicle promotion actions and their implementation, identify best-practice policies, discern statistical links between promotion actions and electric vehicle uptake, and evaluate major market trends between 2016 and 2017. In Section II, we highlight several additional studies that provide background on the factors that have driven electric vehicle market growth in previous years. In Section III, we summarize and analyze all the data at the metropolitan area level. Continued updates to these types of studies are important to understand how the market evolves as new electric vehicles enter the market, new consumers are attracted to them, and new policy actions are implemented. As compared to our previous work (Slowik & Lutsey, 2017), this analysis of the 2017 U.S. market includes more market activity, more charging infrastructure, more electric vehicle models on the market, and greater local policy action.

Our cataloguing of local-level electric vehicle actions and statistical analysis are based on the promotion actions and policies that were in place throughout the majority of calendar year 2017. A primary unit of analysis is “electric vehicle uptake”—the proportion of new vehicles registered that are plug-in electric vehicles, both battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs). The analysis is primarily focused on the 50 most populous U.S. metropolitan areas (U.S. Census Bureau, 2018a), which together accounted for 79% of the 2017 electric vehicle market and approximately 55% of the nation’s population. To summarize the work, we present figures on electric vehicle market data and several underlying policy factors and statistically assess the relationships with a stepwise multiple linear regression analysis.

II. DATA COLLECTION ON ELECTRIC VEHICLE PROMOTION ACTIVITIES

This section catalogues and summarizes data on major state, city, and utility policies and activities that are supporting the purchase and use of electric vehicles across major U.S. metropolitan areas, organized into three broad categories: consumer incentives; charging infrastructure; and planning, policy, and other promotion activities. We collected information on dozens of promotion actions that were in place in 2017. When possible, we quantified the applicable data—for example, estimating the average value of consumer financial incentives and counts of charging infrastructure. Recurring consumer benefits such as HOV access and parking incentives were analyzed over a six-year ownership period, based on how long vehicles are typically owned or their financing terms. For discrete qualitative actions, such as electric vehicle outreach events, we more simply catalogued the metropolitan areas in which the given actions or policies were implemented in 2017. The approach follows that of our four previous papers (most recently Slowik & Lutsey, 2017) while accounting for the promotion actions that were under way in 2017. The Annex includes a summary list of the 40 actions and tangible examples of metropolitan areas with those actions in place. The actions, and their implementation across the 50 most populous metropolitan areas, are summarized below.

CONSUMER INCENTIVES

Consumer incentives—including purchase, operation, parking, and HOV lane access incentives—are in place in many states and metropolitan areas. Incentives help to overcome key cost and convenience barriers and give impetus to the early electric vehicle market while technology costs fall and consumers become familiar with the technology. Numerous studies have found that purchase and other consumer incentives are linked with electric vehicle uptake (e.g., Jin, Searle, & Lutsey, 2014; Lutsey et al., 2015; Lutsey, Slowik, & Jin, 2016; Tal & Nicholas, 2016; Vergis & Chen, 2014; Yang et al., 2016; Zhou et al., 2016, 2017).

Purchase incentives. State and federal incentives have been major components of electric vehicle public policies in the United States. The federal government provides up to \$7,500 in income tax credits for the purchase or lease of electric vehicles. This incentive applies uniformly across the metropolitan areas and is not included in our evaluation. State incentives such as rebates, tax credits, or substantial tax exemptions were available in 19 of the 50 metropolitan areas in this study. The value of incentives ranges from \$1,750 (Pennsylvania) to as much as \$5,000 (Colorado). New York began its state rebate program for up to \$2,000 in March 2017. Oregon established a rebate program in 2017 that launched in 2018 and is therefore excluded from our 2017 market analysis. Utah's rebate program expired in 2016 and is not included here. To expand the market to lower-income buyers, California and Oregon provide increased rebates for low- to moderate-income residents, increasing the standard value by \$2,000 and \$2,500, respectively. We do not include the increased rebate values in our quantification of incentives but note for context that these rebates in California amount to about 9% of all rebates—and about 16% of all rebate funding—applied for in 2017 (CSE, 2018).

Purchase incentives from local governments are less common and typically are of lesser value than state incentives. Riverside provides a \$500 rebate, and exemptions from local taxes are available in Seattle. Averaging across the 19 areas that offered incentives, the average value was approximately \$2,300 for BEVs and \$1,800 for PHEVs. Our estimates include a population-based weighting of state incentives for the metropolitan areas that span multiple states.

Vehicle operation incentives. Additional incentives are sometimes available after the initial purchase or lease of an electric vehicle, such as exemptions from or reductions in state license and registration fees (5 areas) and emissions inspections (23 areas). Vehicle operation incentives tend to be worth approximately \$100 over a six-year ownership period. Arizona has a unique registration exemption program for BEVs that amounts to approximately \$1,100.

Some states have implemented annual fees for electric vehicles, resulting in a disincentive in 12 metropolitan areas: Colorado (Denver), Georgia (Atlanta), Michigan (Detroit), Missouri (Kansas City, St. Louis), North Carolina (Charlotte, Raleigh), Tennessee (Memphis, Nashville), Virginia (Richmond, Virginia Beach), and Washington (Seattle). Annual fees typically apply to BEV and PHEV owners, but some states such as North Carolina and Virginia limit the fees to BEV drivers only (U.S. DOE, 2015). Other states are considering similar legislation, in part as a means of offsetting depleting gas tax revenues. Table 1 shows the relative effect of electric vehicle license fees as compared to state annual motor fuel sales tax revenues, based on U.S. Census Bureau (2018b) data. As shown, electric vehicle fees on average account for far less than 0.1% of annual motor fuel sales tax revenues; such fees have a very small effect on state fuel tax revenue. Research has concluded that improved vehicle efficiency has had a much greater effect on depleting transportation budgets than electric vehicles (Vermont Agency of Transportation, 2016). This dynamic is likely to continue for several years to come (NRC, 2015).

Table 1. Annual fees for electric vehicles relative to state motor fuel sales tax.

State	Motor fuel sales tax revenue in 2016 (million)	2017 electric vehicle fee (per vehicle)	Approximate annual revenue from electric vehicle fee (million)	Electric fee revenue as percent of annual motor fuel sales tax revenue
Colorado	\$667	\$50	\$0.21	0.031%
Georgia	\$1,655	\$200	\$0.51	0.031%
Michigan	\$1,029	\$135	\$0.55	0.053%
Missouri	\$717	\$75	\$0.08	0.012%
North Carolina	\$1,936	\$100	\$0.21	0.011%
Tennessee	\$898	\$100	\$0.10	0.011%
Utah	\$420	\$44	\$0.05	0.012%
Virginia	\$896	\$64	\$0.19	0.021%
Washington	\$1,458	\$150	\$1.07	0.073%

Parking incentives. Various state and local electric vehicle parking policies that provide benefits to electric vehicle drivers exist in 14 of the metropolitan areas in this study. Nevada and Hawaii offer free parking for electric vehicles at eligible metered parking locations. Cincinnati, Salt Lake City, and San Jose provide free parking at city parking meters and participating garage lots. Eligibility varies across programs; for example, Cincinnati's program only includes BEVs, whereas in Salt Lake City, free parking is available for vehicles with a city-rated fuel economy above 41 miles per gallon. Vehicles with the Clean Air Permit in San Jose are eligible for free parking at all city parking meters and a few parking garages that typically cost \$100 per month. Applying our previous methodology (Jin et al., 2014), we estimate that the six-year value of parking incentives ranges from about \$300 in Cincinnati to about \$600 in Las Vegas. Nashville, Orlando, and Sacramento also provide local parking incentives; however, these programs are relatively limited in number and availability and are therefore not quantified here.

Other local parking actions include policies that require new designated parking spaces for electric vehicles and increase their number over time. New York City requires 25% of new spaces to be electric vehicle-ready, meaning that parking facilities must be equipped with wiring and panel capacity to supply charging. Such actions help to provide additional perks to drivers, raise overall public awareness, and avoid costly future building retrofits. Several governments impose penalties to discourage gasoline car drivers from parking in designated spaces.

High-occupancy vehicle (HOV) lane access. Eighteen of the 50 metropolitan areas allow single-occupant electric vehicles to use HOV lanes. We apply our previous methodology for the value of HOV lane access, based on our approximations of HOV lane-miles and relative level of congestion in each metropolitan area that allows single-occupant electric vehicles to use the lanes (see Slowik & Lutsey, 2017). We estimate that areas where HOV lanes have the highest six-year ownership value are San Jose, Los Angeles, San Francisco, Nashville, and Raleigh (ranging from \$3,350 in San Jose to \$1,950 in Raleigh).

CHARGING INFRASTRUCTURE

An expanded charging infrastructure network, including home, workplace, and public locations, can increase driver confidence in the vehicle's range, extend operating functionality, and increase visibility and public awareness of the technology. Several studies find that workplace and public charging infrastructure are statistically linked with electric vehicle uptake (Hall, Cui, & Lutsey, 2017; Hall & Lutsey, 2017a; Slowik & Lutsey, 2017; Zhou et al., 2017). In California, nearly half of electric vehicle drivers report having access to charging at work (CARB, 2017a).

Government, utility, and industry stakeholders are increasing the charging infrastructure network in multiple ways. Government support includes direct deployment, financial incentives, expediting permitting and installation processes, and adopting electric vehicle-ready building codes. Utility actions include direct installation and financial incentives. Multiple automakers including BMW, Nissan, Tesla, and Volkswagen, as well as partner equipment providers such as Electrify America, EVgo, and ChargePoint, are also investing in charging infrastructure to support greater adoption of electric vehicles.

We update our analysis to use data from PlugShare on public and workplace charging infrastructure in 2017. The PlugShare data are based on user-updated charge point information and include detailed categorization of the charging facilities by type and location. Our previous infrastructure estimates were based on data from the U.S. DOE Alternative Fuels Data Center (AFDC) and U.S. DOE Workplace Charging Challenge. The PlugShare data include about 10% more public charge points than the AFDC data. We analyzed the PlugShare data and organized the many charger categories into "public" and "workplace" groups. When there was ambiguity in the data nomenclature, such as chargers with "restricted access," we categorized those that are likely primarily workplace chargers as "workplace" (e.g., corporations and office buildings), and categorized others as "public" (e.g., hotels and hospitals). Note that we included "school/university" chargers in the "workplace" group, as these locations are often large employers where many people commute and vehicles have long dwell times similar to those parked at office buildings.

Figure 2, based on data from PlugShare, shows the numbers of public DC fast charge points (including CHAdeMO, SAE Combo, and Tesla), public Level 2 charge points, and workplace charge points per million population in the 50 most populous metropolitan areas. This provides a simple illustration of how much infrastructure has been built and

We point out several major changes from 2016 to 2017. Overall, the national electric vehicle market increased approximately 29%. In terms of number of electric vehicle registrations, the three areas with the largest annual increases were Los Angeles, San Francisco, and New York City. In addition, new electric vehicle registrations jumped by more than 1,000 units in Boston, Chicago, Riverside, Sacramento, San Diego, San Jose, and Seattle as compared to 2016. In terms of percent growth, Buffalo stands out with 91% growth in new electric vehicle registrations from 2016 to 2017. Boston, Denver, Virginia Beach, and Hartford saw between 60% and 77% year-over-year growth, and Baltimore and Sacramento grew by more than 50%. Year-over-year growth was 40% or greater in 12 of the 50 most populous metropolitan areas. The eastern ZEV markets of Baltimore, Boston, Buffalo, Hartford, New York, and Providence each saw 35% to 91% growth. There were also many smaller cities with high percentage increases between 2016 and 2017. Many high-growth areas were associated with new models, incentives, local actions, and additional charging, which are analyzed below.

In the opposite direction, several areas experienced decreases in electric vehicle registrations in 2017. Of the 50 most populous areas, Detroit experienced the greatest decrease; other declining markets were Atlanta, Miami, Indianapolis, Nashville, Memphis, and Salt Lake City. As shown in Table 3, each of the areas with a decrease in electric vehicle registrations had no consumer purchase incentives in place in 2017. Three of the markets had consumer incentives in 2016 that were no longer available in 2017. Five of the seven areas had annual electric vehicle fees in place (up from two areas in 2016), making it less affordable to drive electric in these areas. Indianapolis was the only case among these declining markets where there was neither an annual fee nor the removal of a substantial consumer incentive, but there is an annual fee of \$150 that goes into effect in Indiana in 2018. Legislators in Utah are considering increasing the annual electric vehicle fee from \$44 to more than \$200.

Table 3. Change in electric vehicle registrations, consumer purchase incentive, and annual electric vehicle fee for major metropolitan areas with decreased electric vehicle registrations from 2016 to 2017.

Metropolitan area	Change in electric vehicle registrations	Consumer purchase incentive		Annual electric vehicle fee	
		2016	2017	2016	2017
Detroit	-35%	\$0	\$0	\$0	\$135
Nashville	-16%	\$2,500	\$0	\$0	\$100
Indianapolis	-13%	\$0	\$0	\$0	\$0
Memphis	-12%	\$2,500	\$0	\$0	\$100
Miami	-5%	\$0	\$0	\$0	\$0
Atlanta	-5%	\$0	\$0	\$200	\$200
Salt Lake City	-3%	\$1,000	\$0	\$44	\$44

Red arrow indicates that the electric vehicle value proposition became less attractive from 2016 to 2017; orange arrow indicates no change from 2016 to 2017.

Although this paper is focused on the most populous metropolitan areas, the Figure 3 map above also reveals other relatively high electric vehicle share areas across the smaller metropolitan areas, as defined by the U.S. Office of Management and Budget (see U.S. Census Bureau, 2018a). Several of the smaller markets with the highest regional electric vehicle shares were in Colorado, Connecticut, Hawaii, Massachusetts, Michigan,



CALIFORNIA'S FOURTH
**CLIMATE CHANGE
ASSESSMENT**

Statewide Summary Report



Coordinating Agencies:

(Page 294 of Total)



JA283



CALIFORNIA'S FOURTH CLIMATE CHANGE ASSESSMENT



Introduction

California is one of the most “climate-challenged” regions of North America and must actively plan and implement strategies to prepare for and adapt to extreme events and shifts in previously “normal” averages (Overpeck et al., 2013; Pierce et al., 2018). Currently, temperatures are warming, heat waves are more frequent, and precipitation has become increasingly variable. California has experienced a succession of dry spells, and with warmer conditions the impacts of these droughts have increased (OEHHA, 2018).

Observations from across the state are confirming these changes. Peak runoff in the Sacramento River occurs nearly a month earlier now than in the first half of the last century, glaciers in the Sierra Nevada have lost an average of 70 percent of their area since the start of the 20th century, and birds are wintering further north and closer to the coast (OEHHA, 2018). The recent 2012-2016 drought was exacerbated by unusual warmth (Williams, Seager, et al., 2015), and disproportionately low Sierra Nevada snowpack levels (Dettinger & Anderson, 2015). This drought has been described as a harbinger of projected dry spells in future decades, whose impacts will likely be worsened by increased heat (Mann & Gleick, 2015). A very wet winter in 2016-2017 followed this drought, a further indication of potential continued climate volatility in the future (Berg & Hall, 2015; Polade, et al., 2017; Swain et al., 2018).

These changes in the state’s physical climate will have effects on all parts of California’s society. The changes vary between regions in California, but every region is seeing and will continue to see effects from climate change (please see the Regional Reports for regionally specific information). Increasing temperatures and rising sea-levels will have direct impacts on public health and infrastructure. Drought, coastal and inland flooding, and wildfire will continue to affect people’s livelihoods and local economies. Changing weather patterns and more extreme conditions will impact tourism and rural economies in California, along with changes to agriculture and crops, which are a critical backbone of California’s economic success. There will also be negative impacts to California’s ecosystems, both on land and in the ocean, leading to local extinctions, migrations, and management challenges. Due to these projected impacts, California must continue to evaluate climate impacts as well as to plan for adaptation and resilience.

California’s Climate Change Assessment

Science and research investment has been an integral part of California’s approach and policies to mitigate and adapt to climate change for the past 12 years (Franco et al., 2008). Since 2006, the State has undertaken four comprehensive climate change assessments, designed to assess the impacts and risks from climate change and to identify potential solutions to inform policy actions (Table 1). Each of the four assessments has focused on a specific area of inquiry and has been linked to specific policy drivers, and in some instances, to specific policy outcomes.

California’s climate change assessments are a regionally-focused example of a regular series of broader assessments, including the U.S. National Climate Assessment (NCA) and global assessments from the Intergovernmental Panel on Climate Change (IPCC). These assessments estimate climate change impacts under different future emission scenarios using a set of global climate models (GCMs). While the IPCC assessments analyze impacts at a global scale, the NCA and California assessments share approaches to downscaling climate model outputs to produce projections relevant on a regional scale. The California Climate Change Assessment goes further by including a set of state-

South Coast Air Quality Management District
Comments on National Highway Traffic Safety Administration (NHTSA)
“SAFE” Proposal Draft EIS

I. Introduction

The South Coast Air Quality Management District (SCAQMD) staff appreciates the opportunity to provide comments on NHTSA’s Draft Environmental Impact Statement (EIS) for the proposed changes to fuel efficiency standards for passenger vehicles and light duty trucks.

The SCAQMD primarily encompasses the South Coast Air Basin, which includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties.¹ It has a population of over 16 million.² The South Coast Air Basin is designated as “extreme” under the Clean Air Act for ozone, and has the worst air pollution in the country for ozone³ despite decades of implementing the nation’s most stringent air pollution controls, as recognized by EPA.⁴ The South Coast Air Basin also is designated as “serious” and has the nation’s second-worst pollution levels for particulate matter less than 2.5 microns in diameter.⁵ The SCAQMD also includes the Coachella Valley, which is a portion of Riverside County including the Palm Springs area and stretching to the northern end of the Salton Sea. The Coachella Valley area is designated “severe” for ozone and “serious” for PM₁₀.⁶

The SCAQMD has procedural standing under the National Environmental Policy Act (NEPA) to challenge a defective EIS. It also has standing to challenge the proposed rule because, if adopted, it would make it more difficult for SCAQMD to adopt and implement an approvable state implementation plan (SIP) to achieve federal clean air standards. *Nat’l Ass’n. of Clean Air Agencies v. EPA*, 489 F.3d, 1221, 1227-28 (D.C. Cir. 2007); *W.Va. v. EPA*, 362 F.3d 861, 868 (D.C. Cir. 2004). In this case, NHTSA admits that its proposal will increase PM_{2.5} and NO_x levels, thus making it more difficult to attain PM_{2.5} and ozone standards. In order to attain the federal clean air standards for ozone, SCAQMD needs every possible reduction of NO_x emissions, going far beyond the reductions from currently identified specific federal, state and local rules.⁷

¹ SCAQMD, “2016 Air Quality Management Plan,” p. ES-1, <https://www.aqmd.gov/home/air-quality/clean-air-plans/air-quality-mgt-plan/final-2016-aqmp>.

² www.aqmd.gov/nav/about

³ 2016 AQMP, p. ES-2, Table ES-1

⁴ 77 Fed. Reg. 12674, 12686, col. 3 (Mar. 1, 2012).

⁵ 2016 AQMP, p. ES-2, Table ES-1

⁶ 2016 AQMP, p. 7-1.

⁷ The SCAQMD must reduce NO_x emissions by 45% by 2023 and 55% by 2031 beyond what will occur with adopted rules. 2016 AQMP, p. 4-2. By 2023, almost all of the expected NO_x emission reductions from mobile sources must come from not-yet-identified measures for “further deployment of cleaner technologies.” CAA § 182(e)(5); 2016 AQMP Table 4-5, p. 4-35.

Importantly, SCAQMD believes that comments on the Draft EIS are integrally related to comments on the rule proposal itself so that NHTSA must allow a comment period on the Draft EIS that at least matches the comment period on the proposed rule, which ends on October 24, 2018. In addition, SCAQMD, along with many others, has requested an extension of time to comment on the proposed rule and Draft EIS for a total of at least 120 days from publication in the Federal Register on August 27, 2018, which would mean a comment period ending no earlier than December 26, 2018. We strongly believe that the massive nature of the rulemaking record requires an extension of time to provide adequate comment. And this is especially true since many of the conclusions in the Draft EIS rely on analysis in the Notice of Proposed Rulemaking (NPRM) or Regulatory Impact Analysis (RIA). (See for example, Draft EIS p. 4-27, which relies on the RIA for certain aspects of benefits of reducing PM_{2.5}).

Given the truncated comment period provided for the Draft EIS, SCAQMD's comments focus on the alternatives analysis, which is fatally deficient. If a longer comment period were available, we would provide more detailed comments on other critical aspects of the Draft EIS, such as the errors in the air quality analysis which we address here only to a limited extent.

II. The Alternatives Analysis is Defective Because it Fails to Consider Any Alternative that Would Preserve the California Waiver

The alternatives analysis is the “heart of the environmental impact statement.” 40 C.F.R. § 1502.14. The EIS must “[r]igorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.” 40 C.F.R. §1502.14(a). The Draft EIS is glaringly deficient because it fails to analyze any alternative which would keep the California waiver in place for the existing standards, and thus allow Section 177 States to also enforce the California standards.⁸ Nor does the analysis even explain why this alternative was rejected.

The “agency must look at every reasonable alternative within the range dictated by the nature and scope of the proposal. *See Idaho Conservation League*, 956 F.2d at 1508. The existence of reasonable but unexamined alternatives renders an EIS inadequate. *See Alaska Wilderness Recreation and Tourism Ass’n.*, 67 F.3d at 729.” *Friends of Southeast’s Future v. Morrison*, 153 F.3d 1059, 1065 (9th Cir. 1998).

As we will explain more fully in our comments on the NPRM, SCAQMD submits that NHTSA/EPA have no legal authority to withdraw the California waiver for the Advanced Clean Cars program and the Zero-Emission Vehicles requirements. Therefore, the EIS must include an alternative which keeps the California waiver in place. Even if there were legal authority to withdraw the waiver, EPA and NHTSA seek comment on whether to withdraw the waiver. The agency must not be hamstrung by its NEPA analysis and prevented from adopting an alternative which preserves the waiver. The agency must analyze an alternative which preserves the waiver because it is a reasonable one within the range of action contemplated by the proposal. *Friends of Southeast’s Future*, *supra*, 153 F.3d at 1065. Moreover, NHTSA may not foreclose consideration of an alternative which preserves the waiver by saying that this is not one of the alternatives it wishes to pursue. “An agency will not be permitted to narrow the objectives of an

⁸ Draft EIS, p. 2-4

action artificially and thereby circumvent the requirement that relevant alternatives be considered.” *City of New York v. U.S. Dept. of Transportation*, 715 F.2d 732, 743 (2d Cir. 1983). NHTSA’s failure to analyze an alternative that preserves the waiver renders the EIS fatally defective because it does not analyze a reasonable alternative within the range contemplated by the proposal.

III. There is No Legal Authority to Withdraw the California Waiver for Requirements that Reduce Criteria Pollutants

NHTSA and EPA have claimed that the California waiver should be withdrawn because the GHG and ZEV standards are preempted by the EPCA, and because these California standards address environmental problems (climate change) that are not particular or unique to California, and thus are not needed to meet compelling and extraordinary conditions.⁹ We disagree with these arguments. However, other commenters will undoubtedly address these issues. We focus on what may be the agencies’ unlawful attempt to withdraw the waiver for requirements that affect criteria pollutants. It is vital to clarify whether EPA proposes something other than the fair, necessary reading that EPA has only proposed to withdraw the GHG and ZEV standards in the 2013 waiver, and not the 2013 waiver in its entirety. To the extent EPA considers itself to have the flexibility to do more from its proposal, it cannot lawfully do so. The invitation of comments in FN 551 is not remotely adequate for EPA to alter and depart from a defined, proposed action to only withdraw the past-granted 2013 waiver as it pertains to the GHG and ZEV components of that waiver. Neither of the above-cited arguments in support of withdrawing the waiver applies to either the ZEV standard or the Advanced Clean Cars program. Both of those programs directly reduce criteria pollutants, and therefore they directly address California’s continuing need for emission standards to meet compelling and extraordinary conditions (the worst ozone in the nation). Furthermore, they are within the clear intent of Clean Air Act Section 209(b) allowing California to set standards for criteria pollutants, and are thus not affected by EPCA.¹⁰

Even more alarmingly, the agencies appear to contend that all light-duty ZEV standards are preempted by EPCA, even if they are directed at criteria pollutants.¹¹ The SCAQMD must obtain an additional 7 tons per day of emissions reductions from light duty vehicles by 2023.¹² This can only occur through very great penetration of zero emission vehicles into the market. If ZEV standards cannot be imposed, SCAQMD will be unable to attain the federal clean air standards for ozone. It is undeniable that the Advanced Clean Cars program and the Zero

⁹ 83 Fed. Reg. 42986 at 43233 – 43240, 43249 (Aug. 27, 2018)

¹⁰ The NPRM asserts that the ZEV mandate does not have any criteria pollutant benefits. 83 Fed. Reg. at 43247 col. 3, 43248 col. 1. However, the cited CARB document only notes that manufacturers would have had to meet similar emission reductions under the Advanced Clean Cars program even without the ZEV mandate. *Id.* This is not the same as saying the ZEV program has no criteria pollutant benefits—especially since EPA also proposes to abolish the Advanced Clean Cars program. Together, these programs deliver significant criteria pollutant benefits.

¹¹ 83 Fed. Reg. 43234 col. 3.

¹² 2016 AQMP, p. 4-35



Public Health

September 24, 2018

Docket Management Facility, M-30
U.S. Department of Transportation
West Building, Ground Floor, Room W12-140
1200 New Jersey Avenue, SE
Washington, DC 20590.

Re: Draft Environmental Impact Statement for, "The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021–2026 Passenger Cars and Light Trucks," July 2018, Docket No. NHTSA-2017-0069; Submitted Electronically on September 24, 2018.

Dear Colleagues:

We appreciate the opportunity to comment on the National Highway Traffic Safety Administration's (NHTSA) Draft Environmental Impact Statement (DEIS) for, "The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021–2026 Passenger Cars and Light Trucks." This DEIS analyzes and discloses the potential environmental impacts of the proposed revisions to the Corporate Average Fuel Economy (CAFE) standards for passenger cars and light trucks (light-duty vehicles). The DEIS presents nine alternatives that would revise the model year (MY) 2021-2016 CAFE standards, all of which, with the exception of the No Action Alternative, are weaker than current federal standards. Although chosen by NHTSA as the Preferred Alternative, Alternative 1 is the least protective of public health and the environment.

To protect public health and the environment in Colorado and beyond, vehicle emissions must be reduced. The proposed rollback of the federal emission standards would do the opposite. Colorado is currently considering increased protection of air quality by adopting California's low emission vehicle (LEV) standards; however, if the Environmental Protection Agency (EPA) withdraws California's waiver, Colorado would not be allowed to take this health and environment-saving step to create our own program. Finalizing the proposed NHTSA and EPA rulemaking would mean less stringent vehicle standards and continued degradation of air quality for the entire country.

Choosing the No Action Alternative (e.g. no change to existing federal standards for light-duty vehicles) presented in this DEIS would keep the country moving towards decreasing carbon dioxide (CO₂) and criteria pollutant emissions from vehicles. Under any of the other proposed Alternatives, there would be increased harm to public health and the environment, as the DEIS analysis illustrates.

Under the Clean Air Act (CAA), the U.S. Environmental Protection Agency (EPA) has the authority to establish emission standards for any emissions from new motor vehicles that "cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare."¹ Since 2012, EPA's light-duty vehicle greenhouse gas (GHG) standards have been aligned with NHTSA's CAFE standards, as well as California's Advanced Clean Car Standards, creating essentially one national clean car program.

¹ CAA, Section 7521. "Emission standards for new motor vehicles or new motor vehicle engines."



Contrary to the claims of the most recent determinations, the previous Administration’s decision to maintain the current GHG emissions standards for MY 2022-2025 vehicles was made after eight years of research, hundreds of reports, and many stakeholder meetings. It found that, “...automakers are well-positioned to meet the standards at lower costs than previously estimated.”² Highlights from the final determination include:

- “Automakers have a wide range of technology pathways available to meet the MY2022-2025 standards, at slightly lower per-vehicle costs than previously predicted. The standards are achievable with very low penetration of strong hybrids, electric vehicles and plug-in hybrid electric vehicles, consistent with the findings of a comprehensive 2015 National Academy of Sciences study.”
- “The standards will save consumers money, significantly reduce GHG emissions and fuel consumption, and provide benefits to the health and welfare of Americans.”
- “Automakers have outperformed the standards for the first four years of the program (MY2012-2015) and manufacturers are adopting fuel efficient technologies at unprecedented rates, all while vehicle sales have increased for 7 consecutive years.”³

A poll released by the American Lung Association on March 27, 2018, shows that seven in ten voters want the EPA to leave the existing clean car standards in place. In this poll, this perspective was popular across party lines, with a majority of Democrats and Independents and a plurality of Republicans voting in support of the standards.⁴

I. The Preferred Alternative will result in decreased fuel economy and increased emissions.

The No Action Alternative (referred to as Alternative 0 in some tables) would not revise the current federal light-duty vehicle standards. Under current standards, the required miles per gallon (mpg) for MY 2021 vehicles would be 39.0 and would increase each year through MY 2026 to 46.8 mpg. Alternative 1 (NHTSA’s Preferred Alternative) would not increase the fuel economy beyond MY 2021, when the required mpg would be 36.9. Of the eight Alternatives, Alternative 1 would result in the largest increases in CO₂ and most of the criteria pollutants, for an overall negative impact on public health and the environment. Alternatives 2 through 8 would increase fuel economy from 0.5-3% for MY 2021-2026. All Alternatives would require lower fuel economy than the existing federal standards, resulting in increased fuel consumption under all scenarios (see DEIS, S-6, Table S-2).

Despite Alternative 1 being described by NHTSA as, “the least stringent and highest fuel use action alternative,”⁵ it is the chosen Alternative. The modeling results for the proposal call the analysis into question because of the predicted decreases in some pollutants, compared to the No Action Alternative, even with decreased fuel economy. NHTSA explains that these decreases are due to the rebound effect, where improved fuel economy would reduce the cost of driving, and therefore lead to additional driving.⁶ The DEIS shows modeling results for the years 2025, 2035, and 2050. Decreases are projected for carbon monoxide (CO), nitrogen oxides (NO_x) (for 2025 and 2035, but increases are projected by 2050), and volatile organic compounds (VOCs) for 2025 (while increases are projected for 2035 and 2050).⁷ EPA commented on the drafts of both the Regulatory Impact Analysis (RIA) and the preamble to the proposed rule that NHTSA was using a higher than appropriate percentage for the rebound effect. Therefore, the amount of decrease in emissions reflected in the DEIS is likely over-predicted.

² <https://www.epa.gov/regulations-emissions-vehicles-and-engines/midterm-evaluation-light-duty-vehicle-greenhouse-gas#final>

³ Ibid.

⁴ ALA, <http://www.lung.org/about-us/media/press-releases/new-poll-voters-support-fuel-efficiency.html>

⁵ NHTSA, Draft Environmental Impact Statement for The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021–2026 Passenger Cars and Light Trucks, July 2018, Docket No. NHTSA-2017-0069 (DEIS), at 4-35.

⁶ DEIS at 4-29

⁷ DEIS at 4-34 Table 4.2.1-3.

Increased emissions are predicted for NO_x under Alternatives 1 through 8, with the highest emissions under NHTSA's Preferred Alternative. Increased emissions in 2050 would be 7,911 tons per year. Increases in particulate matter (PM_{2.5}) emissions are predicted for 2025, 2035, and 2050 (506 tons per year by 2050), increased sulfur dioxide (SO₂) emissions are predicted for 2025, 2035, and 2050 (10,863 tons per year by 2050), and increased VOC emissions are predicted for 2035 and 2050 (23,442 tons per year by 2050).⁸

CO₂ emissions would also increase under Alternatives 1 through 8, with the highest emissions from the Preferred Alternative. In the US, the transportation sector accounts for 34% of CO₂ emissions; of that portion, 59% of the emissions come from passenger cars and light trucks.⁹ Under the Preferred Alternative, CO₂ emissions would increase by 9% through 2100.¹⁰ Any action, other than the No Action Alternative would cause an increase in both criteria pollutant and CO₂ emissions and would harm the health of people and the environment.

II. The Preferred Alternative would significantly increase emissions in Colorado

The increased emissions in Colorado that would result from the proposed Preferred Alternative are significant. The increases in carbon dioxide equivalent (CO₂e) would be nearly 2.6 million tons per year by 2030 and over 4.5 million tons per year by 2040.¹¹ To provide a sense of the scale of these impacts, the biggest current effort to reduce emissions in Colorado is Xcel Energy's plan to shut down more coal-fired power plants and replace them with wind and solar. Xcel's plan will increase its share of renewable generation from 29% to 55% of its total energy mix by 2026, a shift that would reduce emissions by 4.1 million tons per year.¹² Rolling back the clean car standards would reverse these advances, increasing ozone-forming pollutants, such as VOCs and NO_x, as well as fine particulates (PM_{2.5}), and sulfur oxides (SO_x).

High ozone levels in the Denver Metro/North-Front Range (DMNFR) ozone nonattainment area have been a problem for many years. Subverting modern clean car standards would further exacerbate the problem. In the DMNFR 31% of NO_x and 16% of VOC emissions are due to on-road vehicle pollution.¹³ Vehicle emissions are one of the two largest contributors to ozone formation (as shown by air quality modeling).

In 2017, 10 Colorado counties (Adams, Arapahoe, Boulder, Clear Creek, Douglas, El Paso, Jefferson, Larimer, Rio Blanco, and Weld) received an "F" grade, and two counties (Denver and La Plata) received "D" grades for high ozone days in the American Lung Association's (ALA) State of the Air report. And the ALA rated Denver as the 11th most polluted city in the nation for ozone levels in 2017.¹⁴ After repeatedly exceeding both the 2008 and the 2015 ozone standards this summer at multiple monitors, the DMNFR continues to violate the standards and is faced with a reclassification to serious nonattainment after 2019

⁸ DEIS at 4-34, Table 4.2.1-3.

⁹ DEIS at S-13, Figure S-3.

¹⁰ DEIS at S-14.

¹¹ Rykowski, Richard, "The Benefits of Protective Advanced Clean Car Standards in Colorado: An Examination of Cost Savings, Greenhouse Gas Emission Reductions, and Health Outcomes," commissioned by Environmental Defense Fund, May 2018, at 28, https://www.edf.org/sites/default/files/content/The_Benefits_of_Protective_Clean_Car_Standards_CO.pdf

¹² Xcel Energy, <http://jeffcoedc.org/wp-content/uploads/2017/11/11-Colorado-Energy-Plan-Fact-Sheet.pdf>

¹³ Moderate Area Ozone State Implementation Plan for the Denver Metro and North Front Range Nonattainment Area, at ES-3, https://raqc.egnyte.com/dl/q5zyuX9QC1/FinalModerateOzoneSIP_2016-11-29.pdf.

¹⁴ American Lung Association, State of the Air 2017, <http://www.lung.org/assets/documents/healthy-air/state-of-the-air/state-of-the-air-2017.pdf>.

(the highest allowable 4th maximum 8-hour average value for 2019 is as low as 55 parts per billion [ppb] at the highest recording monitor in the area).

Because the federal vehicle emission standards are incorporated in the ozone State Implementation Plan (SIP) for the DMNFR, a rollback of these standards would result in further increased emissions in this nonattainment area. If the federal rollback is finalized, the ozone SIP would need to be revised to reflect higher vehicle emissions in the future from those already included in the SIP's emissions projections. This action would be absurd for an area that should be classified as serious nonattainment and is not achieving pollution reduction goals. If California's waiver is revoked as a result of this proposed action, Colorado's hands will be tied – it will not be able to address pollution issues through adoption of California's or its own standards.

III. The proposed rollback will harm the health of Colorado residents

This rollback will lead to poor air quality, subsequently causing increased illness and premature death due to cardiovascular and respiratory disease. The DEIS states that, "Adverse health impacts would increase nationwide under each of the Action Alternatives compared to the No Action Alternative."¹⁵ Table 4.2.3-1 shows that all of the Alternatives would result in increased premature mortality, increased acute bronchitis, increased "work-loss days," and increased respiratory-related emergency room visits, **but NHTSA's Preferred Alternative would result in the highest increases in these negative health impacts.** In contrast, The No Action Alternative's increasingly stringent emission standards requirement would minimize adverse health effects.¹⁶

The adverse effects of vehicle pollution on everyone who breathes – especially on the old, the young, and those disadvantaged by health or socioeconomic conditions – is well-documented. Near-roadway air pollution disproportionately impacts low-income communities and communities of color, children, older adults, people with preexisting cardiopulmonary disease, and children whose homes or schools are located near highways. The EPA states that, "People who live, work, or attend school near major roads appear to have an increased incidence and severity of health problems associated with air pollution exposures related to roadway traffic."¹⁷ Weakening of federal clean car standards would exacerbate these adverse effects.

Research by the Health Effects Institute concluded there is sufficient evidence pointing to the relationship between exposure to traffic-related air pollution and the exacerbation of asthma. This research also found, "...suggestive evidence of a causal relationship with onset of childhood asthma, nonasthma respiratory symptoms, impaired lung function, total and cardiovascular mortality, and cardiovascular morbidity..."¹⁸

In addition to near-roadway air pollution, there are impacts from the fuel production process, also called "upstream" emissions. This emission category includes the extraction, refining, and transport of fossil fuels for traditional vehicles. The upstream vehicle-related emissions category also contributes to air quality impacts on public health in Colorado.

III. The proposed rollback will impact climate, leading to extreme heat and natural disasters

Increasing scientific evidence demonstrates that carbon dioxide and other greenhouse gases released into the atmosphere are exerting a profound effect on the earth's climate, such as increasing extreme

¹⁵ DEIS at 4-46.

¹⁶ DEIS at 4-47, Table 4.2.3-1.

¹⁷ EPA, <https://www.epa.gov/mobile-source-pollution/how-mobile-source-pollution-affects-your-health>

¹⁸ Health Effects Institute, Special Report 17, *Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects*, January 2010, Executive Summary at 10.

weather events, changing rainfall and crop productivity patterns, and fueling the migration of infectious diseases. Since 1983, average temperatures in Colorado have risen 2° F and continue to rise.¹⁹ Many Colorado communities are already experiencing the impacts of a warming climate in the form of reduced snowpack, earlier snowmelt, increased risk of high-intensity wildfires and their associated air pollution, extreme weather events, and an increased number of “high heat” days. Climate change will continue to impact the health of those who live, work, and play in Colorado if we fail to minimize greenhouse gas emissions.

There are a myriad of ways in which Coloradans are being impacted now by the health effects of climate change. Poor air quality aggravates cardiovascular, respiratory, and allergy-related illness and leads to: 1) more doctor or hospital visits for asthma caused by more frequent wildfires,²⁰ 2) increased length and severity of allergy seasons,²¹ and 3) higher temperatures, leading to more high ozone days when air quality is poor.²² Climate change also increases the risk of death, physical injury, and exposure, which can result from: 1) increased frequency and intensity of flooding and precipitation events,²³ 2) more intense wildfires that can destroy more homes, and 3) increased frequency and duration of droughts.²⁴ Rising temperatures and recent droughts in the region have killed many trees by drying out soils and enabling outbreaks of forest insects.²⁵ Dry forest conditions have increased the risk of forest fires.

In the coming decades, the changing climate is also likely to decrease water availability and agricultural yields in Colorado, impacting residents and farmers. Children, the elderly, people with weakened immune systems, and residents living in poverty are more vulnerable to heat-related illness. In the Denver area, the annual frequency of 100 degree days increased by more than 250% on average between 1967 and 1999. With continued high levels of greenhouse gas emissions, Denver could experience extreme heat, similar to Tucson, Arizona.²⁶ Climate change is also associated with increased transmission and severity of waterborne and vector-borne diseases, including West Nile virus, Hantavirus, and tick-related diseases.²⁷

In 2017, the Colorado Department of Local Affairs and Denver Public Health and Environment funded analyses of the likely future temperature extremes in Larimer County, Boulder County and Denver.²⁸ The study found that if emissions continue to rise, by mid-century, the temperatures will rise from the historical average of 1-2 days per year over 100 degrees to 7 days per year. By the end of the century, the study estimated that a typical year would have 34 days over 100 degree temperatures, while unusually hot years could have over 70 days of these temperature extremes.²⁹

¹⁹ Western Water Assessment, Cooperative Institute for Research in Environmental Sciences (CIRES), University of Colorado Boulder, Climate Change in Colorado: A Synthesis to Support Water Resource Management and Adaptation, 2014, http://www.colorado.edu/climate/co2014report/Climate_Change_CO_Report_2014_FINAL.pdf

²⁰ https://www3.epa.gov/airnow/wildfire_may2016.pdf

²¹ <http://www.aafa.org/media/Extreme-Allergies-Global-Warming-Report-2010.pdf>

²² U.S. Global Change Research Program, The Impacts of Climate Change, chapter 3, <https://health2016.globalchange.gov/>

²³ <https://nca2014.globalchange.gov/highlights/report-findings/extreme-weather/graphics/observed-us-trends-heavy-precipitation>

²⁴ <https://www.c2es.org/content/drought-and-climate-change/>

²⁵ <https://www.ucsusa.org/sites/default/files/attach/2014/09/Rocky-Mountain-Forests-at-Risk-Full-Report.pdf>

²⁶ The Rocky Mountain Climate Organization, “Future Extreme Heat in the Denver Metro Area: A report to Denver Environmental Health,” June 2017, <http://www.rockymountainclimate.org/images/DenverHeatExtremes.pdf>

²⁷ https://www.niehs.nih.gov/health/materials/a_human_health_perspective_on_climate_change_full_report_508.pdf

²⁸ http://www.rockymountainclimate.org/extremes/extremes_1.htm

²⁹ <http://www.rockymountainclimate.org/images/DenverHeatExtremes.pdf>

IV. Conclusion

Maintaining the current Clean Car Standards (e.g. No Action Alternative) is the simplest and best approach. The stated purpose of the proposed SAFE rule is to adopt emission standards that allow for maximum technological and economic feasibility. The SAFE rule's proposal to freeze current emission standards ignores the current climate of technological innovation and demand for environmental protection that's been demonstrated within the US. Leaving the current rule in effect will satisfy the National Highway Traffic Safety Administration (NHTSA)'s stated aim to achieve maximum feasibility while also staying true to their overall mission to achieve the highest standards of excellence in motor vehicle and highway safety. And in light of the evidence of increased harmful impacts to public health and the environment presented in this DEIS, the No Action Alternative is the only responsible approach.

Thank you for considering our concerns. Please contact Boulder County Public Health Air Quality Specialist Cindy Copeland at ccopeland@bouldercounty.org or 303-441-1242 if you have any questions about this comment.

In health,



Jeffrey J. Zayach, M.S.
Executive Director

Submitted online via <http://www.regulations.gov>

October 16, 2018

U.S. Environmental Protection Agency
Docket ID No. EPA-HQ-OAR-2018-0283
1200 Pennsylvania Ave. NW
Washington, DC 20460

Re: Notice of Proposed Rulemaking for The Safer and Affordable Fuel Efficient Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks, EPA-HQ-OAR-2018-0283

We, Ted Lamm, Ethan N. Elkind, and Daniel A. Farber, submit the following comments regarding the Notice of Proposed Rulemaking for The Safer and Affordable Fuel Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (August 24, 2018), 83 Fed. Reg. 42,986, EPA-HQ-OAR-2018-0283 (the “Rule”). These comments concern the appropriateness of EPA’s proposal in the Rule to reduce Corporate Average Fuel Economy and carbon dioxide (“CO₂”) emissions standards for model year 2021-2026 passenger vehicles and to withdraw the waiver granted under the Clean Air Act to allow California to set more stringent emissions standards.

Mr. Lamm is Research Fellow in the Climate Program at the Center for Law, Energy & the Environment (CLEE) at UC Berkeley School of Law. Mr. Elkind is Director of the Climate Program at CLEE. Professor Farber is Faculty Director of CLEE and Sho Sato Professor of Law at UC Berkeley School of Law.¹ In these capacities, we work extensively with stakeholders throughout California energy and environmental policy, including leaders in the design and implementation of the Zero Emission Vehicle (“ZEV”) Program, the flagship initiative to reduce vehicle emissions of harmful pollutants and CO₂ under California’s Clean Air Act waiver.

EPA should not withdraw California’s Clean Air Act waiver. In nearly a decade of policy research and outreach at CLEE regarding the environmental and economic implications of zero-emission and electric vehicle incentives and mandates under the ZEV Program, we have interacted with automotive industry leaders, regulatory experts across California’s government, and representatives of electrical utilities and local governments from throughout this diverse state. We have conducted multiple stakeholder-driven initiatives on the implications of the ZEV Program and California’s related climate policies for the automobile industry, the electrical grid, the freight system, and more. This research has found not only that the ZEV Program delivers both environmental and economic benefits, but also that both the automobile industry and electric utilities are investing in ZEVs and associated infrastructure in California because of the policy certainty that the ZEV Program represents. Moreover, our research and interactions with both automobile manufacturers and electric utilities and utility regulators confirm that EPA’s statement that the ZEV Program standards should be revoked “because they are technologically infeasible in that they provide insufficient lead time to permit the development of necessary technology, giving appropriate consideration to compliance costs,” 83 Fed. Reg. 43,240, is

¹ Institutional affiliations of Mr. Lamm, Mr. Elkind, and Professor Farber are provided purely for purposes of identification and do not imply any institutional endorsement of the views expressed here.

inaccurate. If EPA were to withdraw California's waiver, as it proposes in the Rule, it would harm the environmental health of millions and the economic competitiveness of the nation's automobile industry.

I. Eliminating the ZEV Program Would Harm the U.S. Automobile Industry.

According to recent estimates by the nonprofit group Veloz, there are over 400,000 electric vehicles on the road in California, out of approximately 900,000 nationwide. By comparison, according to the International Energy Agency, over three million electric vehicles were in circulation at the end of 2017; sales in Europe consistently outpace those in the U.S., while sales in China, the world's fastest growing major automobile market, are more than double those in the U.S.² And while California has recently set an ambitious target of five million electric vehicles on the road by 2030 (*see* Executive Order B-48-18), leading jurisdictions such as the City of London and the nations of China and France are contemplating transitions to exclusively electric or non-gasoline vehicles by 2040. The global automobile future is electric.

U.S. automobile manufacturers are already facing an uphill battle to retain their position of strength in the global market as buyers and governments shift further toward adoption of electric vehicles. As noted above, California is responsible for nearly half of all U.S. electric vehicle sales, even though according to the Federal Highway Administration the state accounts for only 10 percent of vehicles nationwide. Nearly all of the 900,000 nationwide electric vehicle sales, including California's disproportionate share, have occurred since the launch of the ZEV Program. Clearly, the ZEV Program is driving the bulk of the electric vehicle market in the U.S. Meanwhile, Tesla is the only U.S. manufacturer of a worldwide top-10 selling electric vehicle. U.S. manufacturers face a particularly high risk of losing market dominance to Chinese firms, which will take advantage of their home market to support critical research and development as U.S. firms stall due to unsupportive policies.

General Motors CEO Mary Barra has said that GM's "commitment to an all-electric, zero-emissions future is unwavering" but that "innovation alone will not accelerate a zero-emissions future."³ Our work with partners in industry and government has confirmed that a range of stakeholders recognize these parallel points: the future of the U.S. automobile industry will likely rely on its ability to transition to producing electric vehicles, and the industry will not make that transition smoothly without policy support at the state and federal level. The ZEV Program, and the Clean Air Act waiver on which it relies, are an essential ingredient in that broader policy effort. While manufacturers and other stakeholders have emphasized the need for more electric models across different vehicle types and price points, they have indicated that market forces are a greater barrier than the ZEV Program's compliance timelines and costs. Put simply, elimination of the ZEV Program via withdrawal of California's Clean Air Act waiver will harm the nation's automobile industry.

Moreover, withdrawal of the waiver will predictably result in protracted litigation, with the risk of further policy instability down the road. This regulatory uncertainty is particularly

² *See* International Energy Agency, "Global EV Outlook 2018," available at <https://www.iea.org/gevo2018/>.

³ Remarks, CERAWEEK Conference, Houston (March 7, 2018), available at <https://media.gm.com/media/us/en/gm/home.detail.html/content/Pages/news/us/en/2018/mar/0307-barra-speech.html>.

**COMMENTS BY THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
REGARDING PROPOSED ROLLBACK OF FUEL ECONOMY AND GHG STANDARDS
AND WITHDRAWAL OF CALIFORNIA WAIVER, 83 FED. REG. 42986 (AUG. 24, 2018)**

DOCKET ID NOs. EPA-HQ-OAR-2018-0283 / NHTSA-2018-0067 / NHTSA-2017-0069

I. Introduction

On August 24, 2018, the United States Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA) published in the Federal Register (83 Fed. Reg. 42986) a proposed rule to amend existing greenhouse gas (GHG) standards and Corporate Average Fuel Economy (CAFE) augural standards for passenger cars and light trucks, all covering model years 2021 through 2026. EPA proposes to withdraw the January 9, 2013 waiver of preemption for California's Advanced Clean Car (ACC) program, Zero Emissions Vehicle (ZEV) mandate, and GHG) standards that are applicable to model years 2021 through 2025. NHTSA proposes regulatory text to summarize what it terms a "position" or "interpretation" on preemption to be added in an appendix to the parts in the Code of Federal Regulations setting forth the passenger car and light truck CAFE standards. The proposal also invites comment on various aspects of CAFE and vehicular GHG standard program implementation. The South Coast Air Quality Management District (South Coast District or District) provides the following comments on the proposal.¹

II. The Proposal Violates the Clean Air Act, Violates the Administrative Procedure Act, and is Arbitrary, Capricious and Not in Accordance with Law

A. EPA must comply with general conformity requirements.

EPA counts as a federal agency that must comply with general conformity requirements. The proposal leaves unclear whether EPA also determined its actions comply with the general conformity requirements under 40 C.F.R. § 93.150 and general conformity SIP revisions allowed under 40 C.F.R. § 51.851. Unlike DOT, EPA squarely has "continuing program responsibility" over indirect emissions of criteria pollutant emissions from mobiles sources. Thus, even as DOT has argued that the definition for "indirect emissions" is inapplicable to its action, the definition may validly apply to EPA in this proposed action. Without agreeing that projected emissions increases in Appendix A of the DEIS are accurate for any area or time period, the analysis does indicate multiple nonattainment areas will experience increases in criteria pollutant tons per year to warrant a conformity determination. While as a usual matter agencies can permissibly adopt the analysis of another agency, an agency "must make its own conformity determination," 40 C.F.R. 93.154, and it is not clear that EPA can rely on NHTSA's analysis given its dissimilar position in having continuing program responsibility over mobile source emissions.

¹ Submission of these comments does not waive the District's threshold objections to the unreasonably short comment period and the cancellation of the public hearing in Los Angeles. Section IV, *infra*, addresses these and several other fatal procedural errors.

The District does not here argue that EPA must heed requirements of its General Conformity Rule for every rulemaking action relating to emissions.² Instead, the protective requirements of CAA section 176 are specially implicated by the inconsistency of EPA's proposal with already approved implementation plans under CAA section 110. As both NHTSA and EPA must acknowledge, EPA has historically approved ZEV standards into the federally-approved State Implementation Plans for multiple states, including waiver measures that were first made permissibly enforceable in California by the 2013 waiver decision. *See, e.g.*, 81 Fed. Reg. 39424 (June 16, 2016). EPA's proposed action intends to frustrate the legal effectiveness of these approved waiver measures, even as it does not invoke or adhere to the procedures of CAA section 110(k)(6), its one and only plausible authority for doing so.³ In light of CAA section 176, the proposal does not meet EPA's "affirmative responsibility," as a federal agency, to assure that its activity will conform to these implementation plans' purposes in eliminating and reducing air quality violations. EPA does not assure conformity because it does not follow general conformity procedures, and the agency nowhere shows its action will not increase the frequency and severity of violations in nonattainment areas.

Staff of the California Air Resources Board staff have informed South Coast District staff that the "preferred option" in the proposal has an impact scenario of a 1.25 tons per day increase in NOx emissions and a 0.21 tons per day increase in fine particulate matter emissions in 2031. These increases could conceivably be characterized as a small fraction of the emissions inventory, but that is not the applicability test for general conformity. For Clean Air Act attainment planning purposes, as historically demanded by both the South Coast District and EPA in the responsible implementation of Clean Air Act requirements, EPA must recognize that CARB's numbers for waiver measures, whether or not they are federally-approved into the SIP, have credence and must be considered against the conformity rates. To the extent EPA would now try to contend these emissions are not foreseeable or within EPA's practical control, EPA would be taking a technically deficient position that is a radical abdication of what EPA has always demanded for responsible air quality planning. Emissions inventories are essential and compulsory for plans to attain the NAAQS, and EPA must therefore now recognize its proposed action does implicate "indirect emissions" in the meaning of general conformity requirements. Moreover, these increases cannot be considered "de minimis" in the established meaning of the phrase for implementation of the general conformity requirements. These PM2.5 increases in the South Coast Basin are just above the applicable rate for a serious nonattainment area. More strikingly, the NOx emissions alone are more than 40 times the applicable rate for a general conformity determination for an extreme ozone nonattainment area. There is no questioning that elimination of these waiver measures will increase the frequency and severity of violations.⁴

² 40 C.F.R. 93.153(c)(2)(iii) exempts "Rulemaking and policy development and issuance," but this categorical exemption is intended for actions "which would result in no emissions increase or an increase in emissions that is clearly de minimis." The statute governs and the record for the proposed action, on its face, disallows the exemption. In any event, as noted throughout the District's comments, waiver decisions are categorically *not* rulemakings or a policy issuance; the regulatory record for the promulgation of 40 C.F.R. 93.153(c)(2)(iii) nowhere indicates that EPA intended any broader definition for "rulemaking" than that found in the APA.

³ Of course, CAA section 110(k)(5) is utterly inapplicable because that "SIP call" authority can only be used to strengthen implementation plans.

⁴ In fact, the Regulatory Impact Analysis for the 2012 rulemaking was informed by CMAQ modeling results that showed benefits of 0.13 to 0.23 ppb in the ozone design values for counties within the South Coast Basin. *See* EPA-

Accordingly, EPA is required to make a general conformity determination, at a minimum, for the South Coast Basin and potentially for other parts of the country as demanded by CAA section 176.

B. The proposal is arbitrary and unreasoned in its discussion of NHTSA and EPA authority to consider matters of “safety.”

EPA and NHTSA should clarify that they arrived at the proposal’s name, the “SAFE Vehicles Rule,” for evident rhetorical reasons. This would allay confusion that may be caused by the incidental fact that “safety” appears in NHTSA’s agency name (and that of its precursor, the National Highway Safety Bureau). EPCA’s statutory objective is not “safety,” and it should not be conflated with NHTSA’s strictly unrelated legal and historical authority to promulgate vehicle safety standards. NHTSA’s responsibilities under the National Traffic and Motor Vehicle Safety Act date to the 1960s and thereby well predate EPCA. NHTSA’s responsibilities to administer EPCA were not even conferred on NHTSA by statute. Instead, NHTSA only administers the CAFE program based on a regulatory delegation from the Department of Transportation. *See* 49 C.F.R. 1.94 and 1.95. There is nothing in NHTSA’s separate, happenstance authority to set safety standards for cars and trucks that enlarges NHTSA’s discretion to consider safety matters in the implementation of EPCA.

Instead, through EISA’s direction for attribute-based standards, Congress has circumscribed NHTSA’s authority to consider safety when setting fuel economy standards. As the proposal admits, a key Congressional purpose for the attribute-based standards was to reduce the incentive for manufacturers to respond to CAFE standards by reducing vehicle size in ways harmful to safety. 83 Fed. Reg. 42986, 43016. This is in line with judicial precedent on the appropriate safety considerations for informing the setting of CAFE standards; Congress did not confer authority on NHTSA to make expansive, subjective, unbounded claims regarding what counts for safety. The proposal’s conjectural assumptions about road accidents or fatalities from individual driver decisions on how much they drive are a case in point. The PRIA concedes: “The potential impact of the rebound effect...is a consumer choice and not directly imposed by CAFE and CO2 standards.” PRIA at pg. 9. The theorized safety impacts “are not directly attributed to CAFE standards.” PRIA at pg. 1341. The proposal itself abandons these significant legal distinctions, only noting that “nothing in the higher CAFE standards compels consumers to drive additional miles,” while emphasizing and re-emphasizing the highly inflated figures for “rebound fatality costs.” This is not a marginal consideration among many. Instead, the theorized, spared rebound fatalities that are legally *not* attributable to the CAFE standards are prominently cited on page 1, column 1 of the proposal. NHTSA must acknowledge its approach is entirely unmoored from all known, permissible legislative and judicial considerations of “safety.” Consider, for comparison, the definition of motor vehicle safety that pertains to motor vehicle safety standards:

“motor vehicle safety” means the performance of a motor vehicle or motor vehicle equipment in a way that protects the public against unreasonable risk of accidents occurring because of the design, construction, or performance of a

HQ-OAR-2010-0799-11972. By EPA’s own data, eliminating current requirements will forestall these modeled changes and lead to increases in the frequency and severity of violations.

October 25, 2018

Elaine Chao, Secretary
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, D.C. 20590

Andrew Wheeler, Acting Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

Re: Safer Affordable Fuel-Efficient Vehicles Rule Proposal
Docket Nos. NHTSA-2018-0067; EPA-HQ-OAR-2018-0283

Dear Secretary Chao and Acting Administrator Wheeler:

The Northeast States for Coordinated Air Use Management (NESCAUM) writes to express its strong opposition to the proposed Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021 through 2026 (the “SAFE Vehicles Rule” or “Proposed Rule”), which was issued by your agencies on August 1, 2018 and published in the Federal Register on August 24, 2018 (83 *Fed. Reg.* 42,986).

NESCAUM is the regional association of the state air pollution control agencies in the six New England states, New Jersey and New York.¹ NESCAUM serves as a technical and policy advisor to our member states on a range of air quality and climate issues, and facilitates multi-state initiatives to improve air quality and address climate change. For more than three decades, NESCAUM and its member states have been working collaboratively with California and other states outside our region, the U.S. Environmental Protection Agency (EPA), and the automobile industry to promote low emission vehicles.

As proposed, the SAFE Vehicles Rule would roll back existing federal light-duty vehicle (LDV) greenhouse gas (GHG) emission standards for model years (MYs) 2021 through 2025. EPA further proposes an unprecedented curtailment of long-standing state authority under §§ 209(b) and 177 of the Clean Air Act (CAA) to adopt vehicle emission standards that are more stringent than federal standards by: (1) finding that the Energy Policy Conservation Act (EPCA) preempts California, and by extension Section 177 States, from adopting more stringent GHG emission standards; (2) revoking the waiver EPA issued to California in 2013 for its existing GHG standards and ZEV regulation; and (3) finding that state authorization under § 177 to adopt more stringent motor vehicle emission standards is limited in scope to adoption of standards designed to control criteria pollutants.

NESCAUM strongly opposes the SAFE Vehicles Rule in its entirety. Given the unmistakable evidence that impacts from a changing climate are worsening – from record-breaking heat waves, to mega-forest fires in the West, to extreme hurricanes – EPA’s proposed rollback of what is effectively the federal government’s biggest climate mitigation program would pose a real threat to public health and welfare,² in direct contravention of the Clean Air Act’s fundamental purpose. In addition to weakening federal GHG standards, EPA further proposes to handicap state efforts to control emissions by departing from its longstanding

¹ The views expressed herein represent the majority consensus of NESCAUM’s member states and not necessarily the views of all individual member states.

² See, Intergovernmental Panel on Climate Change, *Global Warming at 1.5°C, Special Report*, Oct. 2018 (available at <https://www.ipcc.ch/report/sr15/>).

been, or are treated as if they are in nonattainment. EPA has impermissibly read “nonattainment pollutants” into a statutory title that discusses “nonattainment areas.”²⁵

Likewise, the location of § 177 in Title I, Part D, rather than in Title II, is not dispositive of the types of pollutants states may regulate under § 177. The more harmonious logic is found in that placement’s bearing on *which states* may regulate any pollutant from motor vehicles in their state. While the location of a section within the statutory framework may provide some context as to congressional intent, courts are bound to take a broader view in interpreting statutes. *Food and Drug Admin. v. Brown and Williamson Tobacco Corp.*, 529 U.S. 120, 133 (2000) (a court must interpret a statute as a “symmetrical and coherent regulatory scheme and fit, if possible, all parts into a harmonious whole”).

In fact, a similar waiver provision located in § 209(e) authorizes states with approved Title I Part D plan provisions to “adopt and enforce standards relating to control of emissions from nonroad vehicles or engines.” EPA does not explain how it reconciles its interpretation of § 177 authority with the § 209(e) waiver provision. Presumably, under EPA’s logic, § 209 would permit regulation of GHGs because it is located in Title II (“Emissions Standards for Moving Sources”), but this would lead to the absurd result that states could regulate GHG emissions from nonroad vehicles, but not light-duty vehicles, a result that Congress could not have intended.

EPA has, in fact, overlooked a perfectly logical reason for the placement of § 177 in Part D of Title I that is unrelated to limitations on the types of pollutants that states may regulate. It is simply that Congress intended to confer state authority to regulate motor vehicle emissions on states with plans approved under Part D. Thus, it is reasonable and entirely appropriate that Congress would choose to locate such authority in the Title I provisions relating to state nonattainment plans.

C. The Proposed Rule may violate § 177 by resulting in the creation of a “third car.”

By prohibiting states from adopting California’s GHG standards, the SAFE Vehicles Rule could have the effect of creating a “third car,” an outcome that is expressly prohibited by § 177. In the 1990 amendments to the Clean Air Act, Congress added new language to § 177 that reinforces the “identity” requirement and ensures that states cannot adopt or enforce California’s standards in a way that would result in more than “two types of cars in this country.” *Am. Auto. Mfrs. Ass’n v. Comm’r, Massachusetts Dep’t of Env’tl. Prot.*, 998 F. Supp. 10, 13 (D. Mass. 1997), *aff’d sub nom. Ass’n of Int’l Auto. Mfrs., Inc. v. Comm’r, Mass. Dep’t of Env’tl. Prot.*, 208 F.3d 1 (1st Cir. 2000) (“In short, there can only be two types of cars in this country: “California” cars or “federal” cars.”). The so-called “third-vehicle” prohibition provides:

Nothing in [section 177 or in subchapter II (emissions standards for moving sources)] shall be construed as authorizing any such State. . . to take any action of any kind to create, or have the effect of creating, a motor vehicle or motor vehicle engine different than a motor vehicle or engine certified in California under California standards (a “third vehicle”) or otherwise create such a “third vehicle.” 42 U.S.C. § 7507 (emphasis added).

²⁵ Even if EPA’s reading of the title of § 177 was somehow correct, it is a well-established principle of statutory construction that the titles and headings of a statute cannot override the plain meaning of statutory text. *Whitman v. Am. Trucking Associations*, 531 U.S. 457, 483 (2001) (citing *Bhd. of R. R. Trainmen v. Baltimore & O. R. Co.*, 331 U.S. 519, 528–29 (1947) (“Factors of this type have led to the wise rule that the title of a statute and the heading of a section cannot limit the plain meaning of the text.”)).

In the event that EPA and NHTSA's other arguments attacking California's authority fail, the Proposed Rule would prohibit Section 177 States from adopting California GHG standards pursuant to § 177. Accordingly, the Proposed Rule creates the potential for three sets of cars: (1) those regulated under the federal standards; (2) those regulated under the California standards; and (3) those regulated under Section 177 State standards for non-GHG pollutants. This would have the absurd result of preventing Section 177 States from adopting *any* of the California standards, an outcome that is patently contrary to Congressional intent.

For all of these reasons, EPA's novel interpretation of § 177 as restricting the right of states to adopt California's GHG standards does not comport with the statutory text, congressional intent, or purpose of the Clean Air Act.

D. State GHG standards are designed, in part, to control criteria pollutants.

Finally, even if EPA were to prevail in its interpretation of § 177 as limiting states to adoption of standards that are designed to control criteria pollutants, EPA still could not preclude state regulation of GHG emissions because of the established link between higher atmospheric temperatures caused by GHG emissions and the formation of ozone. Decades of technical analysis, including EPA studies, show that a reduction in GHGs does, in fact, have a beneficial effect on addressing NAAQS nonattainment. Moreover, as discussed below, the ZEV regulation requires production and sale of vehicles with reduced or no tailpipe criteria emissions.

In the Proposed Rule, EPA suggests that California's GHG regulations are not designed to control criteria pollutants to address NAAQS nonattainment. 83 *Fed. Reg.* 43,253. In fact, California has specifically designed its GHG standards, in part, to address nonattainment of ambient air quality standards for criteria pollutants. California has frequently referenced the science to support GHG standards as a necessary method for controlling ozone and particulate matter pollution, and recognized that the State's ability to reduce nonattainment days for ozone and wildfire-caused particulate matter depends on its ability to reduce GHG emissions. *See, e.g., California Air Resources Board, Reconsideration of Previous Denial of a Waiver of Preemption*, Docket No. EPA-HQ-OAR-2006-0173-9006 (Apr 6, 2009) (“[C]limate change will likely slow progress toward attainment of health based air quality standards and increase pollution control costs by accentuating the potential for high ozone and high particulate days...”); *EPA Public Comment Hearing Regarding Waiver Request for California's Advanced Clean Car Program*, Docket No. EPA-HQ-AOR-2012-0562 at 17-19 (Sep 19, 2012) (addressing the exacerbating effect of GHGs on ozone and particulate matter pollution); *Public Hearing, In the Matter of California State Motor Vehicle Pollution Control Standards; Request for Waiver of Federal Preemption*, Docket No. EPA-HQ-OAR-2006-0173 (May 30, 2007) at 27 (“Even at the low to mid-range projections for global warming temperature increases California faces dozens of extra unhealthy days conducive to ozone formation”).

EPA has repeatedly expressed its own understanding that GHG standards should be viewed as a strategy to control criteria pollutants to address NAAQS nonattainment. EPA has previously asserted that “[c]limate change is expected to increase regional ozone pollution, with associated risks in respiratory illnesses and premature death.” 74 *Fed. Reg.* 66,525 (“There is now consistent evidence from models and observations that 21st century climate change will worsen summertime surface ozone in polluted regions of North America compared to a future with no climate change.”); ([W]hile ozone, “is a local or regional air pollution problem, the impacts of global climate change can nevertheless exacerbate this local air pollution problem.”).

EPA has also previously acknowledged that California's GHG standards are appropriately designed and intended to reduce levels of criteria pollutants. *See, e.g., 74 Fed. Reg.* at 32,763 (“There is a logical link between the local air pollution problem of ozone and California's desire to reduce GHGs as one way to

Appendix A

Congress has Protected California's Authority to Set Greenhouse Gas Emissions Standards for Cars and Trucks

Table of Contents

I.	INTRODUCTION	2
II.	LEGISLATIVE HISTORY OF THE ENERGY INDEPENDENCE AND SECURITY ACT	3
	A. THE ROLE OF <i>MASSACHUSETTS V. EPA</i> IN CONGRESSIONAL DELIBERATIONS	3
	B. CONGRESS REJECTED A PROPOSAL TO DIRECTLY REVOKE EPA AND STATE AUTHORITY	4
	C. CONGRESS REJECTED A PROPOSAL TO INDIRECTLY REVOKE EPA AND STATE AUTHORITY	8
	D. EXPLICIT PROTECTION FOR EPA AND STATE AUTHORITY INCLUDED IN LEGISLATION	11
	E. CONGRESS REJECTED BEHIND-THE-SCENES EFFORTS TO WEAKEN OR CONSTRAIN EPA AND STATE AUTHORITIES.....	12
	F. FLOOR DEBATE REFLECTS LEGISLATIVE INTENT TO PROTECT EPA AND STATE AUTHORITY	13
III.	CONGRESS HAS REPEATEDLY DEMONSTRATED ITS UNDERSTANDING THAT EPA AND STATE AUTHORITY WERE PROTECTED BY EISA	17
	A. THE 2010 RESOLUTION OF DISAPPROVAL ATTEMPTED TO UNDERMINE EPA'S AUTHORITY	18
	B. THE ENERGY TAX PREVENTION ACT OF 2011 SOUGHT TO REPEAL EPA AND STATE AUTHORITY	19
IV.	THE AGENCIES HAVE MISINTERPRETED LEGISLATIVE HISTORY REGARDING QUALIFICATION OF STATE TAILPIPE STANDARDS AS "OTHER MOTOR VEHICLE STANDARDS OF THE GOVERNMENT"	23
V.	CONCLUSION	24

I. Introduction

The National Highway Traffic Safety Administration (NHTSA) and the Environmental Protection Agency (EPA) have proposed the “Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks” (NHTSA/EPA Proposal). This proposal incorrectly concludes that California is preempted from establishing greenhouse gas emissions standards pursuant to a waiver under section 209 of the Clean Air Act and relatedly that other states may not adopt California greenhouse gas emissions standards pursuant to section 177 of the Clean Air Act. To reach this incorrect conclusion, the agencies ignore the most recent dozen years of determinative, clear and relevant legislative history.

The NHTSA/EPA Proposal claims that the Energy Policy and Conservation Act (EPCA), as amended by Energy Independence and Security Act of 2007 (EISA), preempts California from establishing and enforcing greenhouse gas emissions standards even when those standards satisfy the criteria for and receive a waiver of preemption pursuant to section 209(b) of the Clean Air Act.¹ However, the agencies omit from their proposal an examination of the extensive and enlightening legislative history from 2007 when Congress considered and enacted the Energy Independence and Security Act (EISA).

As described in detail below, after an extensive and public deliberation, Congress chose to craft EISA to explicitly protect EPA’s authority to regulate greenhouse gas emissions under section 202 of the Clean Air Act and California’s authority to do so pursuant to section 209(b) of the Clean Air Act. Congress rejected multiple proposals to either directly or indirectly interfere with the authority of California to establish greenhouse gas standards for light duty cars and trucks pursuant to section 209 of the Clean Air Act.

Since EISA was enacted in 2007, opponents of greenhouse gas regulation in Congress have demonstrated their understanding that these EPA and state authorities are valid by repeatedly attempting to pass legislation to revoke the authorities.

¹ Safer Affordable Fuel-Efficient Vehicles Rule, 83 Fed. Reg. 43232 (proposed Aug. 24, 2018)(relying on enactment of H.R. 1758, 103rd Cong. (1994)).

II. Legislative History of the Energy Independence and Security Act

During consideration of EISA, there was perhaps no other issue that received more deliberative focus by members of Congress and stakeholders than the twin issues of whether EPA could establish greenhouse gas emissions standards pursuant to section 202 of the Clean Air Act and whether California could establish its own greenhouse gas standards pursuant to a waiver of preemption under section 209(b) of the Clean Air Act.

Congress was cognizant of the relationship between EPCA and the Clean Air Act when crafting EISA. While some members of Congress proposed to repeal both EPA's and California's authority to set greenhouse gas standards for motor vehicles, this position did not prevail. Instead, the status of these authorities was vigilantly monitored and protected by Congressional leadership, Members of Congress, Governors, state Attorneys General, state and local air pollution regulators and the environmental protection advocacy organizations. Accordingly, the enacted text of EISA explicitly protected the authority of both EPA and the State of California. During floor debate as the legislation received final approval in Congress, legislators voiced the view that both EPA and California retained their preexisting authority to establish and enforce tailpipe standards for greenhouse gases. Those views went un rebutted.

A. The Role of *Massachusetts v. EPA* in Congressional Deliberations

Throughout 2007, Congress labored to develop and pass an energy bill. In April 2007, the Supreme Court handed down its ruling in *Massachusetts v. EPA*.² *Massachusetts* was a landmark decision which clarified that greenhouse gases were pollutants subject to regulation under the Clean Air Act and laid the foundation for EPA to establish greenhouse gas emissions standards for light duty cars and trucks. The Supreme Court decision was of great interest to Members of Congress and immediately became a topic of discussion in the development of EISA. This was not an obscure legal development. In May 2007, President George W. Bush held a rose garden press event³ to announce his

² *Mass. v. Env'tl. Prot. Agency*, 549 U.S. 497 (2007).

³ The White House, *President Bush Discusses CAFE and Alternative Fuel Standards* (May 14, 2007) <https://georgewbush-whitehouse.archives.gov/news/releases/2007/05/20070514-4.html>.

efforts to comply with what the New York Times called the “one of [the Court’s] most important environmental decisions in years.”⁴

The Democratic majority in the Congress and President Bush were in agreement that the energy bill should mandate greater fuel efficiency under the corporate average fuel economy (CAFE) laws. Since this area of the law has a relationship with emission standards under the Clean Air Act, the possibility of disturbing the Supreme Court’s ruling and affecting EPA’s and the states’ authority over greenhouse gases – perhaps even inadvertently – was an obvious risk of which all the relevant participants in the deliberations were well aware.

B. Congress Rejected a Proposal to Directly Revoke EPA and State Authority

The first effort to overturn *Massachusetts v. EPA* and revoke state authority was clearly not inadvertent. On June 1, 2007, the Chairman of the Energy and Air Quality Subcommittee of the House Energy and Commerce Committee released a draft proposal to govern regulation of fuels and vehicles with regard to greenhouse gases. This “discussion draft” proposal had two elements that are relevant to the current regulatory proposal.

First, the June 2007 legislative proposal would have provided that the U.S. EPA could no longer regulate greenhouse gas emissions from cars and trucks under section 202 of the Clean Air Act.⁵

Second, the June 2007 legislative proposal would have amended section 209 of the Clean Air Act to ensure that waivers could not be provided for California standards “designed to reduce greenhouse gas emissions.”⁶

⁴ Linda Greenhouse, *Justices Rule Against Bush Administration on Emissions*, New York Times (April 2, 2007) <https://www.nytimes.com/2007/04/02/washington/02cnd-scotus.html>.

⁵ Discussion Draft, Subcomm. on Energy and Air Quality, H. Energy and Commerce Comm., 110th Cong. 29 (June 1, 2007) (Subsection (c) EPA Vehicle Regulations). http://web.archive.org/web/20070703025326/http://energycommerce.house.gov/energy_110/Title%20%20-%20Fuels%20060107_xml.pdf.

⁶ Discussion Draft, Subcomm. on Energy and Air Quality, H. Energy and Commerce Comm., 110th Cong. 29 (June 1, 2007) (Subsection (d) State Waivers). http://web.archive.org/web/20070703025326/http://energycommerce.house.gov/energy_110/Title%20%20-%20Fuels%20060107_xml.pdf.

The opposition to this proposal was swift and unequivocal. On June 5, 2007, Speaker of the House Nancy Pelosi issued a press release that stated in full:

Washington, D.C. – Speaker Nancy Pelosi released the following statement today on legislation addressing energy independence and global warming:

'Any legislation that comes to the House floor must increase our energy independence, reduce global warming, invest in new technologies to achieve these goals and create good jobs in America.

'Any proposal that affects California's landmark efforts to reduce greenhouse gas emissions or eliminate the EPA's authority to regulate greenhouse gas emissions will not have my support.'⁷

This alone amounted to a death knell for the proposal, given the authority of the Speaker to determine what legislation is considered in the House of Representatives. However, concern about the proposal quickly spread to other numerous stakeholders. The Governors of eight states wrote to the Chairman of the Energy and Air Quality Subcommittee to express their strong opposition to the proposal. They wrote:

We are writing to express our strong opposition to the June 1, 2007, discussion draft of Alternative Fuels, Infrastructure and Vehicles. This legislation preempts our states' critical efforts to combat climate change by enacting regulations that reduce greenhouse gas emissions. While Federal action is necessary and long overdue on climate change, Congress must not deny states the right to pursue solutions in the absence of federal policy.

Specifically, this bill will preempt California's passenger vehicles and light duty truck emission standards, which will reduce greenhouse gas emissions by 30 percent. Our states, which collectively represent over one-third of the automobile market, have either adopted or will adopt California's standards. Not only does this bill deny our right to adopt California's vehicle emissions standards – a right granted by the federal Clean Air Act – it eliminates the Environmental Protection

⁷ Pelosi Statement on Legislation Addressing Energy Independence and Global Warming (June 5, 2007), <https://www.democraticleader.gov/newsroom/pelosi-statement-legislation-addressing-energy-independence-global-warming/>.

Agency's regulatory authority over greenhouse gases as a pollutant. This amounts to an about-face reversal of the Supreme Court decision identifying CO₂ as a pollutant within the scope of the Clean Air Act (*Massachusetts v. EPA*). Finally, we are opposed to the bill's delegation of regulatory authority to the National Highway Traffic Safety Administration.

Our states are at the forefront of the effort to reduce greenhouse gas emissions and our nation's dependency on carbon-based fuels. Climate change is real and it impacts the public health and welfare of every American. Congress must preserve states' ability to fight greenhouse gas emissions now. Going forward, states and the federal government must collaborate to take even stronger actions against the continuing threat of climate change.

We urge you to pursue legislation that instead enhances and complements the efforts already underway in our states.⁸

Additionally, the Attorneys General of 14 states wrote to the Chairman and Ranking Member of the House Energy and Commerce Committee to express their strong opposition to how the June 2007 proposal would regulate motor vehicle emissions.⁹ The Attorneys General stated first that "the bill would eliminate the authority that the Clean Air Act has provided EPA for decades to regulate greenhouse gas emissions, as the U.S. Supreme Court recently recognized." The Attorneys General also stated:

Second, the bill would eliminate EPA's ability to grant a waiver of preemption for California state motor vehicle standards for greenhouse gases. As you are aware, other states are currently free to adopt those standards pursuant to Section 177 of the Clean Air Act. A total of twelve of our states have adopted the California standards, with others currently considering them. The bill would eliminate the statutory right of states to do so, thereby upsetting the longstanding cooperative federalism established by the Act. The current system of allowing two, but only

⁸ Letter from Gov. Arnold Schwarzenegger, Cal., Gov. Deval Patrick, Mass., Gov. Christine O. Gregoire, Wash., Gov. Bill Richardson, N. M., Gov. Theodore R. Kulongoski, Or., Gov. Edward G. Rendell, Pa., Gov. Janet Napolitano, Ariz., Gov. Eliot Spitzer, N. Y. to the Honorable Rick Boucher, Chair, Energy and Air Quality Subcomm., H. Committee on Energy and Commerce Comm. (June 7, 2007).

⁹ Letter from the Attorneys General of the Commonwealth of Mass. and the States of Cal., Conn., Del., Iowa, Me., Md., Minn., N. J., N. M., N. Y., Or., R. I., and Vt., and the Corporation Counsel for the City of New York to the Honorable John D. Dingell, Chair, H. Energy and Commerce Comm. and the Honorable Joe Barton, Ranking Member, H. Energy and Commerce Comm. (June 6, 2007).

two, sets of motor vehicle standards has worked well over the last four decades. Indeed, most of the technological innovations needed to reduce air pollutant emissions have been because of California's standards.

The National Association of Clean Air Agencies (NACAA) also wrote to the Energy and Air Quality Subcommittee Chair and Ranking Member to vigorously object to the language.¹⁰ NACAA represented the air pollution control agencies in 54 states and territories and more than 165 metropolitan areas across the country. The letter explained that to prohibit state greenhouse gas emissions standards for motor vehicles as the June 2007 proposal would do "would be an inappropriate revocation of states' rights." NACAA also objected to revoking EPA's authority to regulate transportation-related greenhouse gas emissions. NACAA concluded by stating, "NACAA urges that you not only remove the aforementioned provisions from this Discussion Draft, but that you also work to ensure that any energy bill that proceeds through Congress be free of language that would limit state or federal authority to address global warming."

Environmental groups also announced their opposition to the proposal, strongly objecting to the revocation of federal authority and the preemption of state law to address global warming pollution from vehicles.¹¹

Twelve members of the Energy and Commerce Committee formally expressed their opposition to the proposal in a letter to the Chairs of the full committee and subcommittee. Noting that the proposal would overturn *Massachusetts v. EPA* and block the efforts of 12 states to address greenhouse gas emissions from cars and trucks, the members wrote, "The last thing we should do is attempt to stop important progress being made by the states. The draft's preemption provision has no place in either this draft or any subsequent global warming legislation the Committee will consider." They

¹⁰ Letter from S. William Becker, Exec. Dir., Nat'l Ass'n of Clean Air Agencies, to the Honorable Rick Boucher, Chair, Subcomm. on Energy and Air Quality, H. Committee on Energy and Commerce Comm., and the Honorable J. Dennis Hastert, Ranking Member, Subcomm. on Energy and Air Quality, H. Committee on Energy and Commerce Comm. (June 6, 2007).

¹¹ Letter from Betsy Loyless, National Audubon Society, Robert Dewey, Def. of Wildlife, Erich Pica, Friends of the Earth, John Passacantando, Greenpeace, Tiernan Sittenfeld, League of Conservation Voters, Karen Steuer, National Environmental Trust, Karen Wayland, Nat. Res. Def. Council, Joan Claybrook, Pub. Citizen, Debbie Sease, Sierra Club, Alden Meyer, Union of Concerned Scientists, Anna Aurilio, U.S. PIRG, Linda Lance, The Wilderness Soc'y to U.S. Representatives (June 5, 2007).

stated that they strongly opposed the proposal and urged the chairs to abandon the harmful policies that had been proposed.¹²

As a result of this strong opposition, the legislative proposal did not advance. It was not introduced as a formal bill. It was never marked up in subcommittee or full committee, nor was it considered on the floor of either chamber of Congress.

C. Congress Rejected a Proposal to Indirectly Revoke EPA and State Authority

After the proposal to directly revoke EPA and State authority failed, a subsequent legislative proposal could have indirectly undermined *Massachusetts v. EPA*. H.R. 2927, was introduced on June 28, 2007. This proposal would neither have amended the Clean Air Act nor explicitly referenced any Clean Air Act authority. However, it directed that CAFE standards established by the Department of Transportation “shall be expressed in terms of average miles per gallon of fuel and in terms of average grams per mile of carbon dioxide emissions, such that the specified average grams per mile of carbon dioxide emissions is equivalent to the average miles per gallon of fuel specified in the standard for that model year.”¹³ While the proponents of the legislation stated that they had no intent to affect EPA or the States’ authorities to regulate greenhouse gas emissions from motor vehicles, members of Congress and many stakeholders were concerned that the proposal, if enacted, could potentially resuscitate the claim, previously rejected by courts, that CAFE standards preempted California’s greenhouse gas emissions standards for vehicles and interfere with EPA’s ability to establish such standards.

Environmental groups wrote to members of Congress expressing opposition to H.R. 2927 stating that the legislation would “interfere with EPA authority under the Clean Air Act to set vehicle pollution standards and the *Massachusetts v. EPA* decision, inviting

¹² Letter from Reps. Henry A. Waxman, Edward J. Markey, Anna G. Eshoo, Eliot L. Engel, Lois Capps, Thomas H. Allen, Janice D. Schakowsky, Hilda L. Solis, Jay Inslee, Anthony D. Weiner, Tammy Baldwin and Albert R. Wynn to the Honorable John D. Dingell, Chair, H. Energy and Commerce Comm. and the Honorable Rick Boucher, Chair, Subcomm. on Energy and Air Quality, H. Committee on Energy and Commerce Comm. (June 7, 2007).

¹³ H.R. 2927, 110th Cong. (2007).

future litigation of vehicles standards.”¹⁴ They stated that it would undermine “states’ progress in addressing global warming.”

Rep. Henry A. Waxman, who considered *Massachusetts v. EPA* to be a great victory and carefully monitored the energy bill’s development to protect EPA and state authorities, wrote to all the members of the House to explain:

H.R.2927, the Hill-Terry Corporate Average Fuel Economy (CAFE) bill, threatens to overturn these victories. By directing the Department of Transportation (DOT) to express CAFE requirements as CO2 limits, the bill reinvigorates the claim that DOT’s CAFE standards preempt state and EPA global warming standards for vehicles, which the Supreme Court rejected in *Massachusetts v. EPA*.

The interaction between EPA’s authority to regulate air pollution and DOT’s authority to establish CAFE standards was a key issue in *Massachusetts v. EPA*. In its decision, the Supreme Court held that DOT’s and EPA’s “obligations may overlap, but there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency.”

H.R.2927 amends the CAFE law to blur the line between fuel economy and greenhouse gas emissions standards, reopening and strengthening the claim rejected by the Supreme Court. It requires DOT’s CAFE standards to be expressed both in miles per gallon and “in terms of average grams per mile of carbon dioxide emissions.”

This provision would provide opponents of action on global warming with a new argument that Congress had decided to unify fuel economy standards and greenhouse gas emissions standards under DOT.¹⁵

A group of state Attorneys General joined together again and wrote in opposition to the legislation.

¹⁴ Letter from Karen Steuer, Vice President, Gov’t Affairs, Nat’l Env’tl Trust, Dan Lashof, Science Dir., Climate Center, Nat. Res. Def. Council, Dan Becker, Dir., Global Warming program, Sierra Club, Michelle Robinson, Dir., Clean Vehicles Program, Union of Concerned Scientists, Anna Aurilio, Dir., Washington DC Office, U.S. PIRG to U.S. Representatives (July 5, 2007).

¹⁵ Letter from Rep. Henry A. Waxman to all Members of the House of Representatives (July 26, 2007).

We write today to voice our strong opposition to H.R. 2927 which contains troublesome language that may be used to eliminate existing Clean Air Act authority to address global warming, including California's landmark greenhouse gas emissions standards. Our understanding is that H.R. 2927 may be voted on in the coming days as an amendment to the House of Representative's energy bill.

While providing only modest increases in federal fuel economy standards, the bill includes language that has the potential to disrupt the statutory framework for controlling carbon dioxide emissions that was endorsed by the U.S. Supreme Court in *Massachusetts v. Environmental Protection Agency (EPA)*, 549 U.S. _____, 127 S.Ct. 1438 (2007). As currently drafted, the bill would require the Secretary of Transportation to issue fuel economy standards in terms of both "miles per gallon" and "grams per mile of carbon dioxide emissions." The Department of Transportation has never set emission standards – its mandate is to promote energy efficiency by setting mileage standards. See *Massachusetts v. EPA*, 127 S. Ct. at 1462 (citing 49 U.S.C. § 6201(5)).

In contrast, EPA's statutory mandate is to prescribe standards applicable to "emissions of any air pollutant from any class or classes of new motor vehicle[s] . . ." 42 U.S.C. § 7521(a)(1); see also *Massachusetts v. EPA*, 127 S. Ct. at 1447. As the Supreme Court recently observed, these two statutory mandates are "wholly independent." *Massachusetts v. EPA*, 127 S.Ct. at 1462. The inclusion of language referring to carbon dioxide *emissions* appears to serve no legitimate statutory purpose.

We are concerned that the language will be used by those challenging the state greenhouse gas emission standards originally adopted by California (the Pavley regulations). Thirteen States have now adopted those standards, and many others are considering adoption. These thirteen States – representing over 40% of the American population – have adopted them because the Clean Air Act's cooperative federalism structure allows them to do so, and their citizens are seeking action on global warming. The current system of allowing two (and only two) sets of motor vehicle emission standards has worked well over the last four

decades. Indeed, most of the technological innovations needed to reduce air pollutant emissions have been made because of California's standards.¹⁶

The *Washington Post* editorialized against the proposal on July 26, 2007, stating that the legislation would undermine California's greenhouse gas tailpipe standards, by "getting the Department of Transportation which deals with fuel economy, into the business of regulating carbon emissions, which the Supreme Court ruled in the spring is within the purview of the Environmental Protection Agency."¹⁷

Because of the strong opposition to H.R. 2927, it was never voted upon in subcommittee, committee or on the floor of either chamber of Congress.

D. Explicit Protection for EPA and State Authority Included in Legislation

When the Senate had passed its omnibus energy bill in July of 2007, it had included in the legislation a prominent provision entitled "Relationship to Other Law" that was drafted to ensure that nothing in the legislation relating to automobiles or fuel economy would inadvertently impact EPA's or the states' authority to address greenhouse gases. The provision stated:

Except to the extent expressly provided in this Act or an amendment made by this Act, nothing in this Act or an amendment made by this Act supersedes, limits the authority provided or responsibility conferred by, or authorizes any violation of any provision of law (including a regulation), including any energy or environmental law or regulation.¹⁸

The text of this provision remained unchanged as the legislation ping ponged back and forth between the House and Senate and would ultimately become section 3 in the enacted law.¹⁹ With this provision, Congress provided that the new law did not supersede or limit the authority of any other provision of law unless expressly stated.

¹⁶ Letter from the Attorneys General of the States of Cal., Ariz., Conn., Del., Ill., Iowa, Me., Md., Mass., N. M., N. Y., Or., R. I., and Vt., and the Corp. Counsel for the City of N. Y. to the Honorable Nancy Pelosi, Speaker of the House (August 1, 2007).

¹⁷ Editorial, "Leadership Needed; Higher fuel economy standards may be doomed without Nancy Pelosi's support," THE WASHINGTON POST (July 26, 2007).

¹⁸ Sec. 2 in the Senate Amendment passed on July 3, 2007.

¹⁹ Sec. 3, H.R. 6, (110th Cong.) (2007).

EISA does not contain language that expressly supersedes or limits either section 202 or section 209 of the Clean Air Act.

E. Congress Rejected Behind-the-Scenes Efforts to Weaken or Constrain EPA and State Authorities

In addition to the legislative efforts described above that could have directly or indirectly revoked the EPA's authority to regulate greenhouse gas emissions under section 202 of the Clean Air Act and California's authority to do so pursuant to section 209(b) of the Clean Air Act, there were also multiple behind-the-scenes efforts to weaken or constrain EPA and state authorities during congressional consideration of EISA.

The Senate passed an omnibus energy bill in June 2007. The House passed its omnibus energy bill in August 2007, and then a lengthy informal, bipartisan House-Senate negotiation began. In this informal process, opponents of EPA and State authorities to regulate greenhouse gases made at least two efforts to get congressional negotiators to agree to legislative language that would weaken or constrain EPA or the States.

First, in late 2007, negotiators rejected a proposal that was supported by the automobile industry, some members of Congress and the Bush Administration.²⁰ This proposal would have made three major changes. First, it would have changed the decision-making criteria of Clean Air Act Section 202(a) to mirror those of EPCA §32902. Second, it would have required the EPA Administrator to coordinate intensively with NHTSA when setting greenhouse gas emission standards. Third, it would have limited states to regulating the greenhouse gas emissions of vehicles acquired for a state's own use.²¹ This amendment was not included EISA.

Additionally, in December 2007, Sen. Carl Levin attempted one last "11th hour gambit" to add language to ensure that any EPA emission standard was "fully consistent" with NHTSA's CAFE standards.²² This proposal was rejected. The press reported at the time

²⁰ See Letter from Sens. Tom Carper, Dianne Feinstein, and Edward J. Markey to Sec'y Elaine L. Chao and Acting Administrator Andrew Wheeler (October 25, 2018).

²¹ Attachment entitled "Draft Amendment" (dated November 20, 2007) to Letter from Sens. Tom Carper, Dianne Feinstein, and Edward J. Markey to Sec'y Elaine L. Chao and Acting Administrator Andrew Wheeler (October 25, 2018).

²² Ben Geman and Alex Kaplun, *Senate energy showdown on tap this morning*, E&E DAILY (Dec. 13, 2007). <https://www.eenews.net/eedaily/stories/59807/>.

that “Levin's unsuccessful push came after a week in which the White House has threatened to veto the energy bill in part over the jurisdictional issue, and after several industry groups likewise pushed lawmakers to alter the energy bill on that issue.”²³

F. Floor Debate Reflects Legislative Intent to Protect EPA and State Authority

As the legislative process on EISA drew to a close, members explained during floor debate that the legislation protected EPA's authority to regulate greenhouse gas emissions under section 202 of the Clean Air Act and states' authority to do the same pursuant to sections 209 and 177 of the Clean Air Act.

On December 6, 2007, the House passed the near final version of H.R. 6. (technically a House amendment to the Senate amendment of H.R. 6).²⁴ During floor consideration of this amendment, Rep. Waxman briefly explained the strengths of the bill. As a member who had bird-dogged the issue of authority to establish greenhouse gas emissions standards for cars and trucks throughout consideration of the bill, he praised the final outcome:

With this bill, we will turn from the past to the future. We have begun the process of adopting energy policies that recognize the science of global warming and the threat to our Nation's energy security.

This legislation will finally give Americans the fuel-efficient automobiles they want, saving families \$700 to \$1,000 a year. That is money we won't be sending to dangerous regimes in the Middle East....

And there are some things this legislation will not do. It won't diminish the EPA's authority to address global warming, which the Supreme Court has recognized. It won't seize authority from the States to act on global warming.²⁵

The Bush White House objected to this approach. The White House issued a Statement of Administration Policy (SAP) highlighting seven areas of concern with the legislation

²³ *Id.*

²⁴ See, Congressional Research Service, Energy Independence and Security Act of 2007: A Summary of Major Provisions (Dec. 21, 2007) <https://www.everycrsreport.com/reports/RL34294.html>.

²⁵ Statement of Rep. Henry A. Waxman Page H14430 (Dec. 6, 2007).

and stating that the President's advisors would recommend that he veto the House-passed legislation. The SAP expressed concern about the House provisions to establish a Renewable Energy Standard as well as certain energy tax provisions. The SAP also identified EPA's authority to regulate greenhouse gas emissions as an area of concern:

H.R. 6 leaves ambiguous the role of the Environmental Protection Agency (EPA) in regulating vehicle fuel economy, and as a result would likely create substantial regulatory uncertainty, confusion, and duplication of efforts. The bill could also delay effective implementation of new fuel economy requirements due to inevitable litigation. The double regulation that would result from this failure to clearly identify the relative roles of EPA and DOT in national fuel economy regulations could greatly undermine our shared objective of rapidly reducing gasoline consumption. The bill needs to clarify one agency as the sole entity, after consultation with other affected agencies, to be responsible for a single national regulatory standard for both fuel economy and tailpipe greenhouse gas emissions from vehicles.²⁶

President Bush's Press Secretary called upon the Senate to "take a more cooperative approach."²⁷

The Senate did, in fact, respond to some of the president's concerns, but it did not amend the language governing tailpipe standards, nor the provision governing "Relationship to Other Law." Instead, the Senate removed other provisions identified in the SAP that were unrelated to EPA's authority over tailpipe greenhouse gas emissions. Specifically, the Senate stripped out tax incentives for energy efficiency and renewable energy as well as the provisions that would have established a Renewable Energy Standard. The Senate also removed provisions that would have repealed subsidies for oil and natural gas producers.²⁸

²⁶ Executive Office of the President, Office of Mgmt. and Budget, Statement of Admin. Policy, H.R. 6 – Energy Independence and Security Act of 2007 (Dec. 6, 2007) https://georgewbush-whitehouse.archives.gov/omb/legislative/sap/110-1/hr6sap-h_2.pdf.

²⁷ Statement by the Press Secretary on Energy Security (Dec. 6, 2007) <https://georgewbush-whitehouse.archives.gov/news/releases/2007/12/20071206-13.html>.

²⁸ See, Congressional Research Service, Energy Independence and Security Act of 2007: A Summary of Major Provisions (Dec. 21, 2007) <https://www.everycrsreport.com/reports/RL34294.html>.

As the Senate took final action to approve EISA, Sen. Levin, whose amendment to require EPA standards be “fully consistent” with the NHTSA’s standards was rejected, acknowledged that EPA and California retained their authorities. He stated that the EPA “has authority under the Clean Air Act to regulate greenhouse gas emissions from vehicles and to delegate that authority, as the agency deems appropriate, to the State of California. This authority was recently upheld by the U.S. Supreme Court, and it is not our purpose today to attempt to change that authority or to undercut the decision of the Supreme Court.”²⁹

²⁹ See Statement of Sen. Carl Levin, CONGRESSIONAL RECORD S1519 (Mar. 4, 2008) (partially recapping the series of statements from Dec. 13, 2007). Sen. Levin requested and obtained consent to place a colloquy in the record between himself, Sen. Daniel Inouye, then-Chair of the Senate Commerce Committee, and Sen. Dianne Feinstein, the author of the Senate legislation to improve fuel economy. In this colloquy, the Senators briefly discuss fuel economy standards. Both Sens. Inouye and Feinstein agreed that “all Federal regulations in this area be consistent.” Sen. Levin subsequently stated during floor debate over EISA that he “was assured this morning by both Senator Inouye and Senator Feinstein that it is indeed the intent of the law they wrote that EPA regulations be consistent with NHTSA.” Statement of Sen. Carl Levin, CONGRESSIONAL RECORD S15427 (Dec. 13, 2007). Later that same day, Sen. Inouye and Sen. Feinstein explained what they meant by consistency. Colloquy entitled “Agency Management,” CONGRESSIONAL RECORD S15386 (Dec. 13, 2007). Sen. Inouye stated, “The DOT and the EPA have separate missions that should be executed fully and responsibly.” Sen. Feinstein stated:

The legislation increasing the fuel economy standards of vehicles by 10 miles per gallon over 10 years does not impact the authority to regulate tailpipe emissions of the EPA, California, or other states, under the Clean Air Act.

The intent was to give NHTSA the ability to regulate fuel efficiency standards of vehicles, and increase the fleetwide average to at least 35 miles per gallon by 2020.

There was no intent in any way, shape, or form to negatively affect, or otherwise restrain, California or any other State’s existing or future tailpipe emissions laws, or any future EPA authority on tailpipe emissions.

The two issues are separate and distinct.

As the Supreme Court correctly observed in *Massachusetts v. EPA*, the fact “that DOT sets mileage standards in no way licenses EPA to shirk its environmental responsibilities. EPA has been charged with protecting the public’s health and welfare, a statutory obligation wholly independent of DOT’s mandate to promote energy efficiency. The two obligations may overlap, but there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency.”

I agree with the Supreme Court’s view of consistency. There is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency.

The U.S. District Court for the Eastern District of California in *Central Valley Chrysler-Jeep v. Goldstone* has reiterated this point in finding that if approved by EPA, California’s standards are not preempted by the Energy Policy Conservation Act.

Title I of the Energy Security and Independence Act of 2007, H.R. 6, provides clear direction to the Department of Transportation, in consultation with the Department of Energy and the Environmental Protection Agency, to raise fuel economy standards.

Rep. Markey provided the most detailed articulation of the adopted provisions during the final debate in the House. He said:

As the principal House proponent of the fuel economy Title in this legislation, I also wish to briefly discuss several of its provisions in order to more fully explain the statutory language and to provide context for what we are accomplishing with this historic energy bill.

Section 3 of the bill states: "Except to the extent expressly provided in this Act, or in an amendment made by this Act, nothing in this Act or an amendment made by this act supersedes, limits the authority or responsibility conferred by, or authorizes any violation of any provision of law (including a regulation), including any energy or environmental law or regulation."

The laws and regulations referred to in section 3 include, but are not limited to, the Clean Air Act and any regulations promulgated under Clean Air Act authority. It is the intent of Congress to fully preserve existing federal and State authority under the Clean Air Act.

In addition, Congress does not intend, by including provisions in Title I of the bill that reform and alter the authority of the Secretary of Transportation to increase fuel economy standards for passenger automobiles, non-passenger automobiles, work trucks, and medium and heavy duty trucks, to in any way supersede or limit the authority and/or responsibility conferred by sections 177, 202, and 209 of the Clean Air Act. For section 202 of the Clean Air Act, this includes but is not limited to the authority and responsibility affirmed by the Supreme Court's April 2, 2007 decision in *Massachusetts v. EPA*, No. 05-1120. For sections 177 and 209 of the Clean Air Act, this includes but is not limited to the authority affirmed by the September 12, 2007 decision of the U.S. District Court for the District of Vermont

By taking this action, Congress is continuing DOT's existing authority to set vehicle fuel economy standards. Importantly, the separate authority and responsibility of the U.S. Environmental Protection Agency to regulate vehicle greenhouse gas emissions under the Clean Air Act is in no manner affected by this legislation as plainly provided for in Section 3 of the bill addressing the relationship of H.R. 6 to other laws.

I fought for Section 3. I have resisted all efforts to add legislative language requiring "harmonization" of these EPA and NHTSA standards. This language could have required that EPA standards adopted under section 202 of the Clean Air Act reduce only the air pollution emissions that would already result from NHTSA fuel economy standards, effectively making the NHTSA fuel economy standards a national ceiling for the reduction of pollution. Our legislation does not establish a NHTSA ceiling. It does not mention the Clean Air Act, so we certainly do not intend to strip EPA of its wholly separate mandate to protect the public health and welfare from air pollution.

To be clear, federal standards can avoid inconsistency according to the Supreme Court, while still fulfilling their separate mandates.

in *Green Mountain Chrysler Dodge Jeep et al. v. Crombie et al.*, No. 2:05-cv-302, and the December 11, 2007 decision of the United States District Court for the Eastern District of California in *Central Valley Chrysler-Jeep, Inc. et al. v. Goldstone, et al.*, No. 1:04-cv-06663-AWIGSA.³⁰

On December 19, 2007, President George W. Bush signed EISA into law. In signing the legislation, the President said, “We make a major step toward reducing our dependence on oil, confronting global climate change, expanding the production of renewable fuels, and giving future generations of our country a nation that is stronger, cleaner, and more secure.”³¹ The President touted the attribute-based standards that NHTSA would now use to set CAFE standards, but he did not assert that either state or federal authorities under the Clean Air Act were affected.

III. Congress Has Repeatedly Demonstrated its Understanding that EPA and State Authority Were Protected by EISA

Professor Lisa Heinzerling of Georgetown Law Center testified before Congress in 2008 that the “Relationship to Other Law” language was effective at preserving the regulatory authority described by *Massachusetts*. She said:

EISA does not in any way change EPA’s obligations on remand from *Massachusetts v. EPA*. EISA affects neither EPA’s legal obligations with respect to determining whether greenhouse gases may reasonably be anticipated to endanger public health or welfare or the regulatory obligations that flow from such a determination.³²

³⁰ Statement of Rep. Edward J. Markey (Dec. 18, 2007) [Page H16750](#)

³¹ Pres. George W. Bush, Remarks on Signing the Energy Independence and Security Act of 2007 (December 19, 2007) <http://www.presidency.ucsb.edu/ws/index.php?pid=76194&st=&st1=>

³² Testimony of Lisa Heinzerling Before the Select Committee on Energy Independence and Global Warming, U.S. House of Representatives, *Massachusetts v. U.S. EPA Part II: Implications of the Supreme Court Decision* (March 13, 2008) <https://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?referer=http://legal-planet.org/2017/07/24/guest-blogger-gregory-dotson-is-scott-pruitt-calling-for-an-amendment-to-the-clean-air-act/&httpsredir=1&article=1065&context=cong>.

The Administration understood this. In May 2010, EPA promulgated greenhouse gas emissions standards for cars and trucks.³³ In November 2010, EPA proposed standards for medium and heavy duty vehicles.³⁴

Congress also understood that EPCA, as amended by EISA, did not revoke EPA's authority to regulate greenhouse gas emissions under section 202 of the Clean Air Act, nor did it interfere with the authority of California to establish greenhouse gas standards for light duty cars and trucks pursuant to section 209(b) of the Clean Air Act. This has been demonstrated by the legislation Congress has chosen to consider since enactment of EISA. Two examples of such bills are a 2010 resolution of disapproval and a set of companion bills in 2011. Both examples are discussed below.

A. The 2010 Resolution of Disapproval Attempted to Undermine EPA and State Authority

In January 2010, Sen. Lisa Murkowski introduced a resolution of disapproval, pursuant to the Congressional Review Act, relating to EPA's endangerment finding and the cause or contribute findings for greenhouse gases under section 202(a) of the Clean Air Act. These findings are a prerequisite for issuing emissions standards for cars and trucks under section 202 of the Clean Air Act.³⁵

In June 2010, Sen. Murkowski moved to proceed to consideration of the resolution on the Senate floor. In arguing for the Senate to pass the resolution, she explained her view that EPA regulations would be expensive, inefficient, and better suited for a congressional response. She argued against EPA's authority to set emissions standards for greenhouse gases and explained that disapproving EPA's endangerment finding and cause or contribute findings would also prevent states from regulating. Sen. Murkowski said:

The EPA does not need to take over this process, and it should not be allowed to do so under a law that was never intended to regulate fuel economy. I understand concerns about a patchwork of standards and how difficult it would be for the

³³ Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards, 75 Fed. Reg. 25324 (May 7, 2010).

³⁴ Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles, 75 Fed. Reg. 74152 (November 30, 2010).

³⁵ S.J.Res 26, 111th Cong. (2010).

industry to comply. But while we had one national standard at the start of 2009, we now have two national standards set by two Federal agencies driven by California's standards. I have a letter from the National Automobile Dealers Association dated just yesterday that spells this out quite clearly. They indicate that it in no way helps us to have, again, two national standards set by two Federal agencies. The best way to avoid a messy patchwork would be to pass our disapproval resolution, revoke California's waiver, and allow one Federal agency to set one standard that works for all 50 States.³⁶

If this motion had passed both chambers of Congress and been signed by the President, then EPA's findings would have been overturned and the predicate for its greenhouse gas emissions standards would have been removed. However, the motion to proceed to vote on the resolution of disapproval was defeated on a vote of 47 yeas to 53 nays.³⁷ Therefore Congress did not disapprove of the key findings for EPA to regulate greenhouse gas emissions from cars and trucks. This event demonstrates that three years after passage of EISA, it was understood in the Senate that if one wished to remove EPA and California authority to regulate greenhouse gas emissions, legislation would be necessary. There was no suggestion that EPCA or EISA had revoked these authorities.

B. The Energy Tax Prevention Act of 2011 Sought to Repeal EPA and State Authority

When control of the House of Representatives changed hands after the 2010 elections, the new Republican majority repeatedly attempted to prevent the EPA from abiding by the *Massachusetts v. EPA* ruling and further regulating greenhouse gas emissions.

In 2011, Congressional Republicans advanced legislation called the "Energy Tax Prevention Act" to overturn *Massachusetts v. EPA* and to thoroughly excise authority to

³⁶ Statement of Sen. Lisa Murkowski, [Page S4791](#)

³⁷ Roll call vote 184, 111th Cong. (June 10, 2010)

https://www.senate.gov/legislative/LIS/roll_call_lists/roll_call_vote_cfm.cfm?congress=111&session=2&vote=00184.

address greenhouse gases from the Clean Air Act.³⁸ This legislation was introduced in both the House and the Senate.³⁹

The legislation recognized that both EPA and the states had adopted greenhouse gas standards for cars and trucks. If enacted, the Energy Tax Prevention Act would have terminated both federal and state authority to establish tailpipe standards for greenhouse gases after vehicle model year 2016.

The legislation would have created a new section 330 of the Clean Air Act to establish a sweeping prohibition on using the Clean Air Act to address climate change. The proposed section 330(b)(1)(A) stated, “The Administrator may not, under this Act, promulgate any regulation concerning, take action relating to, or take into consideration the emission of a greenhouse gas to address climate change.”

The majority in Congress understood that this was a significant change in the law and included a provision to provide a transition from a world in which EPA was authorized to regulate greenhouse gas emissions from cars and trucks to a world in which the agency was prohibited from doing so. The proposed section 330(b)(2)(A) prevents “further revision” of the 2010 greenhouse gas tailpipe standards. Those standards apply to vehicle model years 2012 to 2016. Thus, if the legislation had been enacted, there would have been no federal greenhouse gas tailpipe standards for cars and trucks after model year 2016.

The Energy Tax Prevention Act, in section 3, also included an amendment to section 209 of the Clean Air Act. This amendment would have added a new paragraph to section 209 to prohibit EPA from granting a waiver of preemption for state greenhouse gas emissions standards for cars and trucks. The proposed new paragraph provided as follows:

Section 209(b) of the Clean Air Act (42 U.S.C. 7543) is amended by adding at the end the following:

³⁸ The legislation had a misleading name as it contained no tax provisions and “would result in no new or increased budget authority, entitlement authority, or tax expenditures or revenues.” H.R. Rep. No. 112-50, 29 (2011-2012) <https://www.congress.gov/congressional-report/112th-congress/house-report/50>.

³⁹ H.R. 910, 112th Cong. (2011). S. 482, 112th Cong. (2011).

“(4) With respect to standards for emissions of greenhouse gases (as defined in section 330) for model year 2017 or any subsequent model year new motor vehicles and new motor vehicle engines—

“(A) the Administrator may not waive application of subsection (a); and

“(B) no waiver granted prior to the date of enactment of this paragraph may be construed to waive the application of subsection (a).”⁴⁰

This proposal would not have been necessary if California had been preempted by EPCA, as amended by EISA, from setting its own greenhouse gas emission standards with a Section 209 waiver from EPA.

The House Committee report for the Energy Tax Prevention Act revealingly explains that the proposed legislation would allow the greenhouse gas emissions standards agreed to by EPA, NHTSA and the State of California in 2009 to remain in effect. That constituted a clear acknowledgment – from members who were not supporters of greenhouse gas regulation either by EPA or states – that existing law allowed both EPA and states to regulate vehicular greenhouse gas emissions. The House bill would have left already-adopted EPA and California regulations in place, but it did not offer any additional authority for the standards to be adopted or go into effect. The report states:

H.R. 910 explicitly exempts these new light duty fuel efficiency standards, which the Administration agreed in 2009 to promulgate pursuant to an agreement between EPA, the National Highway Traffic Safety Administration (NHTSA) and the State of California. Under H.R. 910, these provisions, which are applicable to Model Years 2012 through 2016, will still go into force as planned, as will EPA's proposed standards for medium and heavy duty engines and vehicles for Model Years 2014 through 2018. Thus, any energy savings from these new standards are preserved by H.R. 910.⁴¹

In sum, rather than arguing that EPA lacked statutory authority to establish greenhouse gas emissions standards, the Committee report stated that EPA was exercising its

⁴⁰ Sec. 3, H.R. 910, 112th Cong. (2011). Sec. 3, S. 482, 112th Cong. (2011).

⁴¹ H.R. Rep. No. 112-50, at 8 (2011-2012) <https://www.congress.gov/congressional-report/112th-congress/house-report/50>.

authority in a manner that the majority of the Committee believed to be unwise as a matter of policy:⁴²

Proponents of EPA's agenda have stated that the Supreme Court's decision should be the last word, but this is incorrect. The Supreme Court did not mandate that the EPA make an endangerment finding and indeed no administration whether Democrat or Republican has ever made such an unprecedented finding. While it is the role of the Supreme Court to interpret existing legislation such as the CAA, Congress is free to amend or clarify that legislation if it believes the Supreme Court concluded wrongly or that circumstances necessitate a change in the law. Indeed, the current Congress would be remiss if it ignored the deleterious impact of EPA's regulatory agenda in favor of a highly controversial 5 to 4 Supreme Court decision and its interpretation of Congressional intent when the CAA which was enacted--decades before global warming emerged as an issue.⁴³

The Committee's majority did not want EPA to use the Clean Air Act to address global warming, but it does not assert that such action was preempted by EPCA or EISA or make a claim that EPA and California lacked authority to regulate greenhouse gas emissions. To the contrary, even members of Congress who opposed greenhouse gas regulation understood that EISA had protected EPA's authority to regulate greenhouse gas emissions from cars and trucks and the related ability of states to regulate those emissions pursuant to section 209(b) of the Clean Air Act.

The Energy Tax Prevention Act passed the House of Representatives on April 7, 2011.⁴⁴ The Senate rejected the legislation when Sen. Mitch McConnell offered it as an amendment to a small business bill on April 6, 2011.⁴⁵ In offering the amendment, Sen. McConnell argued that greenhouse gas emissions standards were unwise but he made

⁴² It is unclear that EPA could have chosen not to issue an endangerment finding after *Massachusetts v. EPA* given the scientific understanding of climate change.

⁴³ H.R. Rep. No. 112-50, at 14-15 (2011-2012) <https://www.congress.gov/congressional-report/112th-congress/house-report/50>. The Committee appears to be unaware of a report on global warming Commissioned by President Lyndon B. Johnson that was communicated to the Congress in 1965. See, Statement by the President in Response to Science Advisory Committee Report on Pollution of Air, Soil, and Waters (Nov. 6, 1965) <https://www.presidency.ucsb.edu/documents/statement-the-president-response-science-advisory-committee-report-pollution-air-soil-and>.

⁴⁴ Roll Call 249, (April 7, 2011) (approved on a vote of 255-172) <http://clerk.house.gov/evs/2011/roll249.xml>.

⁴⁵ S.Amdt.183 to S.493, 112th Cong. (2011).

no indication that he believed – or that anyone believed – that the EPA and state regulations he was seeking to overturn were invalid.⁴⁶ The Energy Tax Prevention Act was not enacted.

IV. The Agencies have Misinterpreted Legislative History Regarding Qualification of State Tailpipe Standards as “Other Motor Vehicle Standards of the Government”

The NHTSA/EPA Proposal also proposes to conclude that State tailpipe standards (whether for greenhouse gases or for other pollutants) do not qualify as “other motor vehicle standards of the Government” under 49 U.S.C. 32902(f). In order to reach this conclusion, the agencies rely upon a House Committee Report from 1994 when Congress codified transportation provisions of title 49 United States Code.⁴⁷ The agencies’ argue that the legislative history associated with this 1994 law supports their proposed conclusion. However, the agencies are wrong to rely upon this legislation as providing any useful legislative history.

The legislation enacted in 1994 was a part of Congress’ ongoing effort to establish a positive law codification of existing law.⁴⁸ This effort is carried out by the Office of the Law Revision Counsel (OLRC). The codification process is a time-consuming, consensus-building process designed to ensure that the original policy, intent, and purpose of the legislation is not changed at all. The OLRC website explains:

Positive law codification by the Office of the Law Revision Counsel is the process of preparing and enacting a codification bill to restate existing law as a positive law title of the United States Code. The restatement conforms to the policy, intent, and purpose of Congress in the original enactments, but the organizational structure of the law is improved, obsolete provisions are eliminated, ambiguous provisions are clarified, inconsistent provisions are resolved, and technical errors are corrected.⁴⁹

⁴⁶ Statement of Sen. McConnell on amendment 183 <https://www.congress.gov/congressional-record/2011/03/15/senate-section/article/S1620-2>.

⁴⁷ Safer Affordable Fuel-Efficient Vehicles Rule, 83 Fed. Reg. 43210 (proposed Aug. 24, 2018)(relying on enactment of H.R. 1758, 103rd Cong. (1994)).

⁴⁸ H.R. 1758, 103rd Cong. (June 10, 1994) (effective July 5, 1994).

⁴⁹ Positive Law Codification, Office of the Law Revision Counsel, <http://uscode.house.gov/codification/legislation.shtml> (accessed on October 21, 2018)(emphasis added).

The title of the 1994 legislation the agencies rely upon explicitly states that the purpose of the legislation is “To revise, codify, and enact without substantive change certain general and permanent laws....”⁵⁰ Therefore, the agencies are simply wrong to conclude that Congress intended to change federal policy regarding this matter in 1994 and are wrong to rely upon this bill to provide any useful legislative history that could guide interpretation of EPCA.

V. Conclusion

Preserving EPA’s authority as interpreted by the Supreme Court was not Congress’ only auto-sector policy response in EISA. Congress was not unsympathetic to the fact that the automobile industry would need to improve the vehicles it brought to market due to the CAFE and Clean Air Act requirements. Pollution would be curbed and consumers would save money at the pump, but capital investments would be required.

Accordingly, EISA contained provisions to offer federal financial assistance to the automakers. The legislation included grants to modernize existing domestic manufacturing facilities to make less polluting, more efficient vehicles; loan guarantees for advanced battery and fuel-efficient parts manufacturing; and a new incentive program for advanced technology vehicles manufacturing. These provisions made billions of dollars in assistance available for the automakers. As an important side note, these provisions helped Ford avoid bankruptcy during the economic downturn of 2008 and were important in the early years of Tesla.

Since the *Massachusetts* ruling, Congress has affirmatively enacted legislation to protect the ruling, provided incentives for industry to retool for lower emitting vehicles, and rejected numerous proposals to limit or overturn it.

Therefore, the agencies should not finalize the conclusion that California is preempted from establishing and enforcing greenhouse gas emissions standards pursuant to section 209 of the Clean Air Act.

⁵⁰ H.R. 1758, 103rd Cong. (1994)(emphasis added).

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OCT 26 2018

Mr. Andrew Wheeler
Acting Administrator
United States Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460-1101A

Ms. Heidi King
Deputy Administrator
National Highway Traffic Safety Administration
1200 New Jersey Avenue, SE
Washington, DC 20590

RE: NHTSA-2018-0067-5679; EPA-HQ-OAR-2018-0283

Dear Acting Administrator Wheeler and Deputy Administrator King:

In New York State, we value health and prosperity; hard work today for the safety of tomorrow; and preparing for impacts of climate change while addressing and stopping the causes. It is because of these values that New York State rejects the very premise of the "SAFE" Rule and oppose the implementation of any regulations that weaken federal emission standards. If finalized, the Rule will roll back federal emission standards for motor vehicles, resulting in devastating impacts to public health and environmental quality.

The misnamed "SAFE" proposal is anything but safe for the American public, environment and economy. It is unsafe to the American people, particularly our youth, who will bear the ruinous impacts of wildfires, droughts, extreme heat and unprecedented storms resulting from out-of-control climate change. It is unsafe to all Americans, particularly the elderly and children and low income residents of our inner cities, who will be sickened by the continuing unchecked pollution from the burning of fossil fuels. And it is unsafe to American workers and businesses who will spend more on gasoline, and lose jobs as the United States falls further behind the rest of the world in building the clean energy future.

In proposing this Rule, the Trump administration is taking a huge step backward and is abandoning its responsibility to protect all Americans from the climate change crisis that threatens our citizens, our economy, and our future. New Yorkers know firsthand the devastating impact of the extreme weather events that are clearly linked to the changes in our climate. Hurricane Sandy caused unprecedented damage across New York State and we are not alone. Virtually every state or territory in our Nation – from

2.

California to Puerto Rico – has been struck by hurricanes and other extreme storms worsened by climate change or record breaking wildfires caused by extreme heat and drought. While these events highlight the urgent need to increase our commitment to addressing climate change, the Trump administration is moving in the opposite direction by proposing standards that will allow emissions from transportation – the nation's largest emission sector – to increase, admittedly contributing to a projected seven-degree increase in global temperatures.

In addition to the dire environmental consequences of this proposal, the Rule ignores settled law and fundamental principles of federalism in proposing to preclude California, New York and other states from continuing to implement standards that protect the environment and protect our own residents from the worsening impacts of climate change and harmful air pollution. Enclosed please find our detailed comments on this egregious proposal. New York will not stand by and sacrifice our prosperous future to the short-term interests of the fossil fuel industry. I urge you to do the right thing and abandon this irresponsible, illegal and immoral proposal.

Sincerely,



Basil Seggos
Commissioner

Enclosures

Comments on EPA/NHTSA Proposed Rulemaking

The record from the mid-term review and Technical Assessment Report clearly shows that the existing greenhouse gas (GHG) and corporate average fuel economy (CAFE) standards are technologically and economically feasible and achievable today and the proposed rollback is arbitrary and capricious. NHTSA and EPA (the “agencies”) state “CAFE and CO₂ standards have the power to transform the vehicle fleet and affect Americans’ lives in significant, if not always obvious, ways.”¹ As explained below, the deleterious impacts on the Americans’ lives from the proposed Rule are, in fact, obvious and significant, and entirely preventable.

Failure to Comply with Climate Change Obligations

Under the Supreme Court’s decision in Massachusetts v EPA, 549 U.S. 497 (2007), and the endangerment decision that followed, EPA is obligated to establish standards to protect public health and welfare from the threat of climate change caused by increasing GHG levels. This proposal abdicates that responsibility.

The recent report of the International Panel on Climate Change, Global Warming of 1.5° C, demonstrates the urgency of accelerated action now to prevent potentially calamitous impacts of climate change.² If the United States and other nations do not take the climate threat seriously, we will face a future of flooding amid rising sea levels, wildfires and drought, more extreme storms, and dangerous heat waves within a few decades. The federal agencies ignore this existential threat in issuing this proposal that will increase, not reduce, the threat of climate change.

The proposed rule – combined with the ongoing attempted rollback of EPA’s other GHG mitigation regulations – is not designed to mitigate these climate change impacts. Instead of reducing emissions, the proposed alternative would increase GHG emissions from the transportation sector – the nation’s largest emission sector -- by 9.5% compared to the No Action Alternative. Because this proposal does nothing to mitigate the threat of climate change, it does not meet EPA’s statutory obligations under the Act and the Endangerment Finding.

As explained more fully below in the appended comments on the Draft Environmental Impact Statement (DEIS), the agency justifies its inaction by a distorted analysis attempting to show that the climate impacts of the proposal will make a *de minimis* contribution to the temperature increases that will be experienced if the rest of the world fails to take action to address climate change. Put simply, EPA assumes that global temperatures will increase by 7 degrees anyway – a level that will be catastrophic to the planet – so the additional contribution of this proposal does not matter. This analysis suffers from many defects. First, the transportation sector is the largest emission sector in the United States, the world’s second largest source of emissions. Reducing emissions from the transportation system in the United States is therefore one of the most substantial ways of addressing climate change and preventing the global catastrophe that would accompany a global GHG concentration of more than 700 ppm. Conversely, a 9.5% increase in emissions from this globally significant sector is among the more substantial steps backward that can be envisioned. Second, EPA errs by viewing this action in isolation from other actions to address climate change, including its own rollback of the Clean Power Plan and methane regulations, and its abandonment of efforts to address hydrofluorocarbon emissions. Third,

¹ U.S. EPA and NHTSA Notice of Proposed Rulemaking (NPRM). The Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks. August 2, 2018. Pg 6.

² IPCC Special Report on Global Warming of 1.5°C (SR15) <http://www.ipcc.ch/report/sr15/>

because United States manufacturers sell vehicles worldwide, the deceleration of technology development in the United States will have impacts far beyond an increase in emissions from the United States transportation sector.

In addition, EPA attempts to justify its rollback by greatly understating the benefit of emission reductions measured by the social cost of carbon. By not considering the global impacts of carbon dioxide (CO₂), a global pollutant, EPA is signaling to other nations not to consider the benefits of their emission-reducing actions on the United States. This shortsighted approach will ensure that emission reductions globally are undervalued, leading to the global catastrophe forecasted by EPA's assumption of 7 degrees warming. In addition, EPA's use of a 7 % discount rate devalues the benefit of action now, placing more of a burden on future generations. More detail on the proposal's illogical and shortsighted analysis is in the appended comments on the Draft Environmental Impact Statement (DEIS).

Even NHTSA's own assessment in Preliminary Regulatory Impact Analysis (PRIA) shows cumulative GHG emission increases, in addition to CO₂-specific emission increases. In particular, the estimated cumulative GHG emissions through model year (MY) 2029, in Table 10-82, shows that in addition to CO₂ emissions increasing by 872 million metric tons, methane emissions will increase by 1,520 thousand metric tons, and nitrous oxide emissions will increase by 10.7 thousand metric tons. These non-CO₂ emissions will result in substantial damage to the environment and society. While the societal costs of GHG emissions are not presented, these emissions will have costs to society as a whole.³ Additionally, methane emissions lead to tropospheric ozone formation, an impact that is not captured in the DEIS or PRIA. NHTSA/EPA fails to properly explain the full impact of the proposal because of the lack of an assessment that utilizes the global societal costs of all GHG emissions, and does not evaluate the impact of emissions beyond those covered by societal costs.

The proposal appears to result in the lock-in of existing technologies by not promoting development of more efficient propulsion systems. With MY2021-2026 vehicles apparently remaining in service for up to 40 years⁴, these vehicles will continue to emit greenhouse gases in greater amounts than those in the No Action alternative. This proposal will cause a delay in the transition to more efficient vehicles which will only need to occur more rapidly in the future and at a greater cost if society intends to avoid the most severe impacts of climate change.

NHTSA and EPA Failure to Meet Statutory Requirements

With this proposal, EPA and NHTSA are shirking their statutory responsibilities under the Clean Air Act (CAA) and EPCA. The agencies take great liberties with statutory and case law, proceeding in contradiction with federal court decisions - squarely on point with the issues raised - that have been the law of the land for the last 10 years, including the Supreme Court's decision in Massachusetts. Their unreasonable, strained, and simply incorrect interpretation of both EPCA and the CAA is "arbitrary, capricious, or manifestly contrary to the statute."⁵

³ For simplicity, if the emissions happen in the year 2030 and the social cost of methane is \$1600 (2007\$) per ton at 3% discount rate, this would result in costs exceeding 2.4 billion dollars and another 200 million dollars related to nitrous oxide emissions.

⁴ Vehicle lifetime is described in multiple variations through the proposal from being 40 years to an average of 15 years to being split into first owner lifetime to used vehicle lifetime replacement for new vehicle. This shifting between definitions calls into question the reasonableness of the various models used in the notice as they appear to be based on different definitions of vehicle lifetime.

⁵ Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc. 467 U.S. 837, at 844 (1984).

Analysis in Support of Comments of the California Air Resources Board on the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks

Docket ID: EPA-HQ-OAR-2018-0283; NHTSA-2018-0067;
NHTSA-2017-0069



October 26, 2018

vehicles were required to comply with such standards for a specified period of use (useful life), defined as five years or 50,000 miles, whichever first occurs. Those statutory directives corresponded to emissions standards of 0.41 g/mi of hydrocarbons and 3.4 grams per mile for carbon monoxide for 1975 vehicles, and 0.4 g/mi of NO_x for 1976 model year vehicles.

Congress recognized that the statutorily mandated emissions reductions comprised aggressive, technology forcing requirements, and accordingly also enacted safety valve provisions that allowed vehicle manufacturers to request the EPA Administrator to suspend the effective dates of the statutorily prescribed emission standards for one year. The EPA Administrator could only grant a suspension request if he or she determined that the suspension was essential to the public interest, that the applicant had made good-faith efforts to meet the standards, and if the applicant established that the necessary control technology was not available for a sufficient period of time to achieve compliance. Moreover, Congress authorized the National Academy of Sciences (NAS) to assess the technical feasibility of achieving the statutorily mandated emission standards, and specified that the EPA Administrator could not grant a suspension request if the “study and investigation” of the NAS indicated that the requisite control technology was available. If the Administrator granted a request to suspend the statutory emission standards, he or she was required to simultaneously prescribe interim emission standards.

The stringent emission reductions mandated by the 1970 Amendments effectively required most vehicle manufacturers to install catalytic converters on their 1975 model year vehicles in order to reduce the quantities of hydrocarbon and carbon monoxide present in vehicle tailpipe exhaust to acceptable limits. However, vehicle manufacturers asserted that they did not possess extensive knowledge or experience regarding the capabilities of catalytic converter technology to reduce vehicular emissions, and further expressed doubts whether advancements in catalytic converter technology could be developed and successfully implemented in time to permit them to install sufficiently robust converters on all of their 1975 model year production vehicles.

2. CARB and EPA adopted exhaust emission standards for 1973 and subsequent model year light-duty vehicles.

With statutory authorities firmly in place, CARB again led the way, with EPA affirming from the start that more stringent California standards were appropriate even as it moved slowly on federal standards.

In 1971, EPA adopted the first federal emission standards for oxides of nitrogen (NO_x), 3 g/mi, for 1973 and 1974 model year light-duty vehicles. The federal exhaust emission standards for 1973 and 1974 model year light-duty vehicles were subsequently adjusted to reflect later modifications of test procedures to: 3.0 g/mi HC, 28.0 g/mi CO, and 3.1 g/mi NO_x.

CARB adopted emissions standards and associated test procedures for 1973 through 1976 model year light-duty vehicles, and requested a waiver for the 1973 through 1975 model year standards. The California emissions standards for 1973 and 1974 model year light-duty vehicles were: 1.5 g/mi HC, 23 g/mi CO, and 3.0 g/mi NO_x (1973), and 1.5 g/mi HC, 23 g/mi CO, and 2.0 g/mi NO_x (1974), respectively. The EPA Administrator granted a waiver for the emissions standards applicable to 1973 and 1974 model year vehicles, but withheld a decision regarding the 1975 model year standards “pending development of additional information by the Environmental Protection Agency.”¹²

3. Vehicle manufacturers requested and were granted suspensions of statutory federal 1975 hydrocarbon and carbon monoxide emission standards.

In 1972, vehicle manufacturers requested that the EPA Administrator suspend the statutory hydrocarbons and carbon monoxide emission standards for 1975 model year vehicles for one year, primarily asserting that the catalytic converter technology needed to ensure that 1975 model year vehicles would comply with the statutory emission standards would not be available within the time needed to ensure compliance with the standards. The EPA Administrator denied the requests, and the manufacturers appealed the denial to the U.S. Court of Appeals for the District of Columbia Circuit. The court held that the EPA Administrator had not sufficiently supported his determination that the catalytic converter control technology needed to comply with the emission standards would be available in the needed time, and remanded the matter to the EPA Administrator for further consideration.

The EPA Administrator subsequently conducted public hearings, determined that a suspension of the standards was warranted, and accordingly granted the manufacturers a one year suspension of the statutory 1975 emission standards. During the second round of the EPA hearings, vehicle manufacturers stated that catalyst technology was not sufficiently robust to ensure that their 1975 model year vehicles could comply with the statutory 1975 emission standards, and that even if they could equip vehicles with catalysts and certify those vehicles to the 1975 emission standards, the requirement to equip all production vehicles with catalytic converters would result in massive production problems.

The Administrator determined that although catalytic converter technology needed to meet the 1975 model year standards appeared to be “effective, durable, and reasonably inexpensive,” neither the automotive nor the catalyst industry had significant experience in mass producing the needed quantity of catalysts, which presented a risk that the nationwide production of vehicles could be terminated, due to inability to procure acceptable catalysts, assembly-line problems, or both. The Administrator further found that overall, the automotive industry could only meet the 1975 standards with 66 percent

¹² 37 Fed.Reg. 8,128 (April 25, 1972).

of vehicle sales, which was not sufficient to meet the basic market demand for the vehicles, and accordingly granted manufacturers a one year suspension from the 1975 model year emission standards.

a. EPA authorized California to require catalytic converters on 1975 model year vehicles.

As previously discussed, the 1970 Amendments required that if the Administrator granted a suspension of the statutory emission standards, he or she was required to simultaneously prescribe interim emission standards for 1975 model year vehicles that “reflected the greatest degree of emission control ... achievable by the application of technology which the EPA Administrator determines is available, giving appropriate consideration to the cost of applying such technology within the period of time available to manufacturers.” The EPA Administrator determined it was appropriate to establish two separate sets of interim standards – national interim standards that would not require manufacturers to install catalysts on vehicles certified in all states other than California, and a more stringent set of interim standards that would require manufacturers to equip all of the vehicles they intended for sale in California with catalysts. The interim national 1975 model year emission standards were 1.5 g/mi hydrocarbon, 15 g/mi carbon monoxide, and 3.1 g/mi NOx.

The EPA Administrator implemented the more stringent interim standards in conjunction with also granting California a waiver for its 1975 model year light-duty vehicle emission standards, therefore authorizing California to enforce emission standards of 0.9 g/mi hydrocarbon, 9.0 g/mi carbon monoxide, and 2.0 g/mi of NOx. CARB subsequently requested that EPA grant it a waiver allowing California to enforce the waived 1975 model year emission standards to 1976 model year vehicles. EPA granted that waiver request on September 16, 1974.

The Administrator reasoned that this approach (of establishing less stringent national interim standards and more stringent California interim standards) comprised the most reasonable means of ensuring that the requisite compliance technology would be developed and installed on motor vehicles to meet the statutory standards. Requiring manufacturers to equip their California vehicles with catalysts before mandating nationwide installations of catalysts was entirely consistent with both California’s trend of establishing more stringent emission standards than comparable federal emission standards, and with the waiver provisions of the Clean Air Act that expressly authorized California to adopt and enforce more stringent state standards. Manufacturers would be provided the opportunity to gain experience with the mass production of catalytic converters for their full range of motor vehicles, which would therefore maintain the industry’s momentum towards achieving advances in improving and installing catalytic converters on their nationwide fleet of vehicles, while also facing minimized levels of risk. This momentum would “lay the necessary foundation for full-scale of catalysts in 1976.” Representatives from Ford and General Motors testified that limiting the more stringent interim standards to California vehicles would allow their companies to test the

necessary mass production processes on a more limited scale, which would enable better quality control and the ability to remedy identified deficiencies, and to address in-use failures of catalyts.

The Administrator specifically noted California's expertise in regulating motor vehicles as a factor in his determination. "The selection of California for initial introduction of catalytic converters has other advantages as well. Because of California's history of leadership in emission control, that State has in existence a legal and regulatory framework for implementing and enforcing a set of standards different from those applicable outside California." Furthermore, authorizing California to implement more stringent requirements would continue to spur advancements in emissions control technology that could benefit the nation. The Administrator specifically noted that two Japanese manufacturers planned to market vehicles that did not require catalytic converters to meet stringent emission standards. Notably, Honda had developed a Compound Vortex Controlled Combustion engine that had demonstrated a capability of complying with the 1975 statutory standards without requiring a catalytic converter, but the available information indicated it would require more than five years for other vehicle manufacturers to modify their production lines to install that technology on their vehicles. The EPA Administrator stated his conviction that "the best way to accelerate development and use of a superior technology is to put strict emissions control requirements into effect as soon as they are technologically feasible. ... When this happens, other companies will be spurred by competitive forces to adopt it." "Where regulatory requirements for emission control challenge conventional technology to its limits, the marketplace will in my judgment provide a strong lever for causing a shift into any superior technology."

Finally, the EPA Administrator considered and rejected claims that catalytic converters would significantly adversely affect fuel economy and vehicle driveability. Information submitted during the hearing indicated that catalytic converters would reduce fuel economy on 1975 model year vehicles by more than 4 percent, and further indicated that 1975 model year vehicles would not exhibit degraded driveability compared to 1973 model year vehicles.

4. EPA suspended the 1976 statutory standard for NO_x.

Approximately three months later, the EPA Administrator granted vehicle manufacturers a requested one-year suspension of the 1976 statutory NO_x emission standards, largely based on his determination that the technology needed to comply with the statutory emission standards for NO_x (a reducing catalyst) would not be available by the 1976 model year. Information indicated that reducing catalysts required more precise control of air to fuel ratios, and were less durable than the oxidation catalysts required to control hydrocarbon and carbon monoxide emissions. As required by the 1970 Amendments, the Administrator simultaneously issued interim NO_x standard for 1976 model year vehicles of 2.0 g/mile. However, as discussed below, these standards were further postponed until the 1978 model year.

5. The national energy crisis led Congress to delay the statutory 1975 and 1976 exhaust emission standards until 1977 and 1978.

In 1974, the nation experienced an energy crisis that led Congress to enact legislation (the Energy Supply and Environmental Coordination Act of 1974 (ESECA)), to "...assist in meeting the essential needs of the United States for fuels, in a manner which is consistent, to the fullest extent practicable, with existing national commitments to protect and improve the environment, and (2) to provide requirements for reports respecting energy resources." ESECA, in pertinent part, delayed and weakened the federal vehicle emission standards promulgated by the 1970 Amendments of the Clean Air Act. Notably, as described in greater detail below, California continued to promulgate increasingly stringent vehicle emission standards during this period, with EPA support. Moreover, Congress expressly noted California's demonstrated progress in reducing vehicle emission standards when it enacted the 1977 Amendments to the federal Clean Air Act.

Section 5 of ESECA extended the applicability of the interim 1975 model year standards for hydrocarbon and carbon monoxide emissions to 1976 model year vehicles, and delayed the applicability of the statutory 1975 model year standards for hydrocarbon and CO emissions until 1977. ESECA also delayed the applicability of the statutory 1976 model year standards for NO_x emissions until 1978, extended the applicability of the interim 1976 model year NO_x standards to both 1975 and 1976 model year vehicles, and decreased the stringency of the 1977 model year NO_x emission standard to 2.0 g/mile. Finally, ESECA authorized manufacturers to request that the EPA Administrator suspend the hydrocarbon and carbon monoxide emission standards for 1977 model year vehicles for one year, and required the EPA Administrator to promulgate interim emission standards if he or she granted such suspension requests. These provisions notably did not extend to California's vehicle emission standards or to the waiver provisions of Clean Air Act sections 209(a) or 209(b), and as discussed below, CARB continued to promulgate more stringent standards even as Congress delayed and relaxed the stringency of federal emission standards through its enactment of ESECA. Section 10 of ESECA directed the EPA Administrator and the Secretary of Transportation to conduct a joint study and subsequently issue a report regarding the "the practicability of establishing a fuel economy improvement standard of 20 per centum for new motor vehicles manufactured during and after model year 1980." The study and report were required to address factors including, but not limited to, technological problems and economic costs of meeting such standard, and the impact of applicable emission standards.

6. Congress enacted the Energy Policy and Conservation Act (EPCA) in 1975, building upon the foundation laid by ESECA.

The following year, Congress enacted the Energy Policy and Conservation Act (EPCA), which established a comprehensive and systematic national energy policy that sought to achieve increasing domestic energy production and supply, reducing energy demand,

and the more efficient use of energy. EPCA expressly expanded upon the energy policies of prior energy legislation, including ESECA.

Title III of EPCA authorized the Secretary of Transportation to prescribe fuel economy standards for automobiles, and statutorily prescribed average fuel economies beginning at 18 miles per gallon for 1978 model year automobiles and leading to 27.5 miles per gallon for 1985 model year automobiles.

Section 509(a) of EPCA stated “[w]henver an average fuel economy standard established under this part is in effect, no State or political subdivision of a State shall have authority to adopt or enforce any law or regulation relating to fuel economy standards or average fuel economy standards applicable to automobiles covered by such Federal standard.” However, section 502(d) allowed any vehicle manufacturer to apply to the Secretary of Transportation for a modification of an average fuel economy standard for model years 1978 through 1980 if it could show the likely existence of a “Federal standards fuel economy reduction.” As NHTSA acknowledges in the NPRM, “Federal standards fuel economy reduction” was defined as including California vehicle emission standards that had been granted a waiver by EPA pursuant to Clean Air Act section 209(b).¹³

In *Green Mountain Chrysler Plymouth Dodge Jeep, et. al. v. Crombie*,¹⁴ a federal district court determined that it need not address plaintiffs’ claim that EPCA preempted a Vermont regulation that adopted GHG emission standards for 2009 and newer model year passenger vehicles. The court reasoned that Congress, in enacting section 502(d) of EPCA, did not intend to restrict California’s preexisting authority to adopt and enforce separate vehicle emission standards when it enacted EPCA, but rather intended that NHTSA must take California emission standards that have been issued a waiver under section 209(b) of the Clean Air Act into account when it promulgates fuel economy standards.

7. EPA suspended hydrocarbon and carbon monoxide emission standards for 1977 model year vehicles for one year.

On May 20, 1975, the EPA Administrator, acting pursuant to the authority of section 5(c) of ESECA, granted an industry request to suspended the federal hydrocarbon and CO emission standards for 1977 model year vehicles for one year, and simultaneously promulgated interim 1977 model year emission standards of 1.5 g/mi hydrocarbon, 15 g/mi CO, and 2.0 g/mi NOx.

During the hearing to consider the suspension of the 1977 standards, information was presented indicating that the oxidation catalysts needed to control hydrocarbon and carbon monoxide emissions also converted sulfur in gasoline to sulfuric acid, which could result in harmful levels of sulfuric acid mist near freeways and other facilities that

¹³ 83 Fed.Reg. 42986, 43210 (Aug. 24, 2018).

¹⁴ 508 F.Supp.2d 295 (D. Vt. 2007).

attract large numbers of vehicles. This posed a concern that the harmful effects of sulfuric acid mist would outweigh the benefits associated with the reductions of hydrocarbons and carbon monoxide, and the EPA Administrator therefore determined that the nation's interests would be best served by maintaining the interim 1977 standards until the sulfuric acid mist question was resolved.

8. EPA granted the waiver for California's 1977 model year emission standards, recognizing the statutory directive to defer to California.

During this time period, as both Congress and EPA were delaying and weakening the stringency of motor vehicle standards, CARB was continuing to promulgate more stringent California vehicle emission standards. CARB adopted California 1977 model year standards of 0.41 g/mi hydrocarbon, 9.0 g/mi CO, and 1.5 g/mi NOx, and requested a waiver for these standards on March 26, 1975. EPA granted CARB's waiver request on May 20, 1975.¹⁵

In considering that waiver request, EPA Administrator Train discussed the legislative history associated with Congress' enactment of the waiver provision of Section 209(b) of the Clean Air Act, and stated that history supported three major points: (1) Congress believed that California was experiencing 'compelling and extraordinary' conditions that justified a waiver from the preemption from Section 209(a) of the Clean Air Act, (2) Congress intended that the federal government would not second-guess the wisdom of state policy in order to preserve the California motor vehicle emission control program in its original form; and (3) that Congress intended that the standard of EPA's review of California's request for a waiver is narrow.

Administrator Train then noted that EPA's waiver decisions were consistent with the aforementioned Congressional intent, and that former EPA Administrator Ruckelhaus had stated:

The law makes it clear that the waiver request cannot be denied unless the specific findings designated in the statute can properly be made. The issue of whether a proposed California requirement is likely to result in only marginal improvement in air quality not commensurate with its cost or is otherwise an arguable unwise exercise of regulatory power is not legally pertinent to my decision under section 209, so long as the California requirement is consistent with section 202(a) and is more stringent than applicable Federal requirements in the sense that it may result in some further reduction in air pollution on California.

40 Fed.Reg. 23102, 23104 (citing 36 Fed.Reg. 17458 (Aug. 31, 1971)).

¹⁵ 40 Fed.Reg. 23102, 23103 (May 28, 1975).

Administrator Train then stated that, consistent with the above mentioned considerations, he would not deny California's waiver based on the possibility that California's standards could result in the emissions of sulfuric acid mist.

Accordingly, I do not view arguments of increased cost or fuel economy penalties, or only marginal improvements in air quality, advanced by some as arguments against the waiver, as controlling in my decision here. For similar reasons, I do not view the question whether the proposed California standards may result in emissions of sulfuric acid mist as controlling given the current state of our knowledge. The structure and history of the California waiver provision clearly indicate both a Congressional intent and an EPA practice of leaving the decision on ambiguous and controversial matters of public policy to California's judgment. As I indicated in my suspension decision, any assessment of the magnitude of the automobile sulfate risk and measures to deal with it clearly falls under that heading.

40 Fed.Reg. 23102, 23104 (May 28, 1975)

The EPA Administrator found that he could not make any of the findings that would compel him to deny California's request for a waiver, and consequently granted the waiver despite concerns expressed by vehicle manufacturers that the California 1977 model year standards would adversely affect drivability, experience an 8 to 24 percent decrease in fuel economy, and reduce new vehicle sales as a result of the waiver decision.

9. Congress, in 1977, amended the Clean Air Act.

In 1977, Congress enacted significant amendments to the Clean Air Act. In enacting the 1977 Amendments, Congress had the opportunity to restrict the Clean Air Act's waiver provision. However, Congress – at the height of its consideration of fuel economy statutes and their relationship to air quality -- instead elected to expand California's ability to adopt and implement its own complete program to control motor vehicle emissions. Congress expressed in the House Committee report for the 1977 Clean Air Act Amendments that “[t]he Committee amendment is intended to ratify and strengthen the California waiver provision and to affirm the underlying intent of that provision, i.e., to afford California the broadest possible discretion in selecting the best means to protect the health of its citizens and the public welfare.”

Prior to the 1977 Amendments, the EPA Administrator was required to grant California a waiver unless he or she found that California did not require state standards that were more stringent than applicable federal standards to meet compelling and extraordinary conditions, or unless he or she found such state standards and accompanying enforcement procedures were not consistent with section 202(a) of the Clean Air Act. The 1977 Amendments modified the waiver criteria to require the Administrator to grant California a waiver unless *California*, not the Administrator, determined that its state standards are, *in the aggregate*, at least as protective as applicable federal standards.

1975 model year vehicles as initially established by the 1970 Amendments to the Clean Air Act (7.0 g/mi) until the 1981 model year, and relaxed the NOx emissions standard for 1976 model year vehicles as initially established by the 1970 Amendments to the Clean Air Act from 0.4 g/mi to 1.0 g/mi, and extended the effective date of that standard to 1981 model year vehicles. Congress also enacted provisions allowing manufacturers to request waivers of the carbon monoxide standard for 1981 and 1982 model year vehicles, and allowing qualifying small manufacturers to certify 1981 and 1982 model year vehicles to a 2.0 g/mi NOx standard.

The following table compares the federal emission standards enacted by the 1977 Amendments to the Clean Air Act and the corresponding California emission standards for model year 1977 through 1981 light-duty motor vehicles:

Table III-2 1977 through 1981 Primary Light-Duty Motor Vehicle Emission Standards
(all standards expressed in grams/mile)¹⁶

Model Year	Federal			California		
	Hydrocarbon	Carbon Monoxide	NOx	Hydrocarbon	Carbon Monoxide	NOx
1977	1.5	15	2.0	0.41	9.0	1.5
1978	1.5	15	2.0	0.41	9.0	1.5
1979	1.5	15	2.0	0.41	9.0	1.5
1980	0.41	7.0	2.0	0.41	9.0	1.0
1981	0.41	3.4	1.0	0.41	3.4	1.0
1982	0.41	3.4	1.0	0.41	7.0	0.4
				0.41	7.0	0.7 ¹⁷

This table illustrates that the federal emissions standards for NOx do not become sufficiently stringent to require the installation of oxidation catalytic converters until 1981 – four years after California’s 1977 model year standards took effect. The table also demonstrates that even as both Congress and EPA relaxed and delayed the federal light-duty vehicle emission standards, CARB continued its long established practice of adopting more stringent emission standards and other emission related requirements in order to address the compelling and extraordinary conditions affecting California.

¹⁶ California standards for 1977 and 1978 model year – Title 13, California Administrative Code (CAC) § 1955.1 (1983); for 1979 model year vehicles in 13 CAC 1959.5, (1988) for 1980 model year vehicles in Title 13, California Code of Regulations (CCR) § 1960 (2013), and for 1981 and 1982 model years, 13 CCR §§ 1960.1(a) (2013), 1960.1(b) (2013). Federal standards for 1977 through 1979 model year vehicles are set forth at 40 Fed.Reg. 32906, 32911 (June 28, 1977) [40 CFR §077-8 (1977)], 40 Fed.Reg. 32906, 32930 (June 28, 1977) [40 CFR § 078-8].

¹⁷ This set of standards is optional. A manufacturer must select either the primary or optional set of standards for its entire product line of 1981 and 1982 models.

D. California continued to lead the nation in developing more stringent motor vehicle emission requirements throughout the 1980s.

1. California's motor vehicle emission standards for 1982 model year light-duty vehicles required compliance with a 0.4 g/mi NO_x emission standard.

That pattern continued through the 1980s; California moved the nation forward, and both Congress and EPA moved more slowly, while supporting California's continued authorities.

EPA granted CARB a waiver for the California 1979 and subsequent model year light-duty motor vehicle emission standards in 1978. CARB adopted those standards to address the "peculiar oxidant and NO₂ air quality problems in the California South Coast Air Basin." Although certain vehicle manufacturers testified that they lacked the technology needed to meet the primary 1982 model year standards, CARB testified that two manufacturers had already demonstrated compliance with the 1982 model standards with 1977 certification data. Acting EPA Administrator Blum stated she could not find that the technology needed to meet the 1982 model year standards could not be developed and applied in the lead time provided, or that the costs of compliance were sufficiently excessive, and accordingly granted the waiver.

The stringent 0.4 g/mi NO_x emission standard associated with the California 1982 model year standard required motor vehicle manufacturers to equip vehicles with increasingly sophisticated emission control and fuel metering systems, including three-way catalytic converters, fuel injection systems, and oxygen sensors. It is especially notable that California was able to require the introduction of such controls years before the federal light-duty motor vehicle standards became sufficiently comparable in stringency to California's standards. In fact, the federal light-duty motor vehicle emission standards did not prescribe a 0.4 g/mi NO_x standard until the 1994 model year. This example, particularly when viewed in the context of the continued delays and weakening of the federal motor vehicle emissions standards as discussed above, illustrates the benefits resulting from California's ability to establish its separate motor vehicle emissions control program that is free from the constraints of the federal motor vehicle emissions control program, and is also consistent with the benefits resulting from EPA Administrator Train's decision in 1973 to allow California to manufacturers to equip their vehicles with catalytic converters despite manufacturers' claims that catalytic converter technology was not sufficiently developed or available in the quantities needed for installation on all production vehicles. As previously discussed, that California requirement enabled manufacturers to gain experience and knowledge with catalytic converters, and provided CARB information regarding the capability of future technical advancements needed to achieve even more stringent future emissions requirements, such as the primary 1982 model year emissions standards. It is difficult to imagine how CARB would have obtained the knowledge and information needed to

support its assessment of technical feasibility of equipment needed to comply with the 1982 model year standards if it was subject to the same constraints imposed on EPA. Recall that EPA previously expressed that it was largely dependent on information supplied by vehicle manufacturers regarding the status and capability of future emission control technologies, and that it believed manufacturers were deliberately stalling their efforts to develop compliant technologies based on hopes that Congress would abolish the 0.4 g/mi NO_x standard.

2. CARB adopted diesel particulate matter standards for 1985 model year diesel-fueled light-duty vehicles.

In 1982, CARB amended California's exhaust emission standards for 1985 and subsequent model year diesel powered light-duty vehicles to ensure that more stringent particulate matter standards would be in effect in California 1985. EPA was also considering the adoption of essentially equivalent federal particulate matter emission standards for diesel-powered vehicles, but decided to delay a 0.2 g/mi particulate matter standard from the 1985 to the 1987 model year.

EPA determined that the requisite technology (trap oxidizer systems) would be widely available by the 1986 model year, but decided to delay the 0.2 g/mi particulate matter standard to 1987. CARB also determined that trap oxidizer systems would be available by the 1986 model year, but elected to adopt a 0.2 g/mi particulate matter standard for 1986 through 1988 model year vehicles. CARB further adopted a 0.08 g/mi particulate matter standard for 1989 and subsequent model year vehicles, and requested that EPA grant California a waiver for such standards. Motor vehicle manufacturers opposing California's waiver request asserted that California did not meet waiver criterion of Clean Air Act section 209(b)(1)(B), that California needs "such State standards to meet compelling and extraordinary conditions".

In considering CARB's waiver request, EPA extensively discussed the "compelling and extraordinary" criterion of Clean Air Act section 209(b)(1)(B). EPA determined that its traditional interpretation of this criterion, that it concerns California's need for its own motor vehicle program, as opposed to its need for the particular standards at issue in the waiver, was supported by both the statutory text and legislative history indicating that Congress, in enacting the initial waiver provision, was expressly aware that by authorizing California to enact its own motor vehicle program, it would require the automotive industry to comply with two separate sets of requirements. EPA accordingly concluded that "[t]he 'need' issue thus went to the question of standards in general, not the particular standards for which California sought [a] waiver in a given instance," and further noted: "It is evident from this history that "compelling and extraordinary conditions" does not refer to levels of pollution directly, but primarily to the factors that tend to produce them: geographical and climatic conditions that, when combined with large numbers and high concentrations of automobiles, create serious air pollution problems."

EPA then considered arguments advanced by manufacturers that Clean Air Act section 209(b)(1)(B) applies to California's need for the particular particulate emission standards. EPA determined that even under this alternative interpretation, the manufacturers did not meet their burden of demonstrating that California did not satisfy the compelling and extraordinary criterion.

EPA expressly rejected manufacturer claims that the section 209(b)(1)(B) criterion is limited to emission standards for pollutants that are related to California's smog problem (i.e., hydrocarbons and oxides of nitrogen), and that consequently California's standards for particulate emissions should not be afforded the "benefit of the Congressional presumptions which supported all prior waivers."¹⁸

If Congress had been concerned only with California's smog problem, however, it easily could have limited the ability of California to set more stringent standards to hydrocarbons and oxides of nitrogen—the only two regulated automotive pollutants substantially contributing to that phenomenon. Instead, Congress took a broader approach consistent with its goal of allowing California to operate its own comprehensive program.

49 Fed.Reg. 18887, 18890 (May 3, 1984)

EPA cited legislative history indicating Congress, in enacting the waiver provision, was aware that California might seek to control non-smog pollutants including carbon monoxide, lead, and particulate matter.¹⁹

EPA also rejected claims that California must demonstrate that it suffers from a "unique" particulate problem (i.e., one that is demonstrably worse than the problem experienced in the rest of the country) to qualify for a waiver for its particulate emission standards. "However, as CARB points out, there is no indication in the language of section 209 or the legislative history that California's pollution problem must be the worst in the country, for a waiver to be granted."

EPA further rejected claims that California failed to establish the necessity of its particulate standards because the State's emissions standards would allegedly produce only minor reductions of particulate matter emissions.

Arguments concerning ... the marginal improvements in air quality that will allegedly result [from implementation of the standards], and the question of whether these particular standards are actually required by California ... fall within the broad area of public policy. The EPA practice of leaving the decision on such controversial matters of public policy to

¹⁸ 49 Fed.Reg. 18887, 18890 (May 3, 1984).

¹⁹ Ibid., 113 Cong. Rec. 30591 (Nov. 2, 1967) (Rep. Herlong).

California's judgment is entirely consistent with the Congressional intent

....

49 Fed.Reg. 18887, 18891 citing 41 Fed.Reg. 44209, 44210 (October 7, 1976).

EPA additionally noted that CARB had established that California was experiencing unique limited visibility problems resulting from diesel particulate matter, and that diesel particulate matter, in combination with the high levels of ozone and oxides of nitrogen concentrations found in areas such as the South Coast Air Basin, potentially posed at least three unique public health problems. EPA then concluded that even if its finding “regarding the existence of ‘compelling and extraordinary conditions’ were focused only upon California’s particulate problem, [it] could not find that the opponents of the waiver had met their burden of proof to show that such conditions do not exist”.

EPA also found that CARB’s determination that trap oxidizers needed to meet the 0.2 g/mi particulate standard would be available in California by model year 1986 was not inconsistent with its own determination that trap oxidizers would be available in 1987. EPA’s forecast was based on the availability of trap oxidizers on a nationwide basis, whereas CARB’s forecast was based on availability of trap oxidizers in California. EPA noted it had historically granted California waivers that allowed California to require new technology prior to the nationwide implementation of that technology, and that this approach was consistent with EPA’s rationale in authorizing California to enforce requirements necessitating the use of catalytic converters on 1975 model year vehicles a year before they were required on federal vehicles, as that approach would ensure that trap oxidizers would be successfully implemented on a nationwide basis the following year.

EPA granted California a waiver for the 1975 and subsequent model year standards that included a 0.2 g/mi particulate standard for California 1986 through 1988 model year vehicles, and a 0.08 g/mi particulate matter standard for 1989 and subsequent model year vehicles. EPA subsequently adopted a federal 0.2 g/mi particulate standard for 1987 model year vehicles and would later adopt a 0.08 g/mi standard that would be fully required on 1995 model year vehicles.

3. California required On-Board Diagnostic (OBD) systems.

As CARB continued to adopt and implement more stringent motor vehicle emissions standards and other emissions related requirements, vehicle manufacturers increasingly relied on three-way catalytic converters to meet those emission standards. Because three-way catalytic converters are most effective if vehicles operate within a relatively narrow range of air to fuel ratio, manufacturers also began implementing fuel feedback systems to more precisely meter fuel into engines and also increasingly equipped their vehicles with emissions control equipment that was controlled by computers on the vehicles. Although new motor vehicles could demonstrate compliance with stringent emission standards when they were new, it was also critically important that those vehicles demonstrate compliance with the standards throughout the period that they

were actually operated. In 1985 CARB therefore first adopted regulations that required manufacturers to equip 1988 and newer model year vehicles equipped with three-way catalysis and feedback fuel systems to be equipped with on-board diagnostic (OBD) systems (OBD I systems).

OBD systems are primarily comprised of software that is used by a vehicle on-board computer to detect emission control system malfunctions as they occur. OBD I systems were required to detect malfunctions of the fuel metering system, exhaust gas recirculation system valve, on-board computer, and of emission control components that provided inputs into the on-board computer, and to notify the operator of such malfunctions by illuminating a light on the vehicle dashboard. EPA determined that the OBD I system requirements were within the scope of prior waivers issued to California in 1986.

Since 1988, both OBD systems and vehicle emission controls have become increasingly sophisticated. In 1989, CARB adopted more comprehensive OBD regulations that required all 1996 and newer model year light-duty vehicles and medium-duty vehicles and engines to be equipped with OBD systems (referred to as OBD II). The OBD II regulation prescribes much more comprehensive and detailed monitoring requirements than the OBD I regulation. For instance, OBD II systems must monitor for malfunctions including engine misfire, catalysis, oxygen sensors, evaporative systems, exhaust gas recirculation systems, secondary air systems, fuel systems, and all electronic powertrain components that can affect emissions when malfunctioning - virtually every component and system on a vehicle that can cause increases in emissions. OBD II systems must further timely notify the vehicle operator of a detected malfunction, and store a code in the computer that will aid a technician in identifying the likely cause of the malfunction. OBD II systems help to ensure that motor vehicles comply with applicable emission standards in real-world use throughout their entire life, not just when the vehicle or engine is being certified. CARB has regularly updated the OBD II regulation to amend the monitoring requirements of OBD II systems, and to establish OBD II specific enforcement requirements. EPA has granted California waivers for both the initial OBD II regulation and for subsequent amendments to the OBD II regulation.

EPA promulgated federal OBD requirements for federally certified light-duty vehicles and trucks in 1993, and later amended these requirements to require OBD systems on medium-duty vehicles by the 2008 model year. EPA's final rule with the latest modifications of the OBD requirements was published on February 24, 2009. A central part of the federal regulation is that, for purposes of federal certification of vehicles, EPA will deem California-certified OBD II systems to comply with the federal regulations. Historically, virtually every vehicle sold in the United States is designed and certified to California's OBD II requirements, in lieu of the federal OBD requirements.

outweighing the costs.⁵⁴⁵ The Agencies' proposal reverses this progress. It would yank away tools states, including California, need to comply with state and federal ambient air quality standards, and to meet climate mandates. The result is perverse: failure to comply with these standards has serious financial and public health consequences, yet EPA is using its authority to render these standards nearly impossible to meet, and especially so as climate change worsens air quality. Further, EPA is critically undermining a wide range of state laws and policies, developed in reliance upon its current standards and its adjudicatory decision to grant California a waiver for the current standards.

Such interference with states and their police power obligations to protect their publics on behalf of an executive agency is simply improper, raising the same profound separation of powers and federalism concerns we have already discussed. As the Supreme Court reminds us, the "States ... retain 'a residuary and inviolable sovereignty.'" The Federalist No. 39, at 245. They are not relegated to the role of mere provinces or political corporations, but retain the dignity, though not the full authority, of sovereignty."⁵⁴⁶ A core incident of sovereignty, recognized in the scheme of the federal Clean Air Act, is the ability to protect the public. Congress so recognized in general via its recognition of the central role of the states in air pollution prevention, and specifically with regard to its decision clearly to preserve and expand California's specific vehicle regulatory power.

At this stage, many state decisions turn upon these Congressional actions, made against the background of our federal system. "Although the Constitution grants broad powers to Congress, our federalism requires that Congress treat the States in a manner consistent with their status as residuary sovereigns and joint participants in the governance of the Nation."⁵⁴⁷ The Agencies' treatment of the states here – breaching a settled unified national program, ignoring decades of precedent, Congress's direction, and the evidence – is simply not consistent with the authorities of the states, including those reserved to them by the Act. The Agencies have created an entirely improper Catch-22 in which the states are stripped of the very authority which Congress relied upon them to use to fulfill their sovereign obligations.

e. States are required to prepare Implementation Plans under federal law.

The State Implementation Plan (SIP) is the instrument by which the states exercise their obligations under their public sovereign responsibilities and under federal law. A SIP is a federally enforceable plan for a state, which identifies how that state will attain and maintain a federal air quality standard. The federal Clean Air Act (CAA) sets out

⁵⁴⁵ See U.S. EPA's extensive studies on this point, available at: <https://www.epa.gov/clean-air-act-overview/benefits-and-costs-clean-air-act>.

⁵⁴⁶ *Alden v. Maine*, 527 U.S. 706, 714 (Kennedy, J.).

⁵⁴⁷ *Id.*, at 748.

requirements for EPA's adoption of air quality standards,⁵⁴⁸ as well as the required elements of SIPs.⁵⁴⁹ SIPs must identify both the magnitude of reductions needed and the actions necessary to achieve those reductions. SIPs also include a demonstration that: the area will make reasonable further progress toward attainment, is implementing reasonably available control technology on all major sources, has a program in place to address emissions from new stationary sources, and meets transportation conformity requirements.

In the Clean Air Act, the U.S. Congress developed a program based on science and implemented by state and local regulators to provide safe, healthy air to the American population. The scientific community is tasked to determine levels of pollution that are acceptable and will not adversely influence human health and local regulators are tasked to implement programs to lower the pollution-causing emissions. Understanding that science is an iterative process where discoveries lead to not only a better understanding of the actual dangers of pollution but also a new baseline of knowledge to investigate these dangers further, the Clean Air Act requires EPA to revisit the NAAQS on a regular 5-year cycle to verify that the NAAQS are in line with the most recent science.

Since setting the original ozone NAAQS, the NAAQS has been revised three times. The most recent 8-hour ozone NAAQS was set in 2015 at 70 ppb. Lowering ozone levels from the current 75 ppb to the more health-protective 70 ppb 8-hour ozone standard in California is predicted to reduce annual premature mortality by an estimated 72 to 120 deaths, asthma exacerbations for 160,000 people, and lost days at work and school by more than 125,000.⁵⁵⁰ Delaying implementation of the latest ozone NAAQS would harm the health and well-being of millions of people, not only in California but throughout the country. Simply put, meeting the ozone standard is a public health imperative.

The NAAQS⁵⁵¹ provide California with achievable goals to protect the health of Californians from health effects associated with air pollution. The Clean Air Act adds deadlines for meeting the NAAQS and consequences if these deadlines are not met. With its health-based air quality standards, meaningful deadlines, and requirements for comprehensive plans, the Clean Air Act has been the tool for achieving California's success in both clean air quality goals and economic success. The Clean Air Act requires early, comprehensive planning and any delays in implementing the Clean Air

⁵⁴⁸ 42 U.S.C. § 7409.

⁵⁴⁹ 42 U.S.C. § 7410.

⁵⁵⁰ *Regulatory Impact Analysis of the Final Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone*. U.S. EPA. Accessed on October 24, 2018. <https://www.epa.gov/sites/production/files/2016-02/documents/20151001ria.pdf>.

⁵⁵¹ California, like many states, has parallel state ambient air quality standards, for which it must also plan implementation steps. The Agencies' actions offend compliance with these standards in the same ways they undermine NAAQS compliance, and so invade State prerogatives in this regard as well.

and infrastructure development will be needed to continue to grow the market for light-duty ZEVs to meet the ZEV regulation.

g. The proposal increases criteria pollutant emissions.

CARB staff have estimated that the Agencies' proposal to rollback fuel economy and GHG standards can significantly impact California's criteria and GHG emissions in future years.

Passenger cars and light trucks are a major contributor to NOx emissions in California. The State's 39 million residents⁵⁵⁷ collectively own about 24 million passenger vehicles⁵⁵⁸ and drive more than most other Americans. Over ten million of these vehicles are in South Coast.⁵⁵⁹ The vast majority of these vehicles have internal combustion engines and use gasoline. The light-duty vehicle sector is projected to grow to approximately 30 million vehicles statewide by 2031. CARB's 2016 State Strategy for the SIP⁵⁶⁰ calls for reducing NOx emissions by approximately six tons per day from the light duty sector⁵⁶¹ in order for South Coast air basin to attain the 75 ppb ozone standard. According to the State Strategy, a fraction of these emissions reductions (about 0.6 tons per day) will be achieved through a combination of aggressive light-duty vehicle strategies such as higher zero emission vehicle (ZEV) sales requirement, and more stringent tailpipe standards. The remaining NOx emission reductions (about 5 tons per day) need to be achieved through incentive programs by accelerating the turnover of the oldest, highest emitting vehicles. This would mean removing older, dirtier vehicles from the road, either by replacing 1.1 million old vehicles with the cleanest conventional vehicle in 2031 or 700,000 zero emission vehicles.

Passenger cars and light trucks are a major contributor to NOx emissions in California. The State's 39 million residents⁵⁶² collectively own about 24 million passenger vehicles⁵⁶³ and drive more than most other Americans. Over ten million of these vehicles are in South Coast.⁵⁶⁴ The vast majority of these vehicles have internal combustion engines and use gasoline. The light-duty vehicle sector is projected to grow to approximately 30 million vehicles statewide by 2031.

⁵⁵⁷ EMFAC2014. CARB. Accessed on October 24, 2018. <https://www.arb.ca.gov/emfac/2014/>.

⁵⁵⁹ EMFAC2014. CARB. Accessed on October 24, 2018. <https://www.arb.ca.gov/emfac/2014/>.

⁵⁵⁹ EMFAC2014. CARB. Accessed on October 24, 2018. <https://www.arb.ca.gov/emfac/2014/>.

⁵⁶² Department of Finance Population Estimates for Cities, Counties, and the State, 2011-2018 with 2010 Census Benchmark. California Department of Finance. Accessed on October 24, 2018. http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-4/2010-18/documents/E-4_2018InternetVersion.xls.

⁵⁶² Department of Finance Population Estimates for Cities, Counties, and the State, 2011-2018 with 2010 Census Benchmark. California Department of Finance. Accessed on October 24, 2018.

http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-4/2010-18/documents/E-4_2018InternetVersion.xls.

⁵⁶² Department of Finance Population Estimates for Cities, Counties, and the State, 2011-2018 with 2010 Census Benchmark. California Department of Finance. Accessed on October 24, 2018.

http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-4/2010-18/documents/E-4_2018InternetVersion.xls.

⁵⁶³ EMFAC2014. CARB. Accessed on October 24, 2018. <https://www.arb.ca.gov/emfac/2014/>.

⁵⁶⁴ EMFAC2014. CARB. Accessed on October 24, 2018. <https://www.arb.ca.gov/emfac/2014/>.

As a result of the Agencies proposal, CARB staff has estimated that regional criteria and local toxic emissions would further increase in California non-attainment regions such as South Coast, primarily from increased fuel production activity at refineries and fuel distribution systems. More gasoline consumption means more diesel tanker truck trips to community gasoline stations, and therefore higher diesel PM emissions and refueling evaporative emissions.

According to staff analysis, the proposed rollback creates an additional 1.24 tons per day of NOx emissions in the South Coast air basin,⁵⁶⁵ 90 percent of which is from upstream fuel activity increases. Because of the SIP commitments for federal ozone standards, these increased refinery emissions would have to be offset elsewhere. This means that even more vehicles would need to be removed to compensate for the NPRM increased NOx emissions of 1.24 tons per day. Because the dirtiest vehicles would already be removed to achieve the targets set by South Coast, comparatively newer and cleaner vehicles would need to be removed--either an additional 1.3 million clean conventional vehicles or 1 million zero emission vehicles.⁵⁶⁶ This will almost double the number of vehicles that were originally supposed to be replaced to meet the region's air quality commitments.

The federal proposal to rollback vehicle standards and withdraw Clean Air Act preemption waivers granted to California for its GHG standards and Zero Emissions Vehicle (ZEV) mandate will not allow California to achieve the 2031 South Coast SIP commitments or statewide 2030 and 2045 GHG requirements. This may result in dramatic counter-measures to meet emission reduction requirements; these measures would be costly and impact the state's economic growth and mobility needs. If such measures cannot be developed within the strict time frames dictated by the Clean Air Act, regions of California could suffer the costs associated with federal "offset" and "highway" sanctions. Such sanctions are onerous and would have lasting impact on the economic development of the impacted area. In addition to the immense direct cost of developing needed counter-measures and the potential sanctions that would flow from a failure to do so, one must consider the costs that would flow from the time-consuming SIP planning process itself. These costs would impact government both at the local district and State levels.

h. The proposal threatens California's federally approved modeling of emissions.

The GHG emission standards and ZEV requirements in California's Advanced Clean Cars (ACC) program, with its approval into California's SIP in 2012, was integrated into the Emission FACTor (EMFAC2014) transportation model. The EMFAC model is a

⁵⁶⁵ Calculated using data from CARB's EMFAC and Vision models.

⁵⁶⁶ Calculated using data from the EMFAC model ([Attachment – Saved in CARBDOJcollaboration/references/ File Name: EMFAC DATA SHOWING CRITERIA IMPACTS FROM PROPOSAL.xlsx](#)).

computer model that can estimate emission rates for on-road mobile sources operating in California for calendar years 2000 to 2050. EMFAC provides outputs of the modeled emissions for hydrocarbons, carbon monoxide (CO), NOx, PM10, PM2.5, lead, carbon dioxide (CO₂), and sulfur oxides (SOx). Once approved by EPA,⁵⁶⁷ EMFAC 2014 became the model California is required to use for the majority of SIP planning.

Accurate modeling of projected emissions is crucial to meeting the Clean Air Act's SIP requirements. The Clean Air Act requires that SIP inventories include motor vehicle emission estimates based on the latest planning assumptions and emission model to calculate inventories that are available at the time the SIP is developed.⁵⁶⁸ Accordingly, EPA has agreed that EMFAC2014 meets these criteria; inventories based on EMFAC2014 have thus been used in recent federally-mandated SIPs. The Clean Air Act's general conformity requirements bar federal agencies from supporting any actions that are not consistent with (i.e. "conform to") an approved SIP, while the Clean Air Act's transportation conformity requirements ensure that federally supported regional transportation plans (RTPs), transportation improvement programs (TIPs), and highway and transit projects are consistent with the purpose of the SIP.

If California's programs to achieve reductions from the light-duty sector are invalidated, the inventories based on EMFAC 2014 would no longer be valid, and EPA would disapprove SIPs and associated motor vehicle emission budgets (MVEB) used to demonstrate transportation conformity, as the budgets derived from EMFAC2014 would include the effects of regulations no longer valid. Consistent with 40 CFR section 93.120, if EPA disapproves such SIPs without a protective finding,⁵⁶⁹ then the transportation conformity budgets from the SIP may not be used for conformity purposes, resulting in a conformity freeze. This would halt new RTPs and TIPs in the region until the issue causing EPA's disapproval of the SIP is remedied. During a conformity freeze only transportation projects scheduled to occur in the first four years of the conforming RTP and TIP could continue to advance, and no new regional conformity determinations for RTPs, TIPs, or RTP/TIP amendments could be made. If conformity of an RTP and TIP has not been determined within two years of EPA's SIP disapproval using budgets that EPA approves or finds adequate from a new SIP that has replaced the disapproved SIP, then highway sanctions would apply and the conformity freeze would become a conformity lapse.

During a conformity lapse, no new RTPs, TIPS, or regionally significant transportation projects may be adopted or approved unless the project is a Transportation Control Measure or if all necessary approvals were in place prior to the date of the lapse. Either of these scenarios (conformity freeze or conformity lapse) would greatly limit the ability

⁵⁶⁷ 80 Fed.Reg. 77,337 (Dec. 14, 2014).

⁵⁶⁸ 40 CFR §§93.110, 93.111.

⁵⁶⁹ A protective finding may be made when EPA finds the SIP identifies control measures sufficient to achieve Reasonable Further Progress or attainment and that SIP disapproval does not affect the validity of the mobile source budgets. (40 CFR 93.101.).

of California's Metropolitan Planning Organizations to amend their RTP and TIPs, and so would severely impact their ability to plan, fund, and implement transportation projects.

Another impact that would flow from this proposal's effect on EMFAC2014 is the likely disapproval of numerous California SIPs, as their underlying modeling would be invalidated. This could result in Clean Air Act sanctions being imposed on California. As described above, when SIPs are disapproved, the Clean Air Act requires EPA to issue a finding of failure to submit an approvable SIP with notice that if an approvable SIP is not submitted, sanctions (first "offset" and later "highway") will apply.

All SIPs that California has submitted since January 1, 2016 have utilized EMFAC2014 for modeled attainment demonstrations and Reasonable Further Progress demonstrations, both of which are required by the Clean Air Act to be part of an approvable SIP. As of this writing, 16 California SIPs have been submitted that used EMFAC2014. If EMFAC2014 is invalidated, EPA would most likely disapprove the 14 of those submitted SIPs that they have not yet acted upon and possibly make calls for revisions to the two it has acted on due their being rendered substantially inadequate through the invalidation of their modeling. Other states that have relied on either the federal or California light-duty emission standards would face similar consequences if the proposed rollback is finalized. Through this proposal, the Agencies are effectively breaking approved SIPs throughout the nation, without so much as acknowledging it, much less discussing the impacts and how states can prevent the damage that will come from not meeting legal planning requirements or actually improving air quality – which is what this is ultimately all about.

i. The proposal threatens California's Conformity Plan.

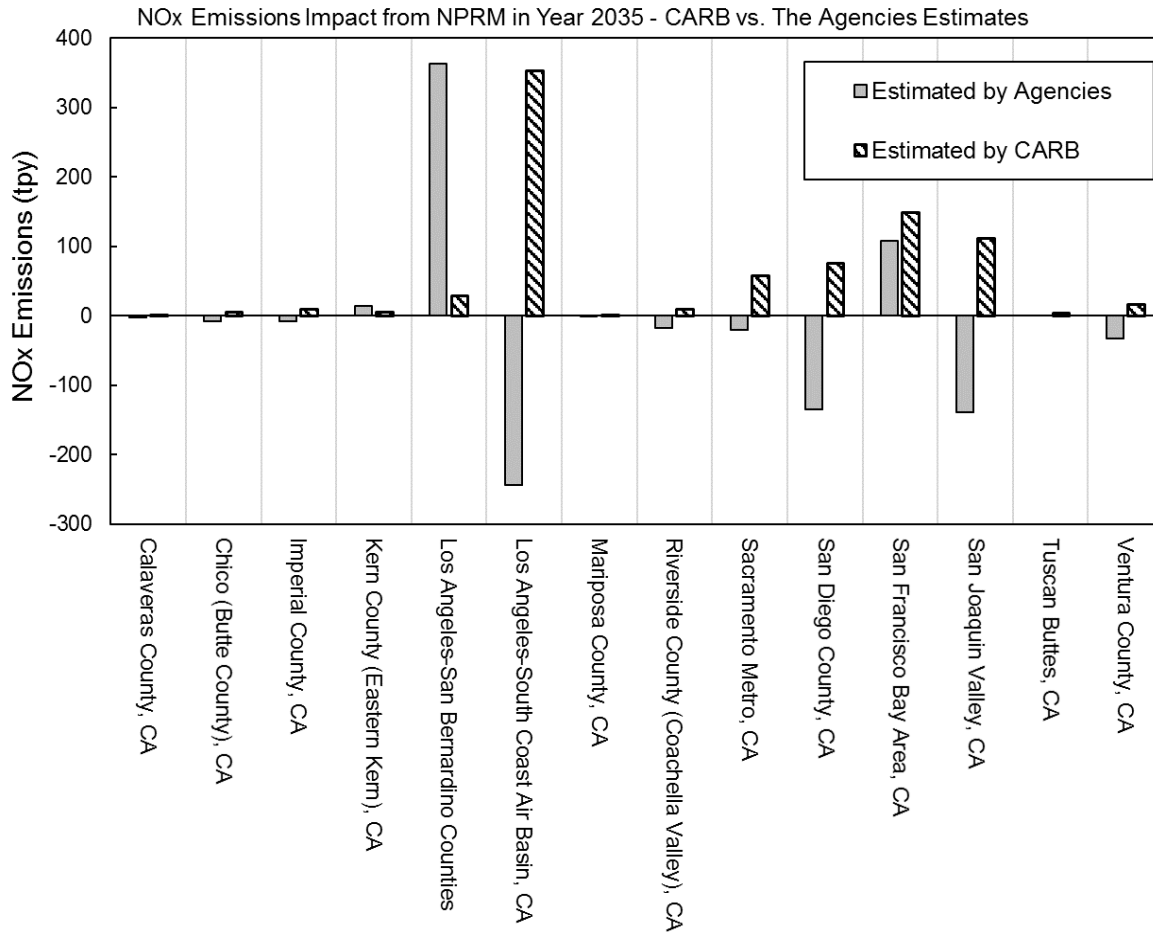
Figure VII-1 shows a comparison of CARB's estimated NOx emissions impacts in California non-attainment/maintenance areas⁵⁷⁰ versus those estimated by the Agencies in Appendix A⁵⁷¹ of the Draft Environmental Impacts Statement. The Agencies' emissions impact assessment shows reduction in NOx emissions in almost all non-attainment or maintenance areas except for Los Angeles-San Bernardino counties and San Francisco Bay Area, where almost 12 out of 15 refineries that produce transportation fuels are situated. However, CARB's estimates which are based on robust emissions modeling using California specific information that considers the proposal's impacts on tailpipe emissions as well as emissions from fuel production and distribution, reach a different conclusion. CARB's estimates indicate that, as a result of the Agencies' proposal, NOx emissions will increase in all non-attainment regions of

⁵⁷⁰ Designations in US EPA Regions for the 2008 8-Hour Ozone National Ambient Air Quality Standards. U.S. EPA. Accessed on October 24, 2018. <https://www3.epa.gov/region9/air/maps/pdfs/air1100018-7.pdf>

⁵⁷¹ Draft Environmental Impact Statement. NHTSA. Accessed on October 24, 2018. https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/ld_cafe_my2021-26_deis_appendices_0.pdf

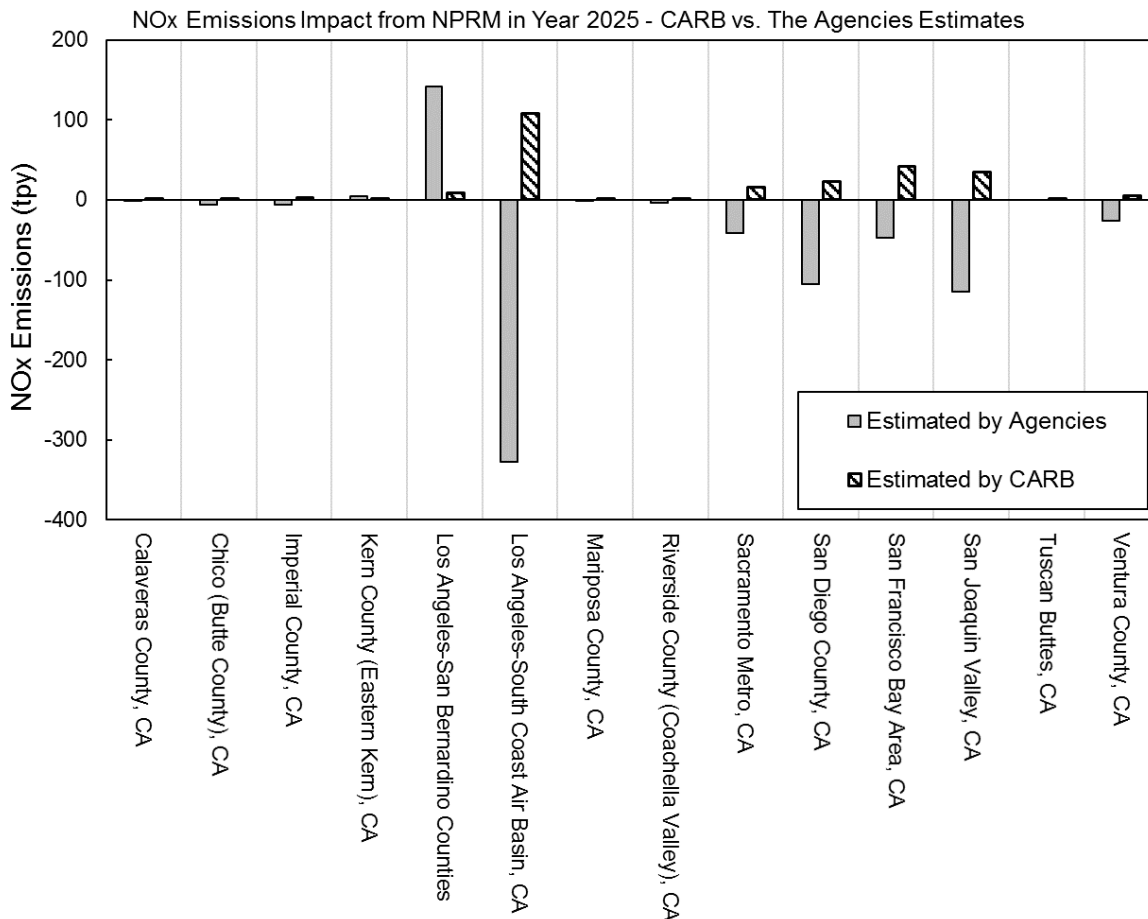
California. CARB's estimates show that 90 percent of these increases flow from upstream fuel activity increases.

Figure VII-1 NOx emissions impact in 2035 from the Agencies proposal in California non-attainments or maintenance areas – CARB vs. the Agencies estimates⁵⁷²



⁵⁷² Note: to generate Figure VII-1, CARB's statewide estimates were disaggregated to different regions using tailpipe emissions as surrogates. The supporting documentation for this figure is titled "Attachment – Emissions Impact Alternative1.xlsx, included in the submitted DVD.

Figure VII-2 NOx emissions impact in 2025 from the Agencies proposal in California non-attainments or maintenance areas – CARB vs. the Agencies estimates



These increases will have dire implications for SIP planning in some of California’s major metropolitan areas. These impacts are not explained in the proposal due to the Agencies’ reliance on modeling that is not the most detailed and accurate available, and that is different from the more detailed and accurate modeling that California is required to use in its SIP planning. The Agencies’ failure to utilize the appropriate modeling when describing the criteria impacts of the proposal is arbitrary.

As addressed in California’s comments on the DEIS, an additional criteria-related issue is whether the proposed action meets the Clean Air Act’s general conformity requirements.⁵⁷³ NHTSA offered a discussion of general conformity in its DEIS, but did

⁵⁷³ To ensure compliance with SIPs and progress toward NAAQS attainment, the Clean Air Act’s conformity provision requires that federal agencies not “engage in, support in any way or provide financial assistance for, license or permit, or approve, any activity” that does not “conform” to a SIP. 42 U.S.C. § 7506(c)(1). EPA is responsible for determining that its action is consistent with the applicable SIP and does not cause or contribute to any new NAAQS violation, increase the severity or frequency of an existing NAAQS violation, delay attainment of a standard, emissions reduction, or other milestone. To guide an agency’s conformity determination, the EPA has promulgated

so utilizing modeling other than the relevant EMFAC2014. Regardless, the DEIS lists general conformity thresholds, but it states those thresholds are “provided for information only; a general conformity determination is not required for the Proposed Action.”⁵⁷⁴ NHTSA arrived at this conclusion because it claims the proposed action would not cause any direct or indirect emissions within the meaning of the General Conformity Rule.⁵⁷⁵

There are three fundamental issues with NHTSA’s handling of the Clean Air Act’s general conformity requirements. First, NHTSA uses inappropriate modeling to reach its conclusion. NHTSA has – without explanation – chosen not to utilize EMFAC 2014, the model that California is required to use under the Clean Air Act, to generate the numbers relevant to a conformity determination under the Act. Second, NHTSA argues that any emissions flowing from its actions are neither direct nor indirect for general conformity purposes under 40 CFR section 93.152, stating that it cannot control the technologies that auto manufacturers would use or consumer behavior (including purchasing).⁵⁷⁶ Yet this assertion flies in the face of the primary reason NHTSA is undertaking this rulemaking, which is that the existing standards’ costs purportedly are causing new vehicles to become more costly and thereby negatively impacting consumer purchasing behavior. NHTSA then attempts to justify this course of action by predicting, using new modelling inputs of its own design, the emissions levels that would flow from its action. In other words, the rulemaking is premised on understanding consumer purchasing and the emissions implications of such purchasing, while NHTSA claims on the other hand that it cannot make assumptions about these very things when it comes to satisfying general conformity obligations. NHTSA cannot have it both ways. Indeed, the Ninth Circuit Court of Appeals has previously recognized that “[b]y allowing particular fuel economy levels, which NHTSA argues translate directly into particular tailpipe emissions, NHTSA’s regulations are the proximate cause of those emissions just as EPA Clean Air Act rules permitting particular smokestack emissions are the proximate cause of those air pollutants....”⁵⁷⁷ Finally, in the context of this joint rulemaking between NHTSA and EPA, it is inappropriate that NHTSA’s determination regarding its own conformity obligations, regardless of its independent merit or lack thereof, does not address any conformity-related obligations EPA may have that flow from the joint rulemaking.

two sets of regulations—a Transportation Conformity Rule, and a General Conformity Rule. The EPA’s General Conformity rule requires that federal agencies perform a conformity determination if the action’s cumulative direct and indirect emissions in a nonattainment or maintenance area exceed specified thresholds. 40 C.F.R. § 93.153(b).

⁵⁷⁴ See, e.g., DEIS, Appendix A, p. A-19.

⁵⁷⁵ DEIS at 4-14 and 4-15.

⁵⁷⁶ DEIS at 4-14 and 4-15.

⁵⁷⁷ *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1217 (9th Cir. 2008).

2. The federal proposal increases community exposures to air pollution.

Removal of CARB's ZEV regulation under the proposed rollback will cause increased air pollution exposures for people living within 200-500 meters of high-volume roadways. This will increase rates of health impacts associated with vehicle air pollution such as cancer, lung disease, asthma, and increased rates of mortality. These impacts are disproportionately imposed on low-income communities and communities of color in California because there are disproportionately higher concentrations of these communities living near major roadways, and this concentration is expected to increase in the next two decades. CARB is committed to prioritizing environmental justice and ensuring that regulatory efforts focus on communities facing cumulative environmental and economic burdens, which include disadvantaged communities. Hindering CARB's regulatory efforts to increase the number of zero-emission cars operating on California's roadways, therefore also hinders environmental justice and CARB's efforts to improve health and quality of life in disadvantaged communities. Specifically, the removal of even one of CARB's mobile source control regulations impedes CARB's efforts to significantly reduce air toxic contaminant and criteria pollutant emissions in the most burdened communities under California Assembly Bill Number 617.⁵⁷⁸

a. The federal proposal increases the concentration of harmful pollutants near major roadways.

Near-source exposure from vehicle emissions poses a significant health risk for those living within 300 to 500 meters of a major roadway.⁵⁷⁹ As noted in analysis underlying the proposed rollback, locations near to major roadways have elevated concentrations of many air pollutants emitted from vehicles, making these "microclimates" or "hot spots" of harmful pollution.⁵⁸⁰

Traffic on major roadways is the largest source of near-source pollution due in part to the combustion of gasoline.⁵⁸¹ Traffic pollution is a complex mixture of gaseous and particulate pollutants, including particulate matter, NOx, and benzene. The extent of exposure to these components depends on a number of factors, including upwind/downwind location, meteorological conditions, time of day, and season. For instance, high volumes of vehicles on a roadway during early morning commute hours can increase traffic delay and thus concentrations of near-roadway emissions. Differences in meteorology can contribute to pollutants from roadways traveling farther

⁵⁷⁸ Garcia, Cal. Stats. 2017, Ch. 136.

⁵⁷⁹ A. Carlson, The Clean Air Act's Blind Spot: Microclimates and Hotspot Pollution, 65 UCLA L. Rev. 1036, 1056 (2018) (hereinafter Hot Spot Pollution); Health Effects Institute, Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects, Special Report 17, available at <https://www.healtheffects.org/publication/traffic-related-air-pollution-critical-review-literature-emissions-exposure-and-health> (hereinafter HEI 2010).

⁵⁸⁰ 83 Fed.Reg. at 43,344; Hot Spot Pollution, 1038.

⁵⁸¹ Hot Spot Pollution, 1056.

into nearby areas at night and during early morning hours than during the day.⁵⁸² Also, NO₂ concentrations have been shown to increase with rush hour traffic and areas of traffic delay.⁵⁸³ At trafficked intersections, levels of PM can be elevated by as much as 40 percent for larger PM (PM 10) and by 16 percent to 17 percent for fine PM (PM 2.5).⁵⁸⁴ These pollutants can enter vehicles, further exposing those driving on major roadways. For instance, significantly high levels of PM have been measured inside of Los Angeles-area buses.⁵⁸⁵ The vehicle pollutants can also enter homes through open windows and vents in the early morning due to air patterns.⁵⁸⁶

Exposure to vehicle pollution by those living within 300 to 500 meters of a major roadway has been shown to contribute to and exacerbate asthma, impair lung function, and increase cardiovascular mortality.⁵⁸⁷ Additionally, there is evidence linking near-roadway pollution exposures to higher rates of heart attacks, strokes, lung cancer, pre-term births, childhood obesity, autism, and dementia. Epidemiological studies have shown that even levels below the PM_{2.5} NAAQS⁵⁸⁸ can increase the risk of health impacts. These studies estimate that “[f]or every increase of 10 micrograms per cubic meter of PM 2.5, mortality increased by 13.6 percent.”⁵⁸⁹

California studies have indicated that some groups are more sensitive to traffic-related pollutants than the general population including children, the unborn, the elderly, and those with preexisting conditions. One study found that the total number of deaths from cardiovascular disease associated with near-roadway pollution will increase by 2035 due to an increased number of the elderly in the population at risk, even though the exposures and the risk to individuals will be reduced.⁵⁹⁰ Traffic exposure can be linked to an increased prevalence of childhood asthma and bronchitis symptoms.⁵⁹¹ The Children’s Health Study, conducted in California, demonstrated that particulate pollution

⁵⁸² Hu et al. *Atmospheric Environment* 43 (2009) 2541-49.

⁵⁸³ Hot Spot Pollution, 1057.

⁵⁸⁴ Hot Spot Pollution, 1058.

⁵⁸⁵ Hot Spot Pollution, 1058.

⁵⁸⁶ Hot Spot Pollution, 1057.

⁵⁸⁷ Hot Spot Pollution, 1052 and 1057.

⁵⁸⁸ See, University of Southern California Environmental Health Centers, References: Living Near Busy Roads or Traffic Pollution. University of Southern California. Accessed on October 24, 2018.

<https://envhealthhydrocarbonenters.usc.edu/infographics/infographic-living-near-busy-roads-or-traffic-pollution/references-living-near-busy-roads-or-traffic-pollution>.

⁵⁸⁹ Hot Spot Pollution, 1053.

⁵⁹⁰ Ghosh, R., et al. “Near-roadway air pollution and coronary heart disease: burden of disease and potential impact of greenhouse gas reduction strategy in Southern California” *Environmental Health Perspectives*, 2016. 124(2):193-200.

⁵⁹¹ Kim JJ, Smorodinsky S, Lipsett M, Singer BC, Hodgson AT, Ostro B. Traffic-related air pollution near busy roads: the East Bay Children’s Respiratory Health Study. *American Journal of Respiratory and Critical Care Medicine*, 2004. 170 (5): 520-6; Delfino RJ, Gong H Jr, Linn WS, Pellizzari ED, Hu Y. Asthma Symptoms in Hispanic Children and Daily Ambient Exposures to Toxic and Criteria Air Pollutants. *Environmental Health Perspectives* vol 111 number 4 April 2003; Delfino RJ, Gong H, Linn WS, Hu Y, Pellizzari ED. Respiratory symptoms and peak expiratory flow in children with asthma in relation to volatile organic compounds in exhaled breath and ambient air. *Journal of Exposure Analysis and Environmental Epidemiology*, 2003. 13, 348–363.

may significantly reduce lung development in children, and that these effects are likely permanent.⁵⁹² The investigators found associations between children exposed to heavy traffic and slower lung development, as well as significant increases in asthma prevalence, asthma medication use, and wheezing.⁵⁹³ Living near heavy traffic could also be associated with increased rates of new cases of asthma.⁵⁹⁴ Ongoing studies examining long-term health trends in the Children's Health Study participants have found that the recent reductions of air pollution in South Coast are associated with significantly reduced bronchitic symptoms and clinically significant positive effects on lung development in these children.⁵⁹⁵ Both regional particulate matter pollution and local near-roadway exposures affect children's health independently, resulting in reduced lung function.⁵⁹⁶ Other investigators have found adverse birth outcomes, such as low birth weight seen in infants whose mothers are exposed to traffic pollution.⁵⁹⁷ Short-term exposure to PM2.5 causes premature mortality, and long-term exposure additionally may cause reproductive harm, developmental problems in children, and cancer.⁵⁹⁸

The specific component or components of traffic pollution responsible for the health impacts observed are not known and the mechanisms of toxicity are an active area of research. Epidemiological studies worldwide, as well as California-specific studies, however, have clearly shown that adverse health effects are associated with vehicle emissions and are concentrated within a few hundred meters of heavily traveled freeways and major roadways. A comprehensive review of traffic impacts by the Health

⁵⁹² Avol EL, Gauderman WJ, Tan SM, London SJ, Peters JM. "Respiratory effects of relocating to areas of differing air pollution levels," *American Journal of Respiratory and Critical Care Medicine*, 2001. 164: 2067-2072; Gauderman WJ, Avol E, Gilliland F, Vora H, Thomas D, Berhane K, McConnell R, Kuenzli N, Lurmann F, Rappaport E, Margolis H, Bates D, Peters J. "The effect of air pollution on lung development from 10 to 18 years of age," *New England Journal of Medicine*, 2004. 351(11): 1057-1067. Erratum in: *New England Journal of Medicine* 2005 352(12):1276.

⁵⁹³ Gauderman WJ, Avol E, Lurmann F, Kuenzli N, Gilliland F, Peters J, McConnell R. Childhood asthma and exposure to traffic and nitrogen dioxide. *Epidemiology*, 2005. 16 (6): 737-43; Gauderman WJ, Vora H, McConnell R, Berhane K, Gilliland F, Thomas D, Lurmann F, Avol E, Kunzli N, Jerrett M, Peters J. Effect of exposure to traffic on lung development from 10 to 18 years of age: a cohort study. *Lancet*, 2008. 369 (9561): 571-7; McConnell R, Berhane K, Yao L, Jerrett M, Lurmann F, Gilliland F, Kunzli N, Gauderman J, Avol E, Thomas D, Peters J. Traffic, susceptibility, and childhood asthma. *Environmental Health Perspectives*, 2006. 114 (5): 766-72.

⁵⁹⁴ McConnell R, Islam T, Shankardass K, Jerrett M, Lurmann F, Gilliland F, Gauderman J, Avol E, Kunzli N, Yao L, Peters J, Berhane K. Childhood incident asthma and traffic-related air pollution at home and school. *Environmental Health Perspectives*, 2010. 118 (7): 1021-1026.

⁵⁹⁵ Gauderman, W.J., et al. "Association of improved air quality with lung development in children" *New England Journal of Medicine*, 2015. 372(10):905-913; Berhane, K. et al. "Association of changes in air quality with bronchitic symptoms in children in California, 1993-2012", *Journal of the American Medical Association*, 2016. 315(14):1491-1501.

⁵⁹⁶ Urman, R, McConnell R, Islam T, Avol EL, Lurmann FW, Vora H, Linn WS, Rappaport EB, Gilliland FD, Gauderman WJ. "Associations of children's lung function with ambient air pollution: joint effects of regional and near-roadway pollutants" *Thorax*, 2014. 69(6):540-547doi: 10.1136/thoraxjnl-2012-203159.

⁵⁹⁷ Michelle Wilhelm, Jo Kay Ghosh, Jason Su, Myles Cockburn, Michael Jerrett, and Beate Ritz. Traffic-Related Air Toxics and Term Low Birth Weight in Los Angeles County, California vol. 120 no. 1. January 2012 *Environmental Health Perspectives*.

⁵⁹⁸ Hot Spot Pollution, 1053.

Effects Institute (HEI) concluded that there is evidence to indicate that traffic-related pollution is a public health concern.⁵⁹⁹

The proposed rollback acknowledges that there are elevated concentrations of air pollutants from vehicles near major roadways. This acknowledgement supports the importance of keeping California's ZEV rule in place as an effective method to reduce near-roadway emissions. The proposed rollback asserts that it will reduce such exposures without conducting an analysis of reductions as compared to the ZEV rule.

b. Low-income communities and communities of color are disproportionately burdened by near-roadway exposures.

Many communities in California are located near major roadways. California has three cities in the top ten largest U.S. cities by population, and some of the largest freight corridors in the U.S. are located in or near those cities. Busy traffic corridors have been built adjacent to and through existing neighborhoods (sometimes as a result of planning policies), and new developments have been built near existing roadways due to a variety of factors, including economic growth, demand for built environment uses, and the scarcity of land available for development in some areas. Estimations based on the 2000 Census suggest that 24 percent of all Californians live within 500 meters of a highway and 44 percent within 1000 meters of a highway.⁶⁰⁰ In Los Angeles, more than a third of the population lives within 300 meters of a major roadway.⁶⁰¹

Of those living near major roadways, there is a disproportionate concentration of low income communities and communities of color. In California, Latinos, African Americans, Asian/Pacific Islanders, and low-income individuals and families are more likely to live next to a major roadway than whites or high-income earners.⁶⁰² And almost half of Californians living next to major roadways are "poor or near-poor."⁶⁰³

Economically disadvantaged neighborhoods and individual residences have been linked to higher levels of traffic air pollution⁶⁰⁴ and more asthma symptoms, among other health impacts.⁶⁰⁵ Near-roadway exposures exacerbate existing health impacts experienced by these communities, and a lack of resources inhibit responses that might otherwise promote healthy outcomes.⁶⁰⁶ For instance, lack of access to health care,

⁵⁹⁹ Traffic-Related Air Pollution: A Critical Review of the Literature on Emissions, Exposure, and Health Effects. HEI Special Report 17. Health Effects Institute. 2010. Accessed on October 24, 2018.

<https://www.healtheffects.org/publication/traffic-related-air-pollution-critical-review-literature-emissions-exposure-and-health>.

⁶⁰⁰ Census 2000.

⁶⁰¹ Hot Spot Pollution, 1057-58.

⁶⁰² Hot Spot Pollution, 1047.

⁶⁰³ Hot Spot Pollution, 1047.

⁶⁰⁴ Gunier RB, Hertz A, Von Behren J, Reynolds P. Traffic density in California: socioeconomic and ethnic differences among potentially exposed children. *Journal of Exposure Analysis and Environmental Epidemiology*, 2003. 13(3): pp. 240-46.

⁶⁰⁵ Meng Y-Y, Wilhelm M, Rull RP, English P, Nathan S, Ritz B. "Are frequent asthma symptoms among low-income individuals related to heavy traffic near homes, vulnerabilities, or both?" *Annals of Epidemiology*. 2008.

⁶⁰⁶ Gunier, R.B., et al., Traffic density in California: socioeconomic and ethnic differences among potentially exposed children. *Journal of Exposure Science and Environmental Epidemiology*, 2003. 13(3): pp. 240-246.

historical discrimination, and the inability to move to an affordable, healthier location can present obstacles to fair and equal health and economic outcomes for low income communities and communities of color.

Ultimately, historical inequities can be compounded by the continuation and increase in air pollution, by disproportionately burdening these communities with the health impacts of harmful pollutants from traffic. These unfair outcomes for particular communities are a result of decades of decision-making that did not prioritize fundamentally fair outcomes for all Californians regardless of their economic, racial, or ethnic background. Environmental justice is of critical importance to reduce and eliminate health, environmental, and economic disparities that disproportionately negatively affect communities of color and low-income communities in California and to create a more fair economy and quality of life for all Californians. A priority for CARB is to achieve environmental justice and to make it an integral part of its activities to improve their health outcomes and quality of life. This reflected in the ZEV regulation, which ultimately works to directly reduce near-roadway exposures, improving health outcomes for those living near major roadways.

Despite the EPA's reaffirmed commitment to environmental justice, the proposed rollback does not adequately analyze the effect of removing the ZEV regulation on furthering environmental justice, particularly as a result of increasing near-roadway exposures.⁶⁰⁷ In 1994, a federal Executive Order directed federal agencies to identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law. The order also directed each agency to develop a strategy for implementing environmental justice. This executive order has not been revoked and is a core statement of federal policy in effect today. Further, EPA's Environmental 2020 Action Agenda creates procedures to consider environmental justice routinely throughout agency decision-making. Additionally, the February 23, 2018 memo by EPA Associate Administrator Samantha Dravis notes that EPA will "[a]chieve measureable environmental outcomes for underserved and overburdened communities in areas of [. . .] reduction of air pollutants [. . .] and [s]trengthen the ability of our partner agencies to integrate [environmental justice] in their work through enhanced coordination and collaboration with states, tribes and local governments to address [environmental justice] concerns."⁶⁰⁸

However, this commitment is not reflected in the proposed rollback, which would eliminate CARB's ability to enforce its ZEV regulation. A statement of commitment to environmental justice is ineffective without corresponding action to ensure the commitment and its expected benefits are realized. In the proposed rollback's

⁶⁰⁷ Memorandum on EPA's Environmental Justice and Community Revitalization Priorities. U.S. EPA. Accessed on October 24, 2018. https://www.epa.gov/sites/production/files/2018-02/documents/epa_ej_memo_02.23.2018.pdf. (hereinafter EPA Environmental Justice Memo); Executive Order, 59 Fed.Reg. 32 (Feb. 18, 1994).

⁶⁰⁸ EPA Environmental Justice Memo.

Environmental Justice section, it attempts to delegitimize the disproportionate health impacts experienced by low-income communities and communities of color and makes an unfounded and unanalyzed conclusion that the emissions reductions from the proposed rule will have the most direct air quality improvements by those living near-roadways.

Moreover, the proposed rollback's Environmental Justice section appears to misunderstand the purpose of implementing environmental justice. The proposed rollback states that it is other stressors associated with low-income communities and communities of color that are largely to blame for any worsened health outcomes; however, it fails to acknowledge the significant impact social and economic disparities have on exposure disparities. There is no analysis or description in the proposed rollback of how economic circumstances; historical, social, and economic discrimination and inequities; and health are interrelated and can work to exacerbate negative outcomes. As stated above, the proposed rollback acknowledges that vehicle pollution causes significant health impacts for those living near major roadways and the importance of reducing such exposures. Nonetheless, the rollback's Environmental Justice section concludes by stating that direct emissions reductions will occur from the proposed rollback, and thus reduce near-highway exposures, without any supporting analysis.

The fact that there are disproportionate stressors within low-income communities and communities of color is a significant reason for prioritizing environmental justice and fair treatment by government actions. Reducing pollution exposures and improving health can in turn increase economic and social benefits, thereby reducing other disparities experienced in these communities. For example, reducing rates of asthma or asthma symptoms can increase school and work attendance. The existence of other stressors that affect health does not lessen the connection between vehicle pollution and health impacts, as the proposed rollback appears to imply, it strengthens the justification for the necessity of the ZEV regulation to cause direct reductions of near-roadway exposures.

3. Increasing ZEVs are essential to improving the health of those living near major roadways.

Full electrification of all vehicles in California would avoid the majority of near-source exposure health impacts. The ZEV regulation intends to push California towards that goal, and the revocation of California's authority to implement this rule will substantially impair the immediate reductions of near-highway exposures and future anticipated reductions. CARB's policies and plans to reduce car and truck pollution statewide are already improving air quality, but will take time before the full benefits are achieved. Revoking California's authority to implement the ZEV regulation is particularly harmful to ongoing efforts to reduce exposures to the most burdened communities such as through CARB's Community Air Protection Program pursuant to Assembly Bill 617. These direct near-roadway emission reductions are necessary because the size of the population

living near major roadways in California is growing, increasing the risk of health impacts and related harms to these expanding communities.

Under Assembly Bill 617, CARB and local air districts are partnering to transform California's air quality programs to address air pollution disparities at the neighborhood level. The goal is to substantially reduce air toxic contaminants and criteria air pollutant exposures in communities that experience the most significant exposure burdens. CARB selected these first ten communities. The air district for each community must develop and implement a Community Emissions Reduction Program (CERP) that will include strategies to reduce toxic air pollutants and criteria air pollutants from stationary sources in the community in the near-term. CARB, for its part, is to adopt new and implement existing mobile source controls to support the emissions reductions.

The ZEV regulation is a critical part of the existing regulatory regime expected to reduce emissions in these communities. Many of the communities have major roadways that cause near-highway exposures of harmful vehicle pollutants, contributing to the pollution burden of these communities. Without the ZEV regulation, CARB will not have one of the most effective tools to reduce pollution exposures in these communities.

Additionally, according to the U.S. Census Bureau, California is the second-fastest growing state and Los Angeles is also one of the fastest growing cities in the U.S.⁶⁰⁹ The Southern California Association of Governments (SCAG), the regional planning agency for Los Angeles, Ventura, Orange, Riverside, San Bernadino, and Imperial Counties estimates that the population in these counties that will live within 500 feet (152 meters) of a freeway will increase by 250,000 by 2035.⁶¹⁰ As populations increase, so do the numbers of vehicles on the roadways, increasing vehicle emissions and exposures for those living near the freeways. In areas where infill development is prioritized, the populations near roadways are also expected to increase in the coming decades.

CARB intended to rely on its existing programs, such as the ZEV regulation, and its new efforts, such as Assembly Bill 617, to attempt to minimize emissions that otherwise would be expected to grow with increasing populations and vehicles operated in California. To remove the ZEV regulation causes substantial harm to this effort and will directly result in increases in near-roadway emissions exposures for Californians during this time of population growth.

4. Reducing near-term exposures must be addressed in part by increasing use of ZEVs.

Reducing near-roadway exposures requires a comprehensive, integrated approach through reducing emissions from the vehicles themselves and reducing emissions

⁶⁰⁹ Census Bureau Reveals Fastest-Growing Large Cities. U.S. Census Bureau. Accessed on October 24, 2018. <https://www.census.gov/newsroom/press-releases/2018/estimates-cities.html>.

⁶¹⁰ Regional Transportation Plan 2012-2035, Environmental Justice Appendix. SCAG. Accessed on October 24, 2018. http://rtpscs.scag.ca.gov/Documents/2012/final/SR/2012fRTP_EnvironmentalJustice.pdf.

exposures from the transportation system. This comprehensive approach is needed because no one solution can meet the overall reductions that are needed, and the potential to reduce emissions in the near term compared to the longer term differs. Motor vehicle regulations like the ZEV regulation provide an opportunity to reduce emissions in the near- and mid-term, while reductions in emissions from the transportation system and land use, which are equally important, provide an opportunity to reduce exposure and emissions in the mid- and long-term. Further, reducing emissions from vehicles are seen as the “low hanging fruit” from a cost-effectiveness perspective, and are therefore the appropriate first line of defense when developing a strategy to improve air quality and reduce exposure for communities, especially the most vulnerable ones. If removing the ZEV regulation would mean that the State must rely solely on mechanisms to reduce emissions or exposures from the transportation system and land use to achieve the same public health benefits, this would include reducing reliance on vehicles (such as reducing VMT) or creating more distance between communities and roadways. These two options are important and being pursued through existing efforts by the State agencies and local jurisdictions, but they cannot be the sole mechanisms to reduce vehicle pollutant emissions or exposures.

First, the amount of time it takes to implement these solutions means that exposure is prolonged when there are cost-effective measures to address them (i.e. ZEV regulation). Second, it is logistically impractical and costly to expect all near-roadway exposure is achieved solely from changes to all existing and future infrastructure. Lastly, it is a substantial burden to impose on local jurisdictions to use their authorities to reduce this magnitude of near-roadway exposure. Increasing the use of ZEVs is essential to the multi-prong effort to reduce pollution exposures from vehicles and that is best achieved through the ZEV regulation.

There are numerous efforts underway in the policy, planning, and technology areas in California to reduce reliance on vehicles and otherwise reduce VMT. These efforts are undertaken for a variety of reasons, including to improve quality of life (e.g., reducing congestion and commute times), reduce consumer costs, and reduce vehicle pollution. These efforts are also necessary because of the speed of population growth – and personal car ownership – in the State and the inability of existing housing and transportation infrastructure to serve these populations and vehicles. Examples of ongoing efforts to reduce reliance on vehicles include incorporating VMT into the project evaluation and mitigation process through CEQA,⁶¹¹ Sustainable Communities Strategies to meet regional GHG reduction targets from light-duty vehicles by regional Metropolitan Planning Organizations under Senate Bill 375,⁶¹² and State grants to local jurisdictions to build active transportation infrastructure.⁶¹³ These efforts, however, face implementation challenges as a result of a number of factors, including existing federal,

⁶¹¹ Cal. Senate Bill (SB) 743, Chap. 386, Stats. 2013 (Steinberg).

⁶¹² Cal. Senate Bill (SB) 375, Chap. 728, Stats. 2008 (Steinberg).

⁶¹³ Cal. Senate Bill (SB) 99, Chap. 359, States 2013; Cal. Assembly Bill (AB) 101, Chap. 354, Stats. 2013.

state, and local transportation fund structures that favor investments in roads over alternative modes, inadequate affordable housing near jobs, and increases in use of ride-hailing companies, all of which promote the use of vehicles or longer trip lengths.

First, the amount of time it takes to implement transportation infrastructure and land use development solutions means that resident exposure will be unnecessarily prolonged if forced to solely rely on these strategies to achieve near-roadway pollution exposure reductions. In general, transportation infrastructure projects are identified and programmed in a way that helps to influence the distribution of population, employment growth, and associated land use changes. It then takes several years to update local general plans and zoning codes to reflect more sustainable land use planning, followed by several more years to affect land use changes on individual parcels. The elapsed time to affect transportation system and land use change is on the order of several decades. These efforts will be an important strategy to achieve public health benefits, but not at the scale that clean vehicles can provide in the near-term.

Second, it is currently logistically and legally impracticable and costly to solely rely on changes to the transportation system and land use to achieve near-roadway pollution exposure reductions. As noted above, about one third of residents of Los Angeles live near a major roadway. To modify existing infrastructure to reduce the number of residents living near a major roadway, or to reduce the number of vehicles driving on that roadway, could require movement of millions of people and jobs; large amounts of capital and other funds; and or new legal authority to allow for road user pricing strategies.

Lastly, it would be a substantial burden on local jurisdictions to solely rely on changes to the transportation system and land use to achieve near-roadway pollution exposure reductions. These local jurisdictions have primary authority to determine transportation and land use patterns within their boundaries within the parameters set by State law. This is a significant responsibility. Local jurisdictions are on the front lines of understanding what their communities need and how funding availability, population growth, new transportation services (such as ride-hailing companies), and housing availability affect the health, prosperity, and wellbeing of their residents. While their role is integral to shaping the low-pollution communities of the future, local jurisdictions should not be expected to use their authority to meet all GHG and pollution reduction goals, especially when ZEV technologies are available today. CARB developed a Technical Advisory that identifies effective strategies that planners and other land use decision-makers can implement locally. The Technical Advisory specifically calls out the ZEV regulation as one of the mechanisms expected to reduce emissions in tandem with local development. ZEVs can be deployed feasibly, cost-effectively, and immediately in large numbers over the next few decades, causing substantial reductions in near-roadway emissions exposures and creating immediate air quality, public health, and environmental justice benefits.

vehicle and equipment technologies and fuels through the targeted introduction of zero emission and near-zero emission technologies in other sectors.⁶²¹

These analyses maintain the need for strong GHG fleet-wide standards in congruence with meaningful ZEV requirements. As mentioned above, the ZEV regulation acted as an incubator for hybrid technology, and hybrid technology (once commercialized) was used to help set the 2012 LEV III GHG emission standards for all cars. Now, the aforementioned analyses show ZEV technology is imperative for meeting long-term emission reduction goals. Manufacturers would not likely make a more expensive technology to reduce GHG emissions (like a BEV) if there were other technologies that could still help achieve GHG standards at less cost. The ZEV regulation can help set a floor to ensure manufacturers are developing technologies that can be used to set meaningful GHG fleet-wide standards in the future.

6. California and the nation must reduce greenhouse gas emissions from motor vehicles and promote zero-emission vehicles.

There is an urgent need to help the transportation system take the next step in innovation to reduced- and zero-emission technologies. The ZEV regulation is designed to accelerate technology development through steadily increasing minimum sales. These technologies are necessary to reverse the increasing emissions from the transportation sector. Total ZEV and PHEV sales and the number of available vehicle models are steadily climbing. Manufacturers have over-complied with the requirements, and costs are falling faster than predicted.⁶²²

As detailed above the rollback scenario creates an additional 1.24 tons per day increase in NOx emissions in the South Coast air basin, 90 percent of which is from upstream fuel activity increases. Because of the SIP commitments for federal ozone standards, these increased refinery emissions would have to be offset elsewhere. This means that even more vehicles would need to be removed to compensate, and because the dirtiest vehicles would already have been removed, more newer and cleaner vehicles would need to be removed - either an additional 1.3 million clean conventional vehicles, or 1 million additional electric vehicles. This will almost double the number of vehicles that must be replaced to meet the region's air quality commitments. To put it plainly, California's ZEV regulation is a practical necessity to meeting the National Ambient Air Quality Standards for ozone.

California is not putting all the burden on manufacturers. To further advance zero-emission technology, California enacted a law to reduce emissions from the next frontier of transportation: ride-hailing, or transportation network, companies.⁶²³ California

⁶²¹ *Id.* at 97-102.

⁶²² *California's Advanced Clean Cars Midterm Review*. CARB. Accessed on October 24, 2018. <https://www.arb.ca.gov/board/books/2017/032317/17-3-8pres.pdf>. pp. 21-29.

⁶²³ Cal. Senate Bill (SB) 1014, Chap. 369, Stats. 2018.

In fact, the text expressly establishes a congressionally-crafted balance between state and federal powers, one that preserves California's inherent police power while authorizing a narrow and deferential review by EPA. By design, "the statute does not provide for any probing substantive review of the California standards by federal officials." Congress expressly tilted the balance heavily in favor of California's discretion here, not EPA's. And the waiver provision cannot be read as authorizing EPA to upend that balance by pulling the rug out from under California's existing state program at any time of its choosing. If Congress must make its intent "unmistakably clear" when Congress itself seeks "to alter the usual constitutional balance between the States and the federal Government," Congress would need to be even more clear, if it wanted an *administrative agency* to have authority to intrude on a State's authorized exercise of its congressionally-recognized police power.⁷¹⁹

The improper intrusion on California's sovereignty inherent in implied revocation authority is further apparent from the nature of the waiver criteria themselves. Under Section 209(b)(1), EPA deferentially reviews California's determinations that it has designed its regulatory program to be at least as protective as the federal program and to address "compelling and extraordinary conditions" in the State. California's decisions concerning how best to respond to conditions in the State—how best to protect the State's people and resources—are at the core of its state police power.⁷²⁰ Ongoing review of such decisions by a federal administrative agency would be extraordinary and should not be implied into federal law.⁷²¹ Indeed, there is no way to reconcile that ongoing review with Congress' express intent that EPA not second-guess California's policy judgments.⁷²² The waiver provision cannot be read as authorizing this intrusion on California's sovereignty, and certainly cannot be read as *implicitly* doing so.

Finally, Section 177 underscores the absence of any implied revocation authority in Section 209(b). Section 177 allows other States to adopt California's waiver standards, if those States choose to do so and meet specified criteria. Section 177 unambiguously reflects Congress' concern that the blanket preemption in Section 209(a) "interfere[d] with legitimate police powers of States, prevent[ing] effective protection of public health."⁷²³ EPA's proposal assumes, albeit implicitly, that Congress expressly permitted multiple other States to escape federal preemption by adopting California's waiver standards while simultaneously leaving the door open for EPA to retroactively pull the

⁷¹⁹ See *Gregory v. Ashydrocarbonroft*, 501 U.S. 452, 460-61 (internal quotations omitted); see also *Murphy v. Nat'l Collegiate Athletic Ass'n*, 138 S. Ct. 1461, 1477 (2018) ("[A] healthy balance of power between the States and the Federal Government [reduces] the risk of tyranny and abuse from either front." (internal quotation omitted)).

⁷²⁰ *Huron Portland Cement*, 362 U.S. at 442.

⁷²¹ See *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230 (1947) (requiring 'clear and manifest purpose' to preempt "historic police powers of the States"); *MEMA I*, 627 F.2d at 1119 ("The EPA Administrator does not have authority to regulate ... the State of California under a broad charter to advance the public interest.").

⁷²² See *MEMA I*, 627 F.2d at 1122 ("[Congress intended] to provide California with the broadest possible discretion in setting regulations it finds protective of the public health and welfare.") (emphasis added).

⁷²³ H.R. Rep. No. 95-294 at 309.

rug out from under California and those other States. This assumption begs credulity, to say the least.⁷²⁴

Interpreting Section 209(b) as impliedly authorizing EPA to retroactively preempt state standards after previously waiving preemption also disregards the substantial reliance interests of California and the Section 177 States—reliance interests that begin developing when the waiver is granted and that only grow stronger as the States make more and more decisions based on the existence of the waiver standards. “It would be arbitrary or capricious to ignore” *private parties’* reliance interests when changing an agency rule prospectively.⁷²⁵ Congress should not be presumed to have ignored *States’* reliance interests, by impliedly authorizing an agency’s retroactive revocation of a waiver intended to allow the States to reduce dangerous air pollution. The Clean Air Act should not be read as disregarding such reliance interests and authorizing preemptive action after preemption was waived: “Where coordinate state and federal efforts exist within a complementary administrative framework, and in the pursuit of common purposes, the case for federal pre-emption becomes a less persuasive one.”⁷²⁶

In fact, once EPA grants a waiver, California (and Section 177 States) incurs regulatory costs in reliance on that decision to implement the program. Perhaps more significantly, the States make decisions about other regulatory actions to take (or not take) based on expectations of emission reductions the waiver standards will produce. For example, and relevant here, California’s Legislature has established an aggressive GHG emissions reduction target for 2030.⁷²⁷ Meeting this target requires a multi-pronged approach demanding GHG emissions reductions from various sectors, including the transportation sector, which is the largest contributor to California’s GHG emissions.⁷²⁸ California’s Advanced Clean Cars program, including the State’s GHG and ZEV standards, is a crucial part of the State’s multi-pronged approach, and California has made, and is continuing to make, decisions about other regulatory actions in reliance on the emissions reductions the Advanced Clean Cars program will produce.⁷²⁹ A revocation of the waiver for the GHG and ZEV standards will undermine the basis of California’s planning for its emission reduction goals, infringing on the State’s core police power and ability to protect its citizens. If finalized, EPA’s waiver revocation may also force California to strengthen other GHG-reducing programs, making those programs more costly.

⁷²⁴ See H.R. Rep. No. 95-294 at 213 (“[California waiver] standards may be implemented and enforced [by § 177 States], notwithstanding any provision of § 209 of the present act.”).

⁷²⁵ *Fox Television*, 556 U.S. at 515.

⁷²⁶ *New York State Dep’t of Soc. Servs. v. Dublino*, 413 U.S. 405, 421 (1973).

⁷²⁷ Cal. Health & Safety Code § 38566.

⁷²⁸ CARB, California’s 2017 Climate Change Scoping Plan (Nov. 2017) at ES-4 (and throughout).

⁷²⁹ See, e.g., *id.* at 22, 28.

prevent the effectuation of congressional intent.⁸⁵⁸ Further, the long-term effects of such innovation cannot always be evaluated at the time a technology-forcing standard is adopted, demonstrating that whether a single standard, or set of standards, will necessarily have a “material” effect (however that is defined) is not the question Congress intended EPA to ask under Section 209(b)(1)(B).

Notably, EPA has not imposed this heightened “need” standard in prior waiver requests, even where the pollution, like GHGs, is produced by a variety of sources, including mobile and stationary sources. Nor has EPA imposed this heightened requirement where the standards under consideration will enable incremental progress on serious air pollution challenges. To the extent EPA is proposing to interpret “need” differently for different pollutants, as it appears to be doing, that interpretation is impermissible for the reasons discussed above.⁸⁵⁹ And, as with so many of EPA’s proposed interpretations, this one departs from EPA’s long-standing interpretation without any, let alone sufficient, justification.⁸⁶⁰

4. The proposed revocation is arbitrary and capricious and otherwise unlawful under the proper “whole program” interpretation of Section 209(b)(1)(B).

EPA may not revoke any part of California’s already granted 2013 waiver. Even if EPA had any authority to consider revoking an already granted waiver, it could only do so under its longstanding (and proper) interpretation of Section 209(b)(1)(B). Under that standard, there is no question that California needs its motor vehicle program as a whole, including its GHG and ZEV standards, to meet compelling and extraordinary conditions.

As EPA acknowledges, California continues to have compelling and extraordinary conditions for which its motor vehicle program is needed.⁸⁶¹ The same conditions that have trapped air pollution inland for decades remain today. Despite stringent regulations and other efforts, parts of the State continue to face some of the worst air quality in the country. EPA recently recognized this fact (as it has regularly done), awarding millions of dollars of funding to San Joaquin and South Coast Air Basins to address air pollution problems.⁸⁶² Acting Region 9 EPA Administrator Alexis Strauss explained that, “[d]espite significant efforts, the South Coast and San Joaquin air basins still experience some of the worst air quality in the nation.”⁸⁶³ Eight of the top ten cities in the United States experiencing the highest levels of ozone and seven of the top ten

⁸⁵⁸ As a practical matter, EPA is simply wrong when it suggests that *California’s* needs are not addressed by the fuel cell vehicle travel provision. ZEV sales in California have met or exceeded targets. The fact that § 177 States might count California sales toward their targets cannot demonstrate that *California* does not need its targets.

⁸⁵⁹ See also *Santos*, 553 U.S. at 522-23 (plurality) (the same statutory term cannot be applied differently in different factual scenarios); *Clark*, 543 U.S. 371 (2005) (same).

⁸⁶⁰ See *Fox Television*, 556 U.S. at 515.

⁸⁶¹ See 83 Fed.Reg. at 43,241 n.555.

⁸⁶² California to Receive \$12.75 Million to Improve Air Quality in San Joaquin Valley, South Coast (May 2, 2018). U.S. EPA. Accessed on October 24, 2018. <https://www.epa.gov/newsreleases/california-receive-1275-million-improve-air-quality-san-joaquin-valley-south-coast>.

⁸⁶³ *Id.*

cities in the United States experiencing the highest levels of short-term particulate matter (24-hour PM_{2.5}) are in California.⁸⁶⁴

Notably, EPA has not proposed to find that, under the proper “whole program” approach, California would not satisfy Section 209(b)(1)(B) for its entire motor vehicle program, including the GHG and ZEV standards. Nor could it lawfully do so.

Further, and contrary to EPA’s claims, the compelling and extraordinary threats and challenges California faces from climate change, discussed in more detail below, underscore the State’s need for its motor vehicle program. These threats and challenges are relevant under EPA’s traditional and proper consideration of California’s whole program because they are themselves compelling and extraordinary conditions that support California’s need for its own vehicle emissions program. They are, further, relevant to California’s long-standing compelling and extraordinary conditions regarding criteria pollution because of the relationship between ozone formation and climate change which is discussed in more detail below.

EPA’s proposal to revoke California’s waiver for certain model years of its GHG and ZEV standards under Section 209(b)(1)(B) is unlawful because California still needs its entire vehicle emissions program to meet compelling and extraordinary conditions—the same ones Congress initially recognized as well as conditions that have emerged since enactment of the waiver provision.

5. EPA’s proposed revocation of California’s waiver is arbitrary and capricious and otherwise unlawful even if EPA looks at the GHG and ZEV standards rather than California’s whole program.

a. California needs its GHG-reducing standards to meet the extraordinary and compelling conditions caused by GHG emissions.

Climate change poses an existential threat to California. CARB described this threat, with supporting evidence, in its Advanced Clean Cars waiver request, and EPA does not dispute the evidence or California’s findings. Nor could EPA reasonably do so, given the overwhelming evidence and EPA’s own endangerment findings.⁸⁶⁵

Rather, EPA’s proposal to revoke California’s GHG and ZEV standards is based on a new interpretation of Section 209(b)(1)(B) that permits EPA to review these standards separate from California’s whole vehicle emissions program (and separate from the rest of the Advanced Clean Cars program); precludes “global” pollutants and their impacts from being considered “compelling and extraordinary conditions”; and requires

⁸⁶⁴ *State of the Air 2018*. American Lung Association. Accessed on October 24, 2018.

<https://www.lung.org/assets/documents/healthy-air/state-of-the-air/sota-2018-full.pdf>.

⁸⁶⁵ EPA attempts to distance itself from the logical consequence of its own endangerment findings by claiming those findings are a “completely different determination than whether California needs its mobile source pollution program.” 83 Fed.Reg. at 43,249. EPA relies on a statement it made in 2014 when it applied its traditional “whole program” interpretation of “such State standards.” See *id.* (quoting 79 Fed.Reg. 46,256, 46,262 (Aug. 7, 2014)). If, as it is proposing to do, EPA now rejects that interpretation, it cannot rely on this statement, particularly since it has provided no justification for them. In any event, whether or not the endangerment findings were “completely different determination[s],” California plainly needs its GHG-reducing standards to meet compelling and extraordinary conditions.

California to show that its standards will address the primary cause of California's climate impacts or will have an (undefined) meaningful effect on those climate impacts. As discussed above, these interpretations are unambiguously foreclosed and unreasonable and, in any event, cannot lawfully be applied retroactively to a waiver approved five years ago.

But even under an interpretation that considers California's GHG-reducing standards separately from its other vehicle emissions standards, EPA's proposed revocation is unlawful. There is no basis to find that GHG concentrations, the vehicles that contribute to them, and the climate impacts that result from them are not "compelling and extraordinary conditions" or that California does not need its own vehicle emissions standards to address those conditions.

California recognized the severe threats the State faces from climate change, and the causal relationship between vehicular GHG emissions and those threats, as early as 2002.⁸⁶⁶ Specifically, the California Legislature found that "[g]lobal warming would impose on California, in particular, compelling and extraordinary impacts."⁸⁶⁷ The identified impacts included reductions in water supply, more catastrophic wildfires, damage to the State's sizable coastline and ocean resources, and adverse health impacts from increasing air pollution due to higher temperatures. The Legislature also recognized that vehicles—particularly passenger vehicles and light-duty trucks—contribute significantly to California's greenhouse gas emissions and that reducing those emissions would, thus, necessarily have to be an important part of the State's efforts to reduce climate threats to the State and its people.

Since 2002, evidence of the severe threats facing California from climate change has only become clearer, as scientific understanding has advanced and California has begun to feel significant impacts. California's Fourth Climate Change Assessment documents some of the existing and expected impacts from climate change specifically in California, including:

- Air quality: rising temperatures "could lead to increases in ground-level ozone and reduce the effectiveness of emission reductions taken to achieve air quality standards."⁸⁶⁸
- Sea-level rise and coastal erosion: "If emissions continue at current rates, Fourth Assessment model results indicate that total sea-level rise by 2100 is expected to be 54 inches, almost twice the rise that would occur if greenhouse gas emissions are lowered to reduce risk."⁸⁶⁹ "31 to 67 percent of Southern California beaches may completely erode by 2100 without large-scale human interventions."⁸⁷⁰

⁸⁶⁶ Cal. Assembly Bill (AB) 1493, Chap. 200, Stats. 2002.

⁸⁶⁷ *Id.*

⁸⁶⁸ California's Fourth Climate Change Assessment, California's Changing Climate 2018: Statewide Summary Report 40 (Aug. 2018), *available at* <http://www.climateassessment.ca.gov/state/docs/20180827-StatewideSummary.pdf>.

⁸⁶⁹ California's Fourth Climate Change Assessment, California's Changing Climate 2018: A Summary of Key Findings from California's Fourth Climate Change Assessment 6 (Aug. 2018). Climate Assessment. Accessed on October 24, 2018. <http://www.climateassessment.ca.gov/state/docs/20180827-SummaryBrochure.pdf>.

⁸⁷⁰ *Id.* at 15.

- Precipitation and water supply: “California has the highest variability of year-to-year precipitation in the contiguous United States.”⁸⁷¹ By 2050, “the average water supply from snowpack is projected to decline by 2/3 from historical levels.”⁸⁷²
- Drought and land subsidence: The frequency of droughts is likely to increase due to climate change. “A secondary, but large, effect of droughts is the increased extraction of groundwater from aquifers in the Central Valley, primarily for agricultural uses. The pumping can lead to subsidence of ground levels, which around the San Joaquin-Sacramento Delta has been measured at over three-quarters of an inch per year. This subsidence impacts the canals that deliver water across the region.”⁸⁷³
- Agriculture: “Agricultural production could face climate-related water shortages of up to 16 percent in certain regions. Regardless of whether California receives more or less annual precipitation in the future, the state will be dryer because hotter conditions will increase the loss of soil moisture.”⁸⁷⁴
- Wildfires: “One Fourth Assessment model suggests large wildfires (greater than 25,000 acres) could become 50 percent more frequent by the end of century if emissions are not reduced. The model produces more years with extremely high areas burned, even compared to the historically destructive wildfires of 2017 and 2018.”⁸⁷⁵ “By the end of the century, California could experience wildfires that burn up to a maximum of 178 percent more acres per year than current averages.”⁸⁷⁶ Increased wildfire smoke will also lead to more respiratory illness.⁸⁷⁷
- Extreme heat events and human health: “Heat-Health Events (HHEs), which predict heat risk to local vulnerable populations, will worsen drastically throughout the state by mid-century. The Central Valley is projected to experience average HHEs that are up to two weeks long, and HHEs could occur four to ten times more often in the North Sierra region.”⁸⁷⁸ “The 2006 heat wave killed over 600 people, resulted in 16,000 emergency department visits, and led to nearly \$5.4 billion in damages. The human cost of these events is already immense, but research suggests that mortality risk for those 65 or older could increase ten-fold by the 2090s because of climate change.”⁸⁷⁹
- Infrastructure: Airports in major urban areas will be susceptible to major flooding from sea-level rise and storm surge by 2040-2080, and 370 miles of coastal

⁸⁷¹ California’s Fourth Climate Change Assessment, California’s Changing Climate 2018: Statewide Summary Report at 24.

⁸⁷² California’s Fourth Climate Change Assessment, California’s Changing Climate 2018: A Summary of Key Findings from California’s Fourth Climate Change Assessment at 5.

⁸⁷³ *Id.* at 14.

⁸⁷⁴ *Id.*

⁸⁷⁵ *Id.* at 6.

⁸⁷⁶ *Id.*

⁸⁷⁷ *Id.* at 8.

⁸⁷⁸ *Id.* at 7.

⁸⁷⁹ *Id.*

highway will be susceptible to coastal flooding by 2100.⁸⁸⁰ Land subsidence and sea-level rise could cause overtopping or failure of the levees in the Sacramento-San Joaquin Delta, “exposing natural gas pipelines and other infrastructure to damage or structural failure.”⁸⁸¹

There can be no question that California faces “extraordinary and compelling conditions”—now and in the future—from GHG emissions.

In fact, California is “one of the most ‘climate-challenged’ regions of North America.”⁸⁸² While other States will experience their own substantial climate harms, California’s extensive coastline, reliance on snowpack for water storage, susceptibility to drought, potential for land subsidence, and other geographic and climatic factors render it particularly vulnerable and impacted. Further, the impacts to California’s agricultural sector have the potential to dramatically affect the Nation as a whole because California currently produces more than a third of the country’s vegetables and two-thirds of the country’s fruits and nuts.⁸⁸³ Thus, even if EPA’s unlawful requirement that California’s conditions be “sufficiently different” from the rest of the nation could apply here, climate change impacts would still constitute such conditions.

California needs its GHG-reducing vehicle standards to meet these compelling and extraordinary conditions. As the Legislature found in 2002, and as remains true today, motor vehicles in California contribute significantly to total GHG emissions.⁸⁸⁴ In 2016, the transportation sector accounted for approximately 40 percent of California’s total GHG emissions.⁸⁸⁵ And within the transportation sector, light-duty vehicles account for the majority of GHG emissions, representing approximately 60 percent of the GHG emissions from the transportation sector.⁸⁸⁶ Therefore, any effective approach to reducing GHG emissions in California must include regulations to reduce emissions from motor vehicles.

EPA maintains that the Clean Air Act precludes California from addressing these substantial sources of the very pollution that poses an existential threat to California because other sources, in other states and other countries, also contribute to this pollution. In other words, EPA proposes to find that California may not reduce its contributions to an enormous problem because those reductions will not fully solve the problem. This is an absurd interpretation of one of the country’s most comprehensive environmental laws. Indeed, EPA’s interpretation reads the Clean Air Act as *requiring* of California the very inaction which leads to the tragedy of the commons. If California

⁸⁸⁰ California’s Fourth Climate Change Assessment, California’s Changing Climate 2018: Statewide Summary Report at 54-55.

⁸⁸¹ *Id.* at 12.

⁸⁸² California’s Fourth Climate Change Assessment, California’s Changing Climate 2018: A Summary of Key Findings from California’s Fourth Climate Change Assessment.

⁸⁸³ California Agricultural Production Statistics. California Department of Food and Agriculture. Accessed on October 24, 2018. <https://www.cdfa.ca.gov/statistics/>.

⁸⁸⁴ See also Fifth Assessment Synthesis Report: Summary for Policymakers. IPCC. 2014. p. 4.

⁸⁸⁵ Greenhouse Gas Inventory. CARB. Accessed on October 24, 2018.

<https://www.arb.ca.gov/cc/inventory/inventory.htm>.

⁸⁸⁶ Fast Facts on Transportation Greenhouse Gas Emissions. U.S. EPA. Accessed on October 24, 2018.

<https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions>.

is prevented from acting, it may well decrease the incentives others have to take the collective action necessary to solve the problem. Congress intended California to lead, not for EPA to tie California's hands when the scale of a problem gets "too big."

CARB recently compared the GHG emissions from California's light-duty vehicle on-road fleet under CARB's existing GHG standards and under a federal rollback (assuming flatlined standards beginning in 2021). CARB's standards would reduce CO₂ emissions by 57.37 million metric tonnes (MMT) from 2021 to 2030 relative to the scenario where only the federal, rolled-back standards are in effect.⁸⁸⁷ There is no question that these reductions are necessary, as part of larger efforts within California and around the world, to minimize the threats of catastrophic climate change.

In fact, these policies are especially critical now to avoid a tipping point with respect to climate change, at which juncture the GHG emissions baked into the atmosphere will result in abrupt climate change and rapid warming even without additional emissions. An international team of scientists has published a study in Proceedings of the National Academy of Sciences (PNAS)⁸⁸⁸ that indicates there is a risk of Earth entering what the scientists call "Hothouse Earth" conditions, even if the carbon emission reductions called for in the Paris Agreement are obtained.⁸⁸⁹ According to that study, a "Hothouse Earth" climate will stabilize in the long term at a global average of 4–5 degrees Celsius higher than pre-industrial temperatures with sea level 10–60 meters higher than today. Lead author Will Steffen from the Australian National University and Stockholm Resilience Centre explained, "our study suggests that human-induced global warming of 2 [degrees Celsius] may trigger other Earth system processes, often called 'feedbacks,' that can drive further warming - even if we stop emitting greenhouse gases."⁸⁹⁰ It is therefore critical, the authors conclude, to greatly accelerate the reduction, and ultimately elimination, of these emissions. CARB's GHG and ZEV standards are designed to advance that objective.

Indeed, when it adopted its Advanced Clean Cars program, CARB expressly recognized the importance of "the transformation of California's light-duty vehicle fleet" to enable the State's long-term air quality and climate objectives.⁸⁹¹ Accordingly, it designed this program to "be the catalyst to that transformative process."⁸⁹² The ZEV mandate is a crucial part of this strategy; it "act[s] as the technology forcing piece of the 2016 Draft TAR program" which is necessary because "the new vehicle fleet [in California] will need to be primarily composed of advanced technology vehicles ... by 2035" in order to

⁸⁸⁷ Proposed Amendments to the Low-Emission Vehicle III Greenhouse Gas Emission Regulation: Standardized Regulatory Impact Assessment (SRIA) Equivalent Document at A-1–A-2 (June 7, 2018). CARB. Accessed on October 24, 2018. <https://www.arb.ca.gov/regact/2018/leviii2018/appd.pdf>. p. A-1 to A-2.

⁸⁸⁸ Steffen, et al., *Trajectories of the Earth System in the Anthropocene*, PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES. Accessed on October 24, 2018. [10.1073/pnas.1810141115](https://doi.org/10.1073/pnas.1810141115).

⁸⁸⁹ *Id.*

⁸⁹⁰ Planet at risk of heading towards "Hothouse Earth" state. Stockholm University. Accessed on October 24, 2018. <https://www.stockholmresilience.org/research/research-news/2018-08-06-planet-at-risk-of-heading-towards-hothouse-earth-state.html>.

⁸⁹¹ Staff Report: Initial Statement of Reasons Advanced Clean Cars 2012 Proposed Amendments to the California Zero Emission Vehicle Program Regulations (Dec. 7, 2011) ("ZEV ISOR"). CARB. Accessed on October 24, 2018. <https://www.arb.ca.gov/regact/2012/zev2012/zevisor.pdf>. p. ES-2.

⁸⁹² *Id.*

meet the State's 2050 GHG goal.⁸⁹³ Put simply, “[t]o achieve full commercialization and place the industry on a pathway consistent with meeting long term goals, volume sales of ZEVs need to ramp up quickly.”⁸⁹⁴

As discussed in detail above, EPA's consideration of the wisdom of California's policies in reducing GHG emissions and climate impacts in California is unlawful. Indeed, it has long, and appropriately, been “EPA's practice to leave the decisions on controversial matters of public policy . . . to California.”⁸⁹⁵ EPA's intrusion on California's sovereign policymaking role here is inconsistent with the Agency's past practice and, more importantly, inconsistent with congressional intent and principles of federalism.

Finally, by inaccurately faulting California for not having demonstrated the connection between its “GHG standards and reducing any adverse effects of climate change *in California*”⁸⁹⁶ EPA is improperly shifting the burden of proof to California. EPA has the burden to demonstrate that no causal connection exists.⁸⁹⁷ EPA may not revoke California's waiver simply after concluding (erroneously) that *California* has not shown a causal connection. And EPA cannot meet its burden. For one thing, well-established law recognizes the importance and legitimacy of incremental progress, and the Clean Air Act, generally, and Section 209(b)(1), specifically, were designed to do so as well. For another, in other contexts, EPA is taking a position opposite to this one—asserting that incremental reductions in GHG emissions from major sources of those emissions are important and meaningful.⁸⁹⁸ EPA cannot have it both ways.

For all of these reasons, EPA has not demonstrated, and cannot demonstrate, that California does not need its GHG-reducing standards to meet compelling and extraordinary conditions of climate change.

b. California also needs its GHG-reducing standards because those standards address California's on-going criteria pollution challenges.

California's GHG and ZEV standards are also justified even if EPA focuses solely on their contribution to criteria pollution. And contrary to EPA's baseless contention, CARB explained in its 2012 waiver request, and explains further here, how its GHG and ZEV standards would help reduce criteria emissions.⁸⁹⁹

Rising temperatures exacerbate California's ozone problem by increasing ground-level ozone concentrations.⁹⁰⁰ Several studies indicate that a warming climate is expected to exacerbate surface ozone in California's two major air basins: South Coast Air Basin

⁸⁹³ *Id.* at ES-5.

⁸⁹⁴ *Id.* at 53.

⁸⁹⁵ 43 Fed.Reg. at 25,735; 41 Fed.Reg. at 44,210; *see also* 47 Fed.Reg. 7306 (Feb. 18, 1982) (granting deference to California in weighing policy matters); 36 Fed.Reg. 17,458 (Aug. 31, 1971); 40 Fed.Reg. at 23,104.

⁸⁹⁶ 83 Fed.Reg. at 43,249 (emphasis in original).

⁸⁹⁷ *MEMA I*, 627 F.2d at 1118.

⁸⁹⁸ *See, e.g.*, 93 Fed.Reg. 44,746, 44,749 (Aug. 31, 2018) (“This regulation will . . . caus[e] affected EGUs to begin to internalize the negative externality associated with CO₂ emissions.”).

⁸⁹⁹ Clean Air Act § 209(b) Waiver Support Document Submitted by the California Air Resources Board 15–16 (May 2012).

⁹⁰⁰ *Id.*

and San Joaquin Valley.⁹⁰¹ Median surface temperatures during the ozone season over western North America, including in the South Coast Air Basin and San Joaquin Valley, are projected to increase by the end of the 21st century. These temperature increases could counter the benefits from pollution control strategies used in an effort to meet established air quality standards, resulting in a “climate penalty.” This penalty is an increase in emission control requirements needed to offset changes in climate that increase the severity and frequency of air pollution episodes. Hence, while many analyses still show improvements in air quality over the coming century, climate change reduces the degree of improvement. Thus, efforts to reduce climate change by reducing GHG emissions are important as part of California’s broader efforts to reduce ozone levels in the State and achieve attainment with national standards that have become more stringent over time and may well continue to do so.⁹⁰² This, in itself, is sufficient justification for California’s GHG standards, even under a narrow interpretation of “compelling and extraordinary conditions.” It also underscores that EPA cannot propose this revocation on the basis of an alleged distinction between “global” and “local” pollution when there is no hard line between the two.

In addition, and contrary to EPA’s misleading assertion⁹⁰³ the ZEV standards reduce criteria pollutant emissions—emissions EPA does not dispute contribute to “compelling and extraordinary conditions” in California. EPA takes out of context a statement in CARB’s 2012 waiver request, in which CARB stated that there is “no criteria emissions benefit from including the ZEV proposal *in terms of vehicle (tank-to-wheel or TTW) emissions.*”⁹⁰⁴ The paragraph continues to explain that this is simply because the tailpipe criteria emissions reductions of the Advanced Clean Cars program are attributed to the LEV III criteria pollutant standards.⁹⁰⁵ Even so, there is no question that ZEVs emit zero tailpipe criteria pollutant emissions. Moreover, the ZEV standards would effectively reduce *upstream* criteria pollutant emissions by decreasing emissions from gasoline production and refineries.⁹⁰⁶ CARB projected the ZEV standards would reduce statewide reactive organic gas emissions by 6 tons per day, non-methane organic gas and NOx emissions by 3.5 tons per day, and particulate matter emissions by 0.2 tons per day in 2030, over and above the criteria emission reductions projected for the LEV III criteria program.⁹⁰⁷ EPA may not ignore these criteria pollution benefits, especially since it has approved this measure as part of California’s SIP and, thereby, acknowledged these very emission reductions, as discussed above. Notably, in its proposal EPA acknowledges that all components of California’s Advanced Clean Cars

⁹⁰¹ Jacob & Winner. *Effect of Climate Change on Air Quality*, 43:1 ATMOS. ENVIRON. 51 (Jan. 2009); Wu, et al., *Effects of 2000–2050 Global Change on Ozone Air Quality in the United States*, 113, D06302, J. GEOPHYS. RES.-ATMOS. (Mar. 19, 2008), available at <https://doi.org/10.1029/2007JD008917>; Rasmussen, et al., *The Ozone-climate Penalty: Past, Present, and Future*, 47:24 ENVTL. SCI. & TECH. 14258 (Dec. 17, 2013), available at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3990462/>.

⁹⁰² See California’s Fourth Climate Change Assessment, California’s Changing Climate 2018: Statewide Summary Report at 40.

⁹⁰³ 83 Fed.Reg. at 43,249.

⁹⁰⁴ Clean Air Act § 209(b) Waiver Support Document Submitted by the California Air Resources Board 15 (May 2012) (emphasis added).

⁹⁰⁵ *Id.*

⁹⁰⁶ *Id.* at 16; see also ZEV ISOR at 72, 75-79..

⁹⁰⁷ *Id.*

program are designed to work together, but EPA fails to provide any analysis of whether the program could still achieve its criteria emissions reductions benefits, including those anticipated in the approved SIP, if EPA breaks this integrated program apart. EPA cannot, therefore, determine that California does not need its GHG or ZEV standards to address the State's criteria pollution challenges, which EPA admits qualify as compelling and extraordinary.

Further, as CARB has consistently explained, California needs its Advanced Clean Cars program, and specifically its GHG and ZEV standards, now to increase adoption of technologies that will allow for greater emissions reductions required in future years.⁹⁰⁸ This "coordinated package of requirements ... assures the development of environmentally superior cars that will continue to deliver the performance, utility, and safety vehicle owners have come to expect."⁹⁰⁹ As part of this integrated program, the ZEV standards provide a crucial "technology-forcing piece ... by requiring manufacturers to produce increasing numbers of pure ZEVs and plug-in hybrid electric vehicles in the 2018-2025 model years."⁹¹⁰ This increasing ZEV deployment is critical to achieving the statewide 2030 and 2045 GHG requirements and 2031 South Coast SIP commitments (the 2016 State SIP Strategy identified the need for light-duty vehicles to reduce NOx emissions by over 85 percent by 2031 to meet federal standards).⁹¹¹

California needs both its GHG and ZEV standards to meet compelling and extraordinary conditions associated with climate change and criteria pollutants. There is no basis for EPA to revoke California's waiver for its GHG and ZEV standards based on Section 209(b)(1)(B).

H. EPA's proposal to find that California's ZEV and GHG standards are inconsistent with Section 202(a) is unlawful.

EPA also proposes to revoke California's waiver for its GHG and ZEV standards under Section 209(b)(1)(C) based on a proposed finding of inconsistency with Section 202(a). EPA's proposed finding under Section 209(b)(1)(C) is unlawful because the sole basis for it is EPA's reinterpretation of this provision which, as explained above cannot lawfully be applied retroactively to an already granted waiver.⁹¹² EPA's proposed finding is also unlawful because it is based on an unambiguously foreclosed and unreasonable reinterpretation of the statute, and an improper and inadequate evaluation of the facts.

⁹⁰⁸ CARB Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider the "LEV III" Amendments (December 7, 2011) ("ACC ISOR"). CARB. Accessed on October 24, 2018. <https://www.arb.ca.gov/regact/2012/leviiighg2012/levisor.pdf>. p. ES-3.

⁹⁰⁹ *Id.*

⁹¹⁰ *Id.*

⁹¹¹ Revised Proposed 2016 State Strategy for the State Implementation Plan 11, 12, 24 (2017). CARB. Accessed on October 24, 2018. <https://www.arb.ca.gov/planning/sip/2016sip/rev2016statesip.pdf>.

⁹¹² EPA has not proposed to find that the waiver should be revoked based on the agency's historical interpretation of § 209(b)(1)(C) and, therefore, may not make such a finding in its final action.

any case, the fact that two regulations might share a common measurement does not suffice to make one impermissibly “related to” the other.

3. ZEV mandates are not “related to fuel economy standards.”

NHTSA is simply incorrect when it states, without support, that “the purpose of the ZEV program is to affect fuel economy.”¹⁰⁶⁹ As NHTSA acknowledges, California adopted the ZEV mandate in 1990 to encourage innovation in ZEV technology and infrastructure to support deployment of ZEVs.¹⁰⁷⁰ (“California initially launched its ZEV mandate in 1990 to force the development and deployment of ZEVs to reduce smog-forming emissions.”). CARB continues to rely on the ZEV program to pursue those goals, which are necessary to achieve needed long-term reductions in both GHG and criteria pollutant emissions; the purpose of the ZEV mandate was, and continues to be, to lay a foundation for a future with truly low emissions of both criteria pollutants and GHGs.¹⁰⁷¹

To that end, California has incorporated its ZEV mandate into its State Implementation Plan to attain National Ambient Air Quality Standards for ozone and fine particulate matter. “Approval and Promulgation of Implementation Plans; California; California Mobile Source Regulations,”¹⁰⁷² EPA’s approval of that plan gives it “the force and effect of federal law.”¹⁰⁷³ Accordingly, it is not subject to federal preemption, and must be harmonized with federal law.¹⁰⁷⁴

Moreover, ZEVs are expressly outside EPCA’s definition of fuel economy.¹⁰⁷⁵ In NHTSA’s words, “[i]mproving fuel economy means getting the vehicle to go farther on a gallon of gas.”¹⁰⁷⁶ ZEVs, of course, do not run on gas, and NHTSA cannot even consider the availability of ZEVs when it determines the level of fuel economy that is maximum feasible.¹⁰⁷⁷ And while NHTSA points to the fact that tailpipe GHG emissions are largely measured the same way as fuel economy¹⁰⁷⁸ eligibility for California’s ZEV

¹⁰⁶⁹ 83 Fed.Reg. at 43,238.

¹⁰⁷⁰ *Id.*

¹⁰⁷¹ *Id.* at 2 (“Only by reducing criteria pollutant and greenhouse gas emissions to near zero can we achieve California’s long-term air quality and climate change goals.”).

¹⁰⁷² 81 FR 39,424 (June 16, 2016).

¹⁰⁷³ *Safe Air for Everyone v. EPA*, 488 F.3d 1088, 1091 (9th Cir. 2007) (internal quotations omitted).

¹⁰⁷⁴ *See Ass’n of Am. R.R. v. S. Coast Air Qual. Mgmt. Dist.*, 622 F.3d 1094, 1098 (9th Cir. 2010).

¹⁰⁷⁵ 49 U.S.C. § 32901(11) (“‘[F]uel economy’ means the average number of miles traveled by an automobile for each gallon of gasoline (or equivalent amount of other fuel) used....”); *see also id.* § 32901(11) (“‘[F]uel’ means gasoline; diesel oil; or other liquid or gaseous fuel that the Secretary decides by regulation to include in this definition as consistent with the need of the United States to conserve energy.”)

¹⁰⁷⁶ 83 Fed.Reg. at 42,999.

¹⁰⁷⁷ 42 U.S.C. § 32902(h)(1); *See also* 83 Fed.Reg. at 43,212 (“NHTSA also cannot consider the use of alternative fuels by dual-fuel vehicles nor the availability of dedicated alternative fuel vehicles in any model year.”).

¹⁰⁷⁸ 83 Fed.Reg. at 43,234.

program is not.¹⁰⁷⁹ Accordingly, ZEV mandates have no “connection to” fuel economy standards, and cannot be “related to fuel economy standards.”¹⁰⁸⁰

Undeterred, NHTSA appears to go so far as to suggest that EPCA preempts state regulation of anything that might involve the use of fossil fuels and is even indirectly “associated with the vehicle performing its work of traveling down the road.”¹⁰⁸¹ But this impossibly broad interpretation goes well beyond the concerns Congress addressed in EPCA; it would go so far as to preempt efforts to decarbonize the electric grid, on the grounds that some emissions from the electricity sector can be attributable to ZEVs. NHTSA may not redefine the purpose of the statute (or the meaning of “fuel economy”) in order to preempt state law.

NHTSA also fails to acknowledge or explain the apparent change in its position from 2012. Nor does NHTSA justify its sudden need to take a position on ZEV mandates after remaining silent on them for nearly three decades. The agency points to the increasing stringency of ZEV mandates, but that merely underscores that the purpose of those mandates is to increase the uptake of ZEV technology.

a. California’s Advanced Clean Car Program is not conflict-preempted.

For many of the same reasons described above, California’s Advanced Clean Car program is not conflict-preempted. As noted above, conflict preemption is a fact-specific inquiry that NHTSA has not bothered to conduct. Nor would it be appropriate to conduct such an inquiry at this point, given the uncertainty of potential changes to the federal program as well as technological and economic considerations underlying NHTSA’s assertion of a conflict.

¹⁰⁷⁹ Compare 49 U.S.C. § 32904(c) (“[T]he Administrator shall use the same procedures for passenger automobiles the Administrator used for model year 1975 (weighted 55 percent urban cycle and 45 percent highway cycle), or procedures that give comparable results.”), with Cal. Code. Regs., tit. 13, § 1962.2(a) (“The Executive Officer shall certify ... as ZEVs, vehicles that produce zero exhaust emissions of any criteria pollutant (or precursor pollutant) or greenhouse gas, excluding emissions from air conditioning systems, under any possible operational modes or conditions.”).

¹⁰⁸⁰ NHTSA requests comment on “the extent to which the zero-tailpipe-emissions vehicles compelled to be sold by California’s ZEV program reduce temperatures in the parts of California which are in non-attainment for ozone and which contain dense populations of allergy sufferers.” 83 Fed.Reg. at 43,235 n.508. NHTSA does not say what the density of allergy sufferers in particular non-attainment areas has to do with the legal question of how to interpret the phrase “related to fuel economy standards,” nor how it applies to the ZEV program.

To the extent NHTSA is attempting to cast doubt on the ZEV program’s purpose of addressing criteria pollution, it entirely fails to do. EPA, the federal agency responsible for administering the Clean Air Act, has already approved California’s state implementation plan—including the ZEV program—“necessary or appropriate to meet the applicable requirements of” § 110 of the Clean Air Act, governing state implementation plans for attainment of National Ambient Air Quality Standards. 42 U.S.C. § 7410(a)(2)(A). As described above, the ZEV program aims to encourage innovation and investment to drive long-term reductions of both criteria pollution and GHG emissions; its purpose should not be judged merely by the precise GHG reductions achieved by those cars “compelled to be sold” now. Even if it were viewed through that lens, “small incremental steps” are perfectly valid ways for states to address climate change. *Massachusetts v. EPA*, 549 U.S. 497, 524 (2007). The problem need not be resolved in “one fell regulatory swoop.” *Id.*

¹⁰⁸¹ 83 Fed.Reg. at 43,234.

**Comments of the American Fuel & Petrochemical Manufacturers on the U.S.
Environmental Protection Agency's Request for Comment on The Safer Affordable Fuel-
Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light
Trucks**

**Proposed Rule
Docket No. EPA-HQ-OAR-2018-0283
83 Fed. Reg. 42,986 (Aug. 24, 2018)**

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economy of the kept vehicle by 10 percent results in a 4.8 percent *decrease* in the fuel economy of the purchased vehicle.”⁶¹ The authors observed “significant changes in usage patterns that further reduce the net fuel savings” through increases in mileage for both vehicles that “erodes over 60% of the fuel savings from the fuel economy increase of the kept vehicle on net...”⁶² Attribute substitution introduces a new and previously unaccounted for phenomenon that reduces the effectiveness of higher fuel economy standards. The Agencies should consider this research in gauging the assumed benefits of the 2012 Rule.

D. Cross-Subsidies Inflate Vehicle Prices and Hinder New Vehicle Sales

It is common practice for manufacturers to cross-subsidize vehicle models in their lineups to recoup costs, particularly for those models where manufacturing costs cannot be passed on to consumers directly.⁶³ As the Agencies found in the Proposed Rule, the significant “technology cost burden” of electrified vehicles requires cross-subsidization, inflating the prices of pick-up trucks, SUVs, and other conventional vehicles.⁶⁴ One former auto executive explained that the cost of SUVs has risen significantly because OEMs are “trying to recover what they're losing at the other end with what I call compliance vehicles, which are Chevy Volts, Bolts, plug-in Cadillacs and fuel cell vehicles”⁶⁵

⁶¹ *Id.* at 5.

⁶² *Id.* at 5-6; *see also* Laura Bliss, Why Gas-Efficient Cars Can't Save the Climate: New Research Reveals Unintended Consequences, *City Lab* (Oct. 5, 2017), available at, <https://www.citylab.com/transportation/2017/10/why-gas-efficient-cars-cant-save-the-climate/541992/> (“In a new white paper, scientists at Yale University, University of California, Davis, and the Massachusetts Institute of Technology reveal an unintended consequence of tighter fuel standards: When a two-car household goes to replace one of its vehicles, a household that already owns a fuel-efficient car tends to buy a gas hog for its second car. This decision-making erodes more than 60 percent of the fuel savings that first car should have yielded, they found.”).

⁶³ 83 Fed. Reg. at 43,224.

⁶⁴83 Fed. Reg. at 43,084-85.

⁶⁵Six Superstars Ponder the Future of an ‘Irrational’ Auto Industry, *Automotive News* (Aug. 3, 2015), available at, http://www.autonews.com/article/20150803/INDUSTRY_ON_TRIAL/308039971/six-superstars-ponder-the-future-

This means that even those who are completely unwilling to pay for these vehicles still pay for them in part by absorbing a markup on internal combustion vehicle costs.⁶⁶ Although this does not directly impinge on NHTSA's long-standing prohibition against dictating specific technologies to meet fuel economy or emission standards, requiring *all* vehicle consumers to pay for specific control technologies used by a very few certainly violates the spirit of that prohibition.⁶⁷ These cross-subsidies are effectively a tax imposed on all those choosing not to purchase electrified vehicles and the Agencies are correct in proposing not to require manufacturers to exacerbate that tax by setting standards so onerous they effectively dictate the sale of more of those vehicles. Further, imposing cross-subsidies on new vehicle purchasers shoulders states who choose not to adopt California's ZEV mandate with a significant portion of the mandate's cost. Those states lack any power to reduce or block the cross-subsidies imposed on their citizens that are necessary to comply with California regulations. Nor will they have any power to control future California actions, such as increasing the magnitude of the ZEV mandate. Should California and the opt-in states mandate more stringent ZEV requirements (as California hopes to do),⁶⁸ this will only exacerbate cross-subsidies already imposed on new vehicle purchasers without any political recourse absent federal intervention.

[of-an-irrational-auto-industry](#) (“I don't know if anybody noticed, but full-size sport-utilities used to be — just a few years ago used to be \$42,000, all in, fully equipped. You can't touch a Chevy Tahoe for under about \$65 [thousand] now. Yukons are in the \$70 [thousands]. The Escalade comfortably hits \$100 [thousand]. Three or four years ago they were about \$60,000. What this is, is companies trying to recover what they're losing at the other end with what I call compliance vehicles, which are Chevy Volts, Bolts, plug-in Cadillacs and fuel cell vehicles.”) (quoting Bob Lutz, former Vice Chairman of GM).

⁶⁶83 Fed. Reg. at 43,085.

⁶⁷*See id.* at 43,230 (noting “the agency's goal of providing sufficient manufacturer flexibility to meet consumer needs and consumer choice preferences”).

⁶⁸ *See* Executive Order B-48-18 (requiring California government entities “to put at least 5 million zero-emission vehicles on California roads by 2030.”).

DETAILED COMMENTS OF

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

on

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

Docket IDs: EPA-HQ-OAR-2018-0283 / NHTSA-2018-0067

October 26, 2018

relevant to the analysis of *California's* waiver, ZEV penetration nationwide and in our States is increasing, and programs and policies are in place to ensure continued growth. *See* Appendix B on ZEV Penetration and Infrastructure Beyond California.

There is no cognizable evidence to support EPA's proposed finding under Section 209(b)(1)(C), and, in fact, any decision to revoke would be *contrary to* the evidence. As discussed above, there is also no legal basis for that proposed finding.

EPA's proposed revocation of parts of California's ACC waiver is contrary to the statute, the evidence, congressional intent, and well-established legal principles. It should be withdrawn.

C. EPA Should Abandon Its Vague, Ill Conceived Proposed Determination Regarding Section 177 and California's GHG Standards

EPA states that it "proposes to determine" that Section 177 "does not apply to CARB's GHG standards." 83 Fed. Reg at 43253. Specifically, even in a scenario where California's light duty vehicle GHG emission standards remain in effect, EPA would still seek to block Section 177 States from continuing to implement and enforce such standards and/or from adopting such standards.³⁵³ EPA does not identify any legal authority for its proposed determination nor does it provide proposed regulatory text or any indication as to the format in which the proposed new interpretation would be memorialized. EPA also fails to provide any information as to how the determination would or could be implemented. EPA explains only that, notwithstanding years of practice to the contrary, the "text, context and purpose" of Section 177 now "*suggest*" to EPA that it should create an extra-statutory role for itself under Section 177 in order to limit Section 177 States to adopting California standards "designed to control criteria pollutants to address NAAQS nonattainment." *Id.* (emphasis added). However, the text, context and purpose of Section 177 expressly do not include any pollutant-specific limitation, and Congress gave EPA no authority to interpret or implement the provision.

It is bad enough that EPA seeks to shirk its own duty by rolling back federal GHG standards, and we urge the Agency to rethink that proposal. But it is an egregious overreach, and flies in the face of the core principle of cooperative federalism that gave rise to Sections 209 and 177, for EPA to actively seek to block States from doing all they can to protect the health and safety of their own residents. To date, twelve States have adopted California's Advanced Clean Car standards, including California's GHG emission standards, and others are considering adoption. Collectively, these States represent over a third of the nation's new car sales and have a population of more than 113 million.³⁵⁴ In the face of insufficient federal action, many States have adopted their own GHG reduction targets, such as New York's plan to reduce statewide

³⁵³ The proposed determination's explicit limitation to GHG standards precludes EPA from seeking to extend any final determination to Section 177 States' ZEV standards. Nor should EPA entertain proposing a similar determination as to States' ZEV standards since any such determination would suffer from the same infirmities as this proposed determination and would be equally invalid.

³⁵⁴ States' Appx. C-120, "CARB Finds Vehicle Standards Are Achievable and Cost-Effective (Mar. 24, 2017), available at: <https://ww2.arb.ca.gov/news/carb-finds-vehicle-standards-are-achievable-and-cost-effective>.

GHG emissions to 40% below 1990 levels by 2030 or Massachusetts' mandate to reduce statewide GHG emissions at least 80% below 1990 levels by 2050. Because the transportation sector is the largest single contributor to GHG emissions in many states, the ability of States to address vehicle emissions, and to choose between the federal standards and California's standards is a vitally important tool.

As set forth in more detail below, the proposed determination defies both the law and common sense. The plain language of Section 177 refutes EPA's proposed interpretation, and the context further undercuts EPA's proposed reading. EPA's past practice, unaddressed in the proposal, is also completely contrary. And even assuming, for the sake of argument, that Section 177 requires that California standards adopted by Section 177 States have a connection to criteria pollution—which it plainly does not—the GHG standards do in fact help States address criteria pollution under NAAQS nonattainment and maintenance plans adopted pursuant to Part D. Indeed, EPA has approved adoption of the vehicle GHG standards into several States' SIPs and there is no question that GHG emissions contribute to increased heat waves, which intensify concentrations of ground level ozone. The proposal also lacks sufficient detail to meet EPA's obligations under the APA, including any explanation as to how it would be implemented and/or any analysis of the environmental impacts, costs and/or asserted benefits of implementation. Nor did EPA consult with any states on this preemption proposal in contravention of the agency's obligation to do so under Executive Order 13132. We urge EPA to discard this deeply flawed, destructive proposal.

1. EPA's Proposed Determination Is Contrary to Law

a. EPA Lacks Authority to Adopt or Implement the Proposed Determination

EPA fails to identify any legal provision that would authorize it to adopt or implement the proposed determination, nor could it. Congress gave EPA no role in implementation of Section 177 and no authority to make any type of determination regarding the scope of California standards states may choose to adopt.³⁵⁵ The statute's plain language confers exclusively upon those States with SIP provisions approved under Part D of Subchapter I of the Act the discretionary authority to adopt whatever vehicle emission standards California has adopted, subject only to the requirements of identity and lead time. Any EPA attempt to interfere with this direct grant of exclusive, discretionary authority would be *ultra vires*.

EPA seeks comment on "how and when this new interpretation should be adopted and implemented" (83 Fed. Reg. 43,253) but fails to provide any draft regulatory text or to offer any implementation proposals for stakeholders to consider. It is EPA's job to provide this information to commenters, not vice versa. Regardless, as noted above, the statute forecloses any EPA interference with Section 177 States' decision making about what California standards to adopt. Thus, even assuming EPA were to publish a statement offering its interpretation of

³⁵⁵ EPA's "single, narrow responsibility" related to Section 177 is to issue regulations to define the commencement of the model year for use in measuring lead time. *Motor Vehicle Mfrs. Ass'n v. NYSDEC*, 17 F.3d 521, 535 (2d Cir. 1994).

Section 177, there is no legal avenue for such interpretation to be implemented or to otherwise have any force or effect.

The closest EPA comes to providing any clue about implementation is in its question as to timing for adoption of the proposed determination, which EPA explains it is considering “in order to allow additional time for planning and transition.” 83 Fed. Reg. 43,253. Insofar as this is meant to imply that EPA is considering attempting to force removal of the GHG standards from States’ SIPs despite EPA’s prior approval, there is no legal basis for such action. And even if there were some issue as to inclusion of the GHG standards in SIPs, States could continue to adopt and implement California vehicle standards outside the SIP process with no interference by EPA.

b. The Unambiguous Language of Section 177 Negates EPA’s Position and Eliminates Any Room for Interpretation

EPA’s assertion that the text and context of Section 177 “suggest” some limitation on the types of California standards that Section 177 States may adopt is belied by the plain language. Tellingly, EPA fails to identify any specific text in support of its contention or to offer any explanation of its purported textual analysis. The statute provides that “any State which has plan provisions approved under [Part D of Subchapter I of the Act] may adopt and enforce for any model year standards relating to the control of emissions from new motor vehicles . . .” 42 U.S.C. § 7507. There is no modifier for the word “standards” and no other textual basis to impose a limitation based on the type of air pollutant covered by a California standard. Indeed, the words “air pollutant” are conspicuously absent from the text of Section 177.

The threshold requirement of Section 177 is that a State “has plan provisions approved under this part [D].” Such approved plan provisions are expressly not limited to States with nonattainment plans (Section 172). Rather, they include, for example, States that have achieved attainment but have approved maintenance plans (Section 175A) or have other approved plan provisions related to their being within the Ozone Transport Region (Section 184), in addition to states with approved nonattainment plans. But once past that threshold, the plain text unambiguously vests States with discretionary authority to determine what California “standards relating to the control of emissions from new motor vehicles” to adopt, subject only to the identity and lead time requirements. This authority is granted directly and exclusively to states, with no intermediary role for EPA. In short, while Congress may have constrained which States can make use of Section 177, the unambiguous plain text places no restriction on which California standards Section 177 States can choose to adopt nor does it carve out any space for EPA insert itself into the process.

Unable to identify any statutory text to support the proposal, EPA instead relies on its erroneous reading of the context, citing to Section 177’s title (“New motor vehicle emission standards in nonattainment areas”) and its placement in the Clean Air Act in Part D - Plan Requirements for Nonattainment Areas. However, EPA cannot rely on the title or placement of Section 177 to attempt to create ambiguity. As the Supreme Court has made clear, “[i]f the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress.” *Chevron*, 467 U.S. at 842–43; see also, *Util. Air Regulatory Grp. v. EPA* (“*UARG*”), 134 S. Ct. 2427, 2446, (2014) (“[A]n

agency may not rewrite clear statutory terms to suit its own sense of how [a] statute should operate.”) This canon of statutory interpretation—that the inquiry begins and ends with the statutory text where, as here, the text is unambiguous—is equally applicable to any EPA argument based on either title or placement. *See, e.g., Whitman v. American Trucking Associations*, 531 U.S. 457, 482 (2001) (where statutory text is clear, “[t]his eliminates the interpretive role of the title, which may only shed light on some ambiguous word or phrase in the statute itself.”); *Nat’l Ctr. For Mfg. Sci. v. Dept. of Def.*, 199 F.3d 507, 511 (D.C. Cir. 2000) (“[t]here is no reason to cloud the plain meaning of subsection (d) because of its placement in section 1006.”)

c. The Structure and Purpose of Section 177 Confirm There Is No Room for Interpretation

EPA focuses on the title and placement of Section 177 but fails to acknowledge that the Clean Air Act authorizes regulation of GHGs from vehicles (by both EPA and California) and authorizes States to adopt California standards. Thus, the broader context supports a reading of Section 177 that allows States to adopt and enforce California GHG emission standards. Moreover, EPA’s reading would not result in there being no vehicle GHG emission standards applicable in Section 177 States; instead the standards in those States would drop down to EPA’s weaker federal standards. So, what EPA is really targeting is not the regulation of vehicle GHG emissions in Section 177 States but the stringency of the emission standards. Yet, just as EPA offers no text or context to support a limitation based on the pollutant being controlled, EPA also fails to identify any textual or contextual support related to stringency.

EPA’s context argument is also flawed because its reading of the title of Section 177 conflates “nonattainment areas” with “nonattainment (i.e., criteria) pollutants.” The title can only fairly be read to limit which States can avail themselves of Section 177, not to place any limit on the standards such States may opt to adopt. The title’s abbreviated reference to “nonattainment areas” is a shorthand reference to States which have approved plan provisions under Part D. And this points up another problem with EPA’s rationale: Congress did not limit States to adopting only those California standards that address the specific pollutant(s) for which such States have approved SIP provisions under Part D. Thus, for instance, a State with only ozone nonattainment areas can still adopt California standards that address other criteria pollutants. Section 177’s purpose, as reflected in the text and legislative history, was to allow States flexibility to devise plans and choose measures to deal with their own unique and complex air pollution challenges.³⁵⁶

³⁵⁶ As stated by Congressman Rogers of Florida during floor debate: “It is the feeling of the committee that if there are States, such as Colorado, which have a very heavy pollution problem, that might desire to adopt and enforce the California option for themselves they may do so. The gentleman has indicated that dire consequences may come about. But if they are all that dire, then I am sure the State would not make that judgment. No one will force the State to make a judgment. It is left up to the State. They can either do it or not do it. Notice is required so the process will be very orderly. If a State decides to make that change to clean up the air, clean up the automobile, it can adopt and enforce the California standards which are more strict than the

EPA also ignores the statutory construction maxim of *expressio unius est exclusio alterius*. See, e.g., *Halverson v. Slater*, 129 F.3d 180, 185-86 (D.C. Cir. 1997) (statutory delegations to Coast Guard officials only excludes delegations to non-Coast Guard officials). Specifically, Congress did impose enumerated, explicit limitations on States' exercise of their authority under Section 177: States may only opt in to California's motor vehicle emission standards if the state standards are: (1) identical to California's; and (2) adopted with sufficient lead-time. 42 U.S.C. § 7507. But Congress but did not express any limitation as to the types of pollutants covered and/or types of California standards to which States may opt-in. The presence of two explicit limitations reflects an intent to exclude the additional limitation that EPA now seeks to read in to the statute. Congress also expressly limited the role to be played by EPA with respect to Section 177: adopting regulations to define commencement of the model year. This express grant of limited authority further refutes EPA's apparent belief that it can manufacture for itself an extra-statutory role to interfere with authority that Section 177 gives exclusively, and unambiguously, to States.

EPA's reading of the context also overlooks the rule of construction that identical words used in different parts of the same act are intended to have the same meaning. See, e.g., *Nuclear Energy Institute v EPA*, 373 F.3d 1251, 1282-83 (D.C. Cir. 2004). While EPA incorrectly focuses on the placement of Section 177 among the Part D provisions, the agency ignores the fact that Section 177 uses language ("standards relating to the control of emissions") virtually identical to the language authorizing California to adopt standards in Section 209(b) ("standards (other than crankcase emission standards) for the control of emissions"). This parallel language is intended to have the same meaning in both places and further reflects the lack of any intent to circumscribe the type of California standard available for opt-in under 177.

Finally, EPA's proposed reading runs afoul of the canon of statutory construction that statutes must be read to avoid absurd or patently unreasonable results. A rule that prevents Section 177 States from adopting California's GHG standards but not any other California standards would result in creation of the "third vehicle" that Section 177 forbids. States would thus be required to either: 1) extract just the GHG portion of the Advanced Clean Cars rules from their programs, creating a hybrid that falls between the California programs and the weakened federal program; or 2) to avoid the third car problem States would also have to drop other non-GHG California standards to fall in-line with the weakened federal program, negating their discretionary authority, not disputed by EPA, to adopt California criteria pollutant standards. Either outcome would be absurd and clearly contrary to what Congress intended in creating Section 177.

d. EPA's Proposed Interpretation Would Get No Deference

Should EPA finalize this proposal, its interpretation would be entitled to no deference by a reviewing Court. The plain language of Section 177 gives EPA no authority to interpose any legally binding rules limiting the standards that states may elect to adopt. Accordingly, the

Federal. A State can do that by giving 2 years notice to the automobile manufacturing companies. So there is no problem. It will work very smoothly. The States would have the right to adopt only the standards which are identical to the California standards." Legislative History of the Clean Air Act Amendments of 1977 P.L. 95-95 (1979).

Chevron doctrine does not apply. *U.S. v. Mead*, 533 U.S. 218, 231-32 (2001). Nor would any EPA final determination be entitled to a lower level of respect (e.g., *Skidmore* deference). Not only is the agency seeking to establish new requirements never previously identified, it is reversing a long history of past practice without explaining, or even acknowledging, the contradiction. For well over a decade, EPA has been aware of Section 177 States' adoption of California's GHG standards but has not raised this issue. On the contrary, EPA has approved the adoption of California's GHG standards into several states' SIPs.³⁵⁷ Thus, States have substantial reliance interests in the policies EPA seeks to abandon, and EPA has not satisfied the heightened requirement for its course-change justification. *See Fox Television*, 556 U.S. at 515. This heightened requirement is only strengthened by the fact that EPA's new policy contradicts the factual findings that underlie its approval of California's GHG standards into SIPs. *See id.* EPA's scant, selective, self-serving analysis falls far short of fulfilling its obligation.

e. California's GHG Standards do Address Criteria Pollutants

Even if EPA were correct that Section 177 limits states to adopting California standards designed to control criteria pollutants, which we strongly dispute, the CARB GHG standards fit within that hypothetical limitation. First, CARB has made clear that among the objectives of the vehicle GHG standards is reduction of the number of days with extreme heat that leads to formation of dangerous levels of ozone pollution. 74 Fed. Reg. 32,744, 32,763 (July 8, 2009). And EPA has explicitly confirmed its agreement with California's view: "There is a logical link between the local air pollution problem of ozone and California's desire to reduce GHGs as one way to address the adverse impact that climate change may have on local ozone conditions . . . it would be appropriate to consider [California's] GHG standards as designed in part to help address [that problem]." *Id.* Since that time, as noted above, EPA repeatedly reaffirmed the connection between GHG emissions and NAAQS nonattainment by approving the adoption of CARB's GHG standards into Section 177 States' SIPs. Yet again, EPA fails to explain its reversal or to even acknowledge that it is contradicting itself although any attempted explanation would lack credibility in light of the large body of science confirming the connection between climate change and ozone pollution.³⁵⁸ Regardless, because the premise for EPA's proposal is mistaken, the agency should proceed no further.

f. The Proposal Is Too Vague and Conclusory to Allow for Meaningful Public Participation and Therefore Does Not Meet EPA's Obligations under the Administrative Procedure Act

EPA's proposal to "determine that [Section 177] does not apply to CARB's GHG standards" would violate the Administrative Procedure Act (APA), 5 U.S.C. § 501 *et seq.*, both because it is arbitrary and capricious, and because it fails to meet the fundamental legal

³⁵⁷ EPA has approved California's GHG standards into the SIPs for Connecticut (80 Fed. Reg. 13768 (March 17, 2015)), Delaware (80 Fed. Reg. 61752 (October 14, 2015)), Maine (82 Fed. Reg. 42233 (September 7, 2017)), Maryland (80 Fed. Reg. 40917 (July 14, 2015)), Pennsylvania (77 Fed. Reg. 3386 (Jan 24, 2012)), and Rhode Island (80 Fed. Reg. 50203 (August 19, 2015)).

³⁵⁸ *See States' Appx. C-118 at 64, 315-317, Nat'l Research Council of the Nat'l Acad. of Sciences, Advancing the Science of Climate Change at 64, 315-317 (2010).*

Appendix B: ZEV Penetration and Infrastructure Beyond California

Submitted with Comments by:

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

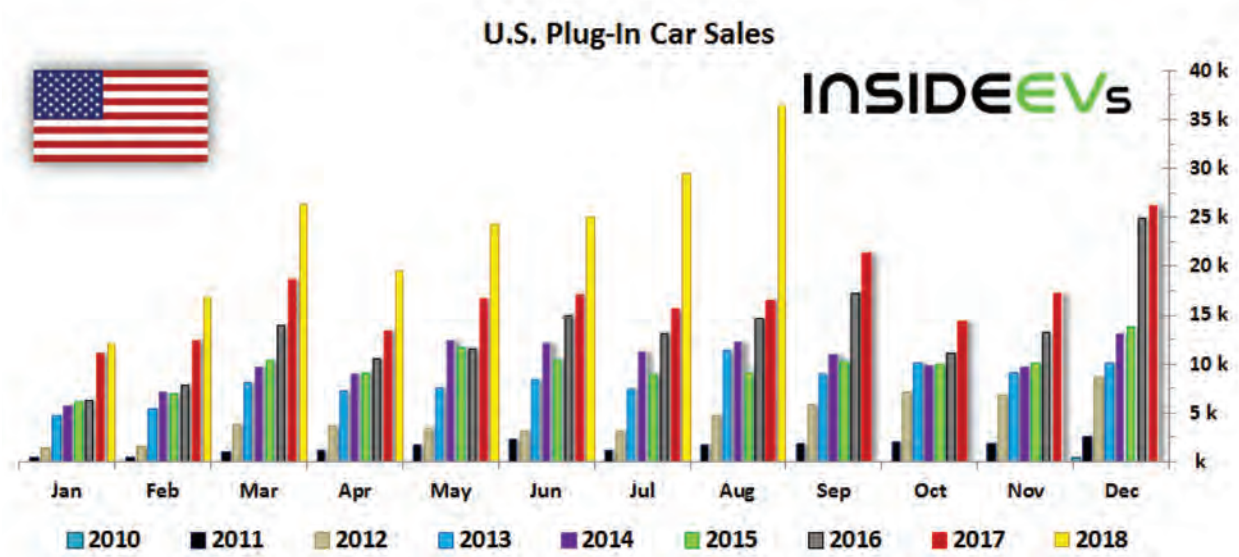
the Environmental Protection Agency’s and the National Highway Traffic Safety Administration’s Joint Proposed “SAFE” Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks; and the Draft Environmental Impact Statement

Docket IDs: EPA-HQ-OAR-2018-0283 / NHTSA-2018-0067 / NHTSA-2017-0069

Nationwide/Regional

Just as in California, ZEV penetration and charging infrastructure nationwide are well on track to meet targets through 2025 and beyond.¹ Electric vehicle sales nationwide have increased in the last eight years, with a steeper upward trend since 2015.² And the market share of electric vehicles nationwide has steadily increased since 2015.³ Indeed, sales in 2018 have been dramatically higher than in past years, as depicted in Figure 1.

Figure 1: U.S. Plug-In Electric Vehicle Car Sales, Monthly from 2010–2018⁴



Since January 2018, the increase in electric vehicle sales has been sustained and has grown to unprecedented levels in recent months. Although not yet reflected in this chart, domestic sales of plug-in electric vehicles for September 2018 totaled 44,589 vehicles, a 22 percent increase over the previous month's already impressive figure, and more than double the number sold in September 2017.⁵ If this trend continues, total sales of plug-in electric vehicles in 2018 will top 366,000, an 80 percent increase over 2017, and only slightly below the number projected for

¹ ZEVs include battery electric vehicles, plug-in hybrid electric vehicles, and hydrogen fuel cell vehicles. This Addendum focuses on battery and plug-in hybrid electric vehicles, which make up the vast majority of ZEV sales.

² States' Appx. C-122, Advanced Technology Vehicle Sales Dashboard, ALLIANCE OF AUTOMOBILE MANUFACTURERS, (hereinafter "Alliance Advanced Technology Vehicle Sales Dashboard"), <https://autoalliance.org/energy-environment/advanced-technology-vehicle-sales-dashboard/> (Data compiled by the Alliance of Automobile Manufacturers using information provided by IHS Markit; data last updated Aug. 23, 2018) (sales data of BEVs and PHEVs nationwide).

³ *Id.* (market share data for BEVs and PHEVs nationwide).

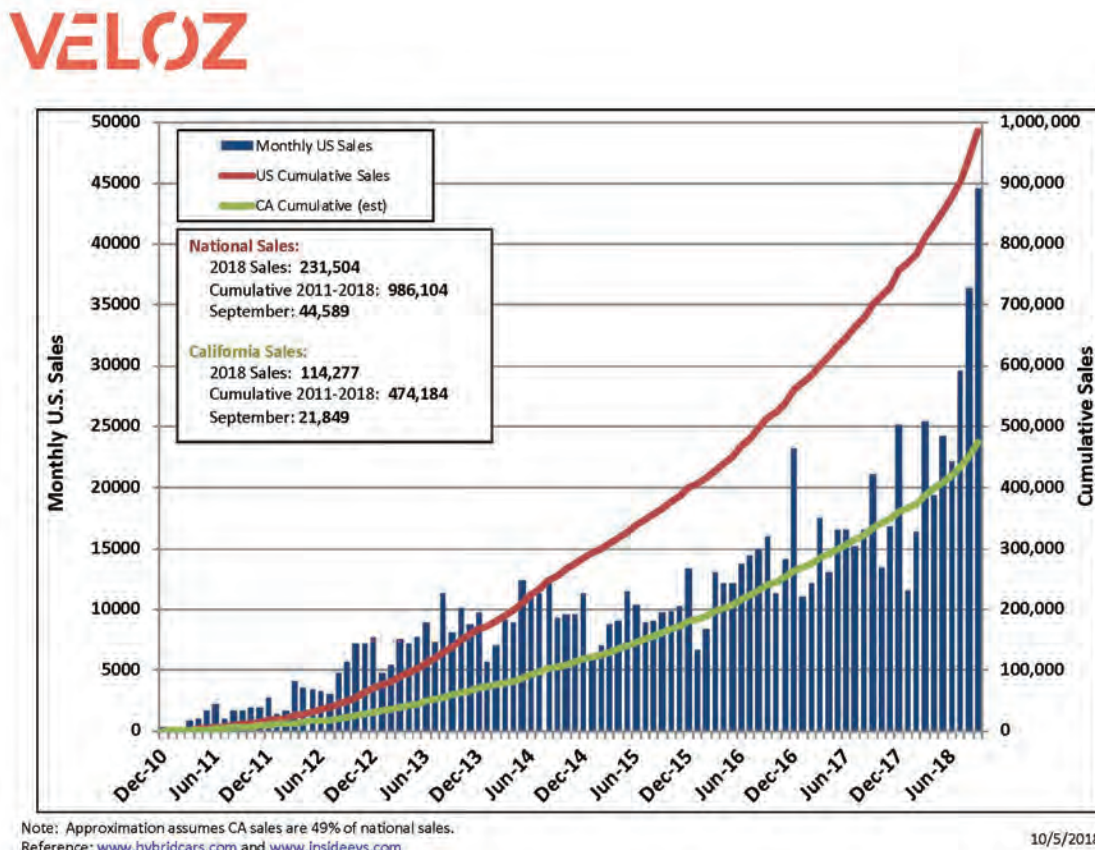
⁴ States' Appx. C-136, *Monthly Plug-in Sales Scorecard*, INSIDE EVs, <https://insideevs.com/monthly-plug-in-sales-scorecard/> (last visited Oct. 24, 2018).

⁵ *Id.*

2021 (387,075) in the Draft Technical Assessment Review published by EPA, NHTSA and CARB in 2016 (“TAR”).⁶ Thus, based on the most recent data, manufacturers are well on their way to beating the level of fleet electrification previously projected by EPA and NHTSA.

As monthly sales increase, more and more electric vehicles are on the roads. Cumulatively, one million electric vehicles have been sold in the United States, approximately 49 percent of which were sold in California.⁷ And, globally, four million electric vehicles are on the road.⁸

Figure 2: Monthly and Cumulative Sales of Plug-In Electric Vehicles Nationwide and in California⁹



⁶ See States’ Appx. C-40, TAR at 4-38.

⁷ Monthly EV Sales, VELOZ (updated Sept. 2018) http://www.veloz.org/wp-content/uploads/2018/10/9_sept_2018_Dashboard_PEV_Sales_veloz-1.pdf.

⁸ States’ Appx. C-125, Cumulative Global EV Sales Hit 4 Million, BLOOMBERG NEW ENERGY FINANCE (Aug. 30, 2018), https://about.bnef.com/blog/cumulative-global-ev-sales-hit-4-million/?utm_source=newsletter&utm_medium=email&utm_campaign=newsletter_axiosgenerat&stream=top-stories.

⁹ Monthly EV Sales, VELOZ (updated Sept. 2018), http://www.veloz.org/wp-content/uploads/2018/10/9_sept_2018_Dashboard_PEV_Sales_veloz-1.pdf.

Expansion of electric vehicle charging infrastructure has accompanied the increasing numbers of ZEVs. In fact, while there were fewer than 5,000 electric charging stations across the country in 2011, there are now more than 60,000 public and private stations.¹⁰

These trends are projected to continue through 2025 and beyond. In fact, projections suggest that electric vehicles may make up 65 percent or more of new United States light-duty vehicles by 2050.¹¹ By 2025, annual United States sales of plug-in electric vehicles are expected to exceed 1.2 million vehicles, resulting in more than 7 million plug-in electric vehicles on the roads.¹² This projection represents about twice the fleet electrification projected for 2025 in the TAR.¹³

Across the country, many States have already taken steps to ensure that the ZEV and charging infrastructure projections are realized. In addition to California, nine Section 177 States have adopted the ZEV mandate.¹⁴ The Governors of nine States have also signed onto the State Zero-Emission Vehicle Programs Memorandum of Understanding, agreeing to “coordinate actions to support and ensure the successful implementation of our Zero-Emission Vehicle programs.”¹⁵ State signatories include California, Connecticut, Maryland, Massachusetts, New York, Oregon, Rhode Island, Vermont, and, most recently, New Jersey. Building on the October 2013 Multi-State Governors’ Memorandum of Understanding, participating states established the Multi-State ZEV Action Plan in 2014,¹⁶ and the ZEV Task Force Multi-State ZEV Action Plan 2018–2021 in 2018.¹⁷

The rest of this Appendix highlights existing ZEV penetration and charging infrastructure and plans to ensure increased penetration through 2025 and beyond in a number of States.

¹⁰ States’ Appx. C-168, *US Alternative Fueling Stations by Fuel Type*, U.S. DEPT. OF ENERGY ALTERNATIVE FUELS DATA CENTER (updated Sept. 2018), www.afdc.energy.gov/data/10332.

¹¹ States’ Appx. C-166, Jeffrey Rissman, *The Future of Electric Vehicles in the U.S., Part 1: 65-75% New Light-Duty Vehicles Sales by 2050*, FORBES (Sept. 14, 2017, 8:15 AM), <https://www.forbes.com/sites/energyinnovation/2017/09/14/the-future-of-electric-vehicles-in-the-u-s-part-1-65-75-new-light-duty-vehicle-sales-by-2050/#dd10df0e2892>.

¹² States’ Appx. C-131, EDISON ELECTRIC INSTITUTE, *Plug-in Electric Vehicle Sales Forecast Through 2025 and the Charging Infrastructure Required* (June 2017), [http://www.edisonfoundation.net/iei/publications/Documents/IEI_EEI%20PEV%20Sales%20and%20Infrastructure%20thru%202025_FINAL%20\(2\).pdf](http://www.edisonfoundation.net/iei/publications/Documents/IEI_EEI%20PEV%20Sales%20and%20Infrastructure%20thru%202025_FINAL%20(2).pdf).

¹³ States’ Appx. C-40, TAR at 4-39.

¹⁴ These Section 177 States are Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island, and Vermont.

¹⁵ See States’ Appx. C-145, *State Zero-Emission Vehicle Programs Memorandum of Understanding* (Oct. 2013).

¹⁶ States’ Appx. C-147, ZEV Program Implementation Task Force, *Multi-State ZEV Action Plan* (May 2014), <https://www.nescaum.org/documents/multi-state-zev-action-plan.pdf>.

¹⁷ States’ Appx. C-146, ZEV Task Force, *Multi-State ZEV Action Plan 2018-2021* (2018), <https://www.nescaum.org/documents/2018-zev-action-plan.pdf>.



October 26, 2018

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Docket ID No. EPA-HQ-OAR-2018-0283

To Whom It May Concern:

Pursuant to the Department of Transportation, National Highway Traffic Safety Administration (DOT or NHTSA) and Environmental Protection Agency's (EPA) proposed "The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks." 83 Fed. Reg. 42817 (Aug. 21, 2018), Tesla submits the following comments. These comments supplement Tesla's comments previously submitted during the Mid-Term Evaluation (MTE¹) process including the comment periods of October 5, 2017, and November 11, 2016.²

Tesla believes the current MY 2017-2025 EPA Greenhouse Gas (GHG) Emissions and NHTSA Corporate Average Fuel Economy (CAFE) light-duty vehicle standards (herein referred to as the LDV Standards) are a bare minimum, can easily be met with only small increases in the efficiency of fossil fuel engines, and should be strengthened.³ As the EPA's January 2017 "Final Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation" (January 2017 MTE) properly concluded, a thorough analysis of existing vehicle technologies "remains consistent with the key conclusions reached in the 2012 FRM: there are multiple compliance paths based chiefly on deployment of advanced gasoline

¹ See generally, EPA, [Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emissions Standards for Model Years 2022-2025](#).

² See, [Tesla Comment Letter \(Oct. 5, 2017\)](#), responding to NHTSA's and EPA's [Request for Comment on Reconsideration of the Final Determination of the Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022-2025 Light-Duty Vehicles; Request for Comment on Model Year 2021 Greenhouse Gas Emissions Standards](#), 82 Fed. Reg. 39551 (Aug. 21, 2017); Tesla also incorporates by reference comments submitted by the National Coalition for Advanced Transportation (NCAT) to this proposal docket.

³ EPA, NHTSA, [2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards](#), 77 Fed. Reg. 62624 (Oct. 15, 2012).

Standards foster more stability and innovation so domestic manufacturers can continue to lead in the burgeoning worldwide EV marketplace. However, the agencies' proposal would reverse this market stability and create an alternative that is inconsistent with the Administration's own manufacturing policy goals of fostering U.S. global leadership in vehicle-related intellectual property, EV technology, and advanced lithium ion battery development.⁴¹

While the Administration's Section 301 Trade Investigation Report identifies the need for policies to confront unfair international competition in EVs and lithium ion batteries as embodied in the "Made in China 2025 Roadmap," NHTSA's and EPA's proposal to decrease the LDV Standards will result in foreign manufacturers gaining a global advantage in these sectors.⁴² China is already leading in EV sales⁴³ and this continues to be driven by strong EV and fuel economy standards (48 mpg by 2020) that surpass those of the existing U.S. standards.⁴⁴ China, like other nations, is embracing strong standards to drive a domestic EV manufacturing ramp up toward 70 percent of EV sales by 2020 being domestically manufactured and 80 percent by 2025. Similarly, in the E.U., emissions standards – equivalent to almost 57 mpg by 2021 – and in South Korea – almost 57 mpg by 2020 – will further incentivize foreign manufacturers to develop new EV offerings and threaten to outpace the U.S. technological lead in this area.⁴⁵

NHTSA's and EPA's proposal to roll back the existing LDV Standards simply creates a competitive advantage for foreign EV manufacturers. In contrast, maintaining and improving the existing LDV Standards would reward U.S. commerce in EV technology and fight against increased pressure on domestic companies to transfer their EV and battery technologies abroad as a means of entering more favorable overseas markets. Stronger domestic LDV Standards will also facilitate maintenance of U.S. manufacturing assets and intellectual property in this country. Simply put, the U.S. should be leading the world in creating a stable and forward-leaning standards environment to catalyze the advancement of domestic EV manufacturing but NHTSA's and EPA's proposal will do the opposite.

IV. Tesla Has Proven Consumer Acceptance and Preference for Electric Vehicles, Thereby Demonstrating the Error in the Proposed Rulemaking's Assumptions

In the April 2018 Final MTE, EPA made no mention of comments submitted by Tesla and, among other unsupported conclusions, the Administrator found that "it would not be practicable to meet the MY 2022–2025 emission standards without significant electrification and other advanced vehicle technologies that lack a requisite level of consumer acceptance."⁴⁶ NHTSA and EPA continue this biased view toward the current state of EV technology by erroneously suggesting that consumers are unwilling to pay for the technology and that EVs have negative net societal benefits compared to conventional vehicles.⁴⁷ The agencies reach this result by manipulating their selection of data to avoid including information about consumer willingness to pay for Tesla vehicles -- the most prominent, successful, and widely deployed EVs. As the NPRM states, "[T]he willingness-to-pay

⁴¹ USTR, [Findings Of The Investigation Into China's Acts, Policies, And Practices Related To Technology Transfer, Intellectual Property, And Innovation Under Section 301 Of The Trade Act Of 1974](#) at 29-32, 139-40.

⁴² USTR, [Findings Of The Investigation Into China's Acts, Policies, And Practices Related To Technology Transfer, Intellectual Property, And Innovation Under Section 301 Of The Trade Act Of 1974](#) ("301 Investigation Report")(March 22, 2018) at 30-33 (New Energy Vehicles), at 142 (lithium ion batteries).

⁴³ See, [EV Volumes.Com](#).

⁴⁴ ICCT, [2017 Global Update Light-Duty Vehicle Greenhouse Gas and Fuel Economy Standards](#) (June 23, 2017) at 11.

⁴⁵ NY Times, [How U.S. Fuel Economy Standards Compare with the Rest of the World's](#) (April 3, 2018); AP, [Climate goals mean Europe will overtake US in electric cars](#) (Oct 2, 2018).

⁴⁶ 83 Fed. Reg. at 16081.

⁴⁷ See, 83 Fed. Reg. 43082-83.

analysis does not consider electric vehicles with no direct ICE counterpart. For example, today's evaluation does not consider Tesla because the Tesla brand has no ICE equivalent, and because the free-market prices for used Tesla vehicles have been difficult (if not impossible) to obtain, primarily due to factory guaranteed resale values."⁴⁸

As described herein, Tesla's performance in the marketplace has shown that NHTSA's and EPA's conclusions are false and that consumers want EVs and increasingly choose them over vehicles in the same vehicle class. And while even the January 2017 MTE determined that "the standards are feasible at reasonable cost, without need for extensive electrification," Tesla has demonstrated that the pace of vehicle electrification and consumer acceptance far surpass even those found in any of NHTSA's and EPA's analyses.⁴⁹ Accordingly, NHTSA and EPA should be increasing the stringency of the LDV Standards, not weakening them.

a. Tesla Has Outperformed All Past EPA/NHTSA Sales Predictions Demonstrating the Current Standards Should Not Be Weakened.

In 2012, EPA and NHTSA stated: "At this time we do not estimate whether the number of people who will choose to purchase EVs at private-market prices will be more or less than the number that auto makers are expected to produce to comply with the standards."⁵⁰ It is now 2018 and the definitive answer is more, indeed much more.

Tesla's growth during the period of 2012 through 2018 under the current LDV Standards shows that past projections of consumer acceptance of EV technology have been repeatedly surpassed. In 2012, the LDV final rule projected Tesla annual sales for MY 2025 at 31,974 vehicles.⁵¹ Subsequently, in the NHTSA, EPA, and CARB 2016 Joint Technical Assessment Report (2016 TAR), Tesla was projected to have a sales volume of 86,636 in MY 2021 and 103,502 in MY 2025.⁵²

In contrast to these projections, in 2017, Tesla sales volume equaled the MY 2025 projections by selling over 103,000 cars.⁵³ At the end of Q3 2018, there were almost 450,000 Tesla vehicle owners around the world.⁵⁴ In Q3 2018 alone, Tesla delivered more than 83,000 vehicles, including almost 56,000 Tesla Model 3s (See below, *Figure 1*).⁵⁵ As recently reported:

To put the Model 3's success in perspective, Tesla sold more Model 3s than GM sold Cadillacs or Buicks -- of any model. The Model 3 also outsold all Honda Acuras and Ford's Lincolns and Tesla sold more Model 3s than Lexus, BMW, Mercedes and Audi sold cars . . .

⁴⁸ 83 Fed. Reg. at 43085.

⁴⁹ See, January 2017 MTE at 3.

⁵⁰ 77 Fed. Reg. at 62918.

⁵¹ EPA, NHTSA, [2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards](#), 77 Fed. Reg. 62624, 62679 (Oct. 15, 2012); See also, EPA, NHTSA, [Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule](#), 75 Fed. Reg. 25324, 25675 (May 7, 2010) (noting that at that time Tesla had less than 1,000 employees and made less than 1,000 vehicles per year).

⁵² EPA, NHTSA, CARB, [Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025](#) (July 2016) at 4-38 (MY 2021 projections); at 4-20 (MY 2025 projections).

⁵³ Tesla, Inc., [S.E.C. Form 10-K](#) (Feb. 22, 2018) at 39.

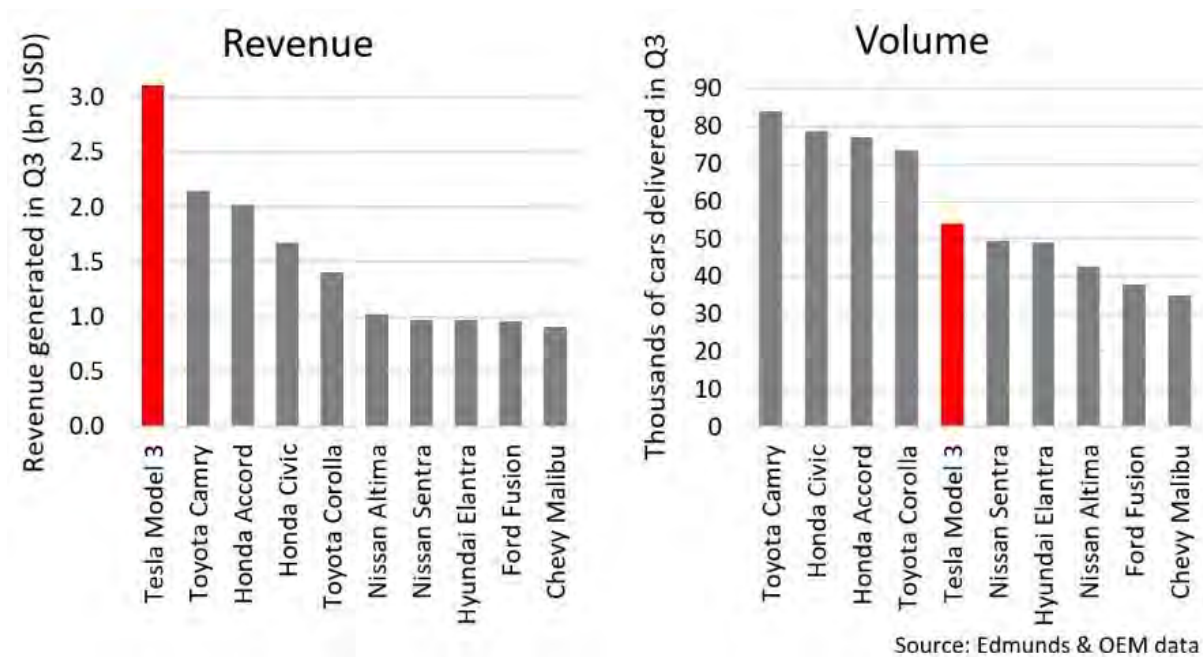
⁵⁴ Tesla, [Tesla Third Quarter 2018 Update](#) at 3.

⁵⁵ Tesla, [Tesla Q3 2018 Vehicle Production and Deliveries](#) (Oct. 2, 2018).

The Model 3 surpassed those established brands even though Tesla doesn't advertise and, in most cases, Tesla has far fewer stores than its competitors' dealership network.⁵⁶

Indeed, Tesla has had 25,913% sales growth over the past 6 years.⁵⁷

Figure 1: U.S. Passenger Car Sales Q3 2018⁵⁸



Furthermore, in real-world contrast to the NPRM's modeling results, the existing EV market sales already surpass NHTSA's and EPA's predicted fleet mix. For each alternative proposal, including the no action alternative, the agencies project a 1% fleet technology penetration level for EV passenger cars through 2029.⁵⁹ While flawed, modeling results such as these reveal that even maintaining the current stringency of standards under-projects the pace and level of electrification presently occurring.⁶⁰ In September 2018, Tesla's U.S. market share alone was over 2% and increasing rapidly.⁶¹ This outperformance (and the compliance flexibility EV sales provide to existing manufacturers) shows that the stringency of existing LDV Standards can be met, at the least, and more appropriately, supports increasing stringency in the standards.

⁵⁶ CNN, [Tesla's secret success story: Model 3 is best-selling luxury car in America](#) (Oct. 9, 2018).

⁵⁷ See, CleanTechnica, [Tesla Crushes Porsche & Jaguar Worldwide](#) (Oct. 12, 2018).

⁵⁸ Tesla, [Tesla Third Quarter 2018 Update](#) at 1.

⁵⁹ See 83 Fed. Reg. at 43267, Table VII-6; See also, 83 Fed. Reg. at 43218-43221, Tables V-1 thru V-4.

⁶⁰ See, CleanTechnica, [Please Stop Saying "EVs Are Only 1% Of Auto Sales In The US"](#) (July 1, 2018) (In the US, EV sales have been hovering in the 1% neighborhood for the last two years, but EV sales in April 2018 were 1.74% of total light vehicle sales and could end up close to 2% by the end of 2018, primarily because of deliveries of the Tesla Model 3. California's EV market share reached a record 7.77% in April and is predicted to reach around 9.5% in December and perhaps 7.5% for the entire year.)

⁶¹ See Statista, [Tesla's estimated U.S. market share from January 2018 to September 2018](#)

In addition to Tesla's market performance, expert and multiple non-biased analyses finds that NHTSA's and EPA's predictions are inaccurate and that electrification of vehicle fleets will occur rapidly. For example, a recent study conducted by Wood Mackenzie and GTM Research found that by 2035 plug-ins could account for 21% of the global car fleet.⁶² Bloomberg New Energy Finance forecasts U.S. 8.5% of sales to be EVs in 2025, and even bearish forecasts from Wards Intelligence finds 2025 EVs sales at 3%.⁶³ Numerous other studies, including one finding U.S. EV sales reaching 65-75% in 2050,⁶⁴ show much more rapid adoption than what NHTSA and EPA predict will occur.⁶⁵

b. Tesla Has Demonstrated Consumers Prefer EV Technology Over Conventional Technology

The NPRM also consistently underestimates consumer acceptance and willingness to pay for EV technology. Consistent with this, NHTSA and EPA assert: "While vehicles can be built with advanced fuel economy improving technology, this does not mean that consumers will buy the new vehicles that might be required to include such technology."⁶⁶ And, similarly, in the April 2018 Final MTE EPA claims:

Since a peak in 2013, electrified light-vehicle (LV) sales have decreased both as a total and as a percentage of all light-vehicle sales. This calls into question EPA assumptions for the 2012 rulemaking and the January 2017 Determination that sales of electrified LVs will be sufficient to support compliance with the MY 2022–2025 standards.⁶⁷

Further, the EPA claims that "EV sales have decreased and when looking at very small numbers, percentage growth may be misleading."⁶⁸

Basing a need to weaken the existing LDV Standards on such assertions is erroneous. The agencies presumably arrived at these conclusions by conflating "electrified sales" to include hybrids and other vehicles, and by ignoring the exponential growth in EV sales; they also ignore Tesla's performance in the overall vehicle marketplace. Tesla's market performance demonstrates that such assertions are misplaced and that consumers increasingly prefer EV technology over the existing conventional technologies. As Bloomberg recently stated about Tesla's Model 3, "First it was America's best-selling electric car. Then it became the best-selling luxury car. Now, against the odds, Tesla Inc.'s Model 3 is becoming one of the best-selling sedans in America, period."⁶⁹ Indeed, Tesla is now the top selling luxury vehicle brand in the USA.⁷⁰ There is simply no basis for the view of the agencies

⁶² InsideEVs, [Study: EVs Could Account For 21% of Global Fleet by 2035](#) (Dec. 28, 2017).

⁶³ Axios Generate, [The past and future of EV and hybrid sales](#) (April 17, 2018).

⁶⁴ See, Forbes, [The Future of Electric Vehicles in the U.S., Part 1: 65%-75% New Light-Duty Vehicle Sales By 2050](#) (Sept 14, 2017) (describing the modeling results of an Energy Innovation analysis).

⁶⁵ See e.g., Bloomberg, [McKerracher: BP's Energy Outlook and the Rising Consensus on EV Adoption](#) (Feb 23, 2018); Vox, [Electric vehicles are gaining momentum, despite Trump](#) (June 28, 2018); Bloomberg, [McKerracher: BP's Energy Outlook and the Rising Consensus on EV Adoption](#) (Feb 23, 2018); [Morgan Stanley is becoming more bullish with their EV-related estimates and now the research group concludes that EVs will reach price parity with ICE cars by 2025](#) (Sept 19, 2017).

⁶⁶ 83 Fed. Reg. at 43226.

⁶⁷ 83 Fed. Reg. at 16079.

⁶⁸ 83 Fed. Reg. at 16083.

⁶⁹ Bloomberg, [Tesla's Model 3 Is Becoming One of America's Best-Selling Sedans](#) (Oct. 3, 2018). See also, CleanTechnica, [Tesla Model 3 = 4th Best Selling Car in USA* \(Maybe\)](#) (Oct. 3, 2018).

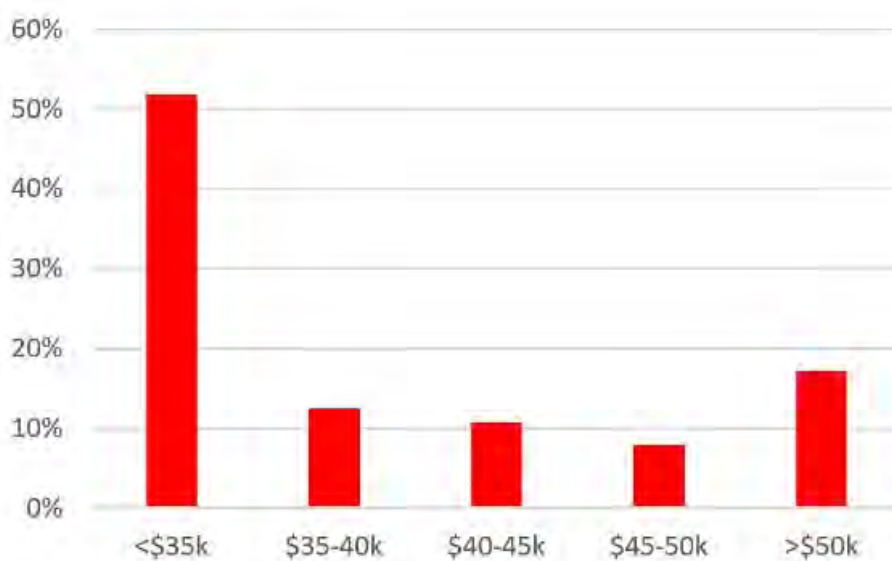
⁷⁰ CleanTechnica, [Yep, Tesla Is Gobbling USA Luxury Car Market — 8 Charts & Graphs](#) (Oct 3, 2018).

that, “There is a trade-off between fuel economy and other attributes that consumers value, such as vehicle performance”⁷¹

Increasingly, marketplace data show that NHTSA’s and EPA’s projections are wrong, outdated, and do not support any lowering of the existing LDV Standards. In July 2018, the Tesla Model 3 not only had the #1 market share position in its segment in the U.S., it outsold all other mid-sized premium sedans combined, accounting for 52% of the segment overall.⁷² Indeed, the Tesla Model 3 is now the top selling American car in the country.⁷³ It is also the top selling car in terms of revenue.⁷⁴

While NHTSA and EPA asserts that low priced fossil fuel will dampen consumer purchasing of electrification technologies, Tesla internal sales data reveals the opposite - consumers are willing to pay more for advanced vehicles and the advanced performance of EV technology regardless of fuel price fluctuations.⁷⁵ The top 10 vehicles traded in for a Tesla Model 3 include the Toyota Prius (#1), Honda Accord (#4), Honda Civic (#5), and the Toyota Camry (#7) and the median value of all trade-ins is \$8,600. As shown in *Figure 2*, this data reveals that U.S. consumers are increasingly willing to trade in some of the country’s moderately-priced, best-selling sedan types for the increased performance of EVs and directly contradicts projections used to support the NPRM.⁷⁶

Figure 2: Original Purchase Price of Tesla Model 3 Trade-Ins⁷⁷



⁷¹ 83 Fed. Reg. at 43089.

⁷² See, CNN, [Tesla's secret success story: Model 3 is best-selling luxury car in America](#) (Oct. 4, 2018).

⁷³ Inverse, [Elon Musk's Tesla Model 3 Sales Stats Show It's Crushing the Competition](#) (Oct. 9, 2018);

CleanTechnica, [Tesla Model 3 Is #1 Top Selling American Car In USA](#) (Oct. 8, 2018); See also, Bloomberg, [Tesla's Model 3 Is Becoming One of America's Best-Selling Sedans](#) (Oct. 3, 2018).

⁷⁴ CleanTechnica, [Tesla Model 3 = #1 Best Selling Car In The US \(In Revenue\)](#) (Sept. 9, 2018).

⁷⁵ 83 Fed. Reg. at 43222 (asserting “even while some consumers may be willing to pay between \$2,000 and \$3,000 more for vehicles with electrified technologies, that incremental willingness-to-pay falls well short of the additional costs projected for HEVs, PHEVs, and EVs. This trend may well extend beyond electrification technologies to other technologies.”).

⁷⁶ See 83 Fed. Reg. at 43084, Table II-37 (suggesting a consumer’s willingness to pay just under a \$3,000 premium for electrification technology).

⁷⁷ Tesla, [Tesla Third Quarter 2018 Update](#) at 2.

c. Consumers Want the Superior Performance and Other Benefits of EVs

In the NPRM, NHTSA and EPA suggest that it is unlikely that consumer preferences are going to change dramatically in the foreseeable future and that manufacturers will not be able to improve EV sales “unless consumer preferences change or fuel prices rise significantly, either of which seem unlikely.”⁷⁸ The agencies premise these conclusions on the basis that many existing technologies can be used to improve other vehicle attributes, such as “zero to 60” performance, towing, and hauling, either instead of or in addition to improving fuel economy and reducing CO2 emissions.⁷⁹ NHTSA and EPA continue by indicating that “real world” decisions result in manufacturers employing fewer than the full amount fuel-savings/emissions reducing benefits.⁸⁰ Such conclusions are again contradicted by Tesla’s sales.

Not only do Tesla vehicles provide significant efficiency gains compared to conventional vehicles, Tesla manufacturers vehicles that do not sacrifice performance, and that allow consumers to accrue other significant societal benefits. Indeed, consumers and automotive analysts have repeatedly lauded Tesla vehicles for their superior performance. Tesla manufactures zero emission vehicles that consumers purchase for outstanding vehicle performance and all of its vehicles – Model 3⁸¹, Model S⁸², and Model X⁸³ – have repeatedly earned outstanding performance reviews. These independent reviews demonstrate the intense consumer interest in deploying the best high-performance emissions reducing technologies.⁸⁴

The intense consumer interest also manifests itself in recent consumer surveys that find that “the number of Americans interested in an electric vehicle approaches the number planning to purchase a pickup truck,”⁸⁵ and interest in EVs has rapidly increased to the point that “20 percent or 50 million Americans will likely go electric for their next vehicle purchase.”⁸⁶ Indeed, the U.S. government itself recognizes a number of other consumer benefits from EV technology including that “plug-in electric vehicles can help increase energy security, improve fuel economy, lower fuel costs, and reduce emissions.”⁸⁷

d. NHTSA’s and EPA’s Assertion of Net Negative Consumer Welfare Benefits of EVs Is Incorrect

In addressing the costs and benefits of different vehicle technologies in the NPRM, NHTSA and EPA list a number of topics assessed in its modeling.⁸⁸ Contrary to the agencies’ overall net benefits

⁷⁸ 83 Fed. Reg. at 43127.

⁷⁹ 83 Fed. Reg. at 42991.

⁸⁰ Id.

⁸¹ See e.g., Wall Street Journal, [First Test Drive of the Tesla Model 3 Performance: A Thrilling, Modern Marvel](#) (Oct. 4, 2018); Car & Driver, [The Tesla Model 3 Performance Skips Ludicrous Acceleration for Ridiculous Cornering](#) (Sept. 2018); Tech Crunch, [The Tesla Model 3 is a love letter to the road](#) (March 2018); Business Insider, [I drove a \\$57,500 Tesla Model 3 for a week to see if it's practical for everyday driving — here's the verdict](#) (Oct 4, 2018).

⁸² See e.g., The Verge, [Tesla Model S P100D Review: The Ultimate Status Symbol of California Cool](#) (Sept. 8, 2017); GQ, [I Drove a Tesla on Autopilot and Now I'm Ready to Drive to Space](#) (May 18, 2018).

⁸³ See e.g., Men’s Health, [Tesla's Model X Is Proof Electric Vehicles Are Worth the Growing Pains](#) (April 16, 2018); Road & Track, [Tesla Model X P100D: The Nor'easter Test](#) (Mar. 20, 2018).

⁸⁴ See, Consumer Reports, [Car Brands Ranked by Owner Satisfaction](#) (Dec. 21, 2017) (Car owners ranking Tesla as the top brand satisfying consumers).

⁸⁵ AAA, [Consumer Appetite for Electric Vehicles Rivals Pickups](#) (April 18, 2017);

⁸⁶ AAA, [1-in-5 U.S. Drivers Want an Electric Vehicle](#) (May 8, 2018).

⁸⁷ U.S. Department of Energy, [Electric Vehicle Benefits and Considerations](#)

⁸⁸ 83 Fed. Reg. at 43189, Table II-92.

requirement that the agency regulate those air pollutants in its motor vehicle standards.¹⁶² Under Section 209 of the CAA, 42 U.S.C. § 7521(b), California received waivers of preemption to enact state standards for GHGs.¹⁶³ In an effort to forge one National Program, the Federal Government reached a landmark deal with automakers and with California, in which California agreed to deem compliance with federal motor vehicle emissions standards to be in compliance with its LEV III GHG Standards. Based in large part on this national car “deal,” and California’s waiver authority, EPA and NHTSA jointly promulgated the first version of the federal GHG emissions standards at issue today.

The NPRM ignores EPA’s obligation to set appropriate GHG standards, and seeks to undermine the legal and policy basis for California’s LEV III GHG Standards waiver. The NPRM upsets settled reliance interests, particularly for automobile manufacturers whose time- and resource-intensive research and development, engineering, and production ramps require regulatory certainty and lead time. For the reasons articulated below, it is contrary to the law.

b. EPA Does Not Have Legal Authority to Revoke California’s Waiver

The CAA does not confer any authority on EPA to revoke an already-granted waiver. *See* 42 U.S.C. § 7543. Yet EPA now proposes to revoke California’s long-standing waivers to enact and enforce GHG emissions standards.

EPA acknowledges in its NPRM that the CAA provides no express authority to revoke an existing waiver; it argues, instead, that the authority to withdraw a waiver is “implicit.”¹⁶⁴ Its argument relies on superseded legislative history, which suggests that the EPA Administrator has “the right . . . to withdraw the waiver at any time [if] after notice and an opportunity for public hearing he finds that the State of California no longer complies with the conditions of that waiver,” S. Rep. 90-403, at 34 (1967). EPA’s reliance on this lone statement is misplaced for several reasons. The legislative history cannot overcome the textual omission of revocation authority within the text of the statute, because courts do not “allow[] ambiguous legislative history to muddy clear statutory language.” *Milner v. Dep’t of Navy*, 562 U.S. 562, 572 (2011). Further, the 1967 statement must be viewed in the context of later amendments, which specifically sought to significantly “broaden and strengthen California’s authority to prescribe and enforce separate new motor vehicle emissions standards,” and maximize California’s regulatory authority and flexibility in the motor vehicle realm, casting significant doubt on whether the 1967 statement remains valid. H.R. Rep. No. 95-294, at *23, 233 (Conf. Rep.) (1977). Finally, even taking the 1967 statement at face value, it is on its own terms limited to situations where California “no longer complies with the conditions” of an existing waiver. EPA does not identify any conditions imposed in 2009 or 2013 that California has violated.

Neither does EPA have *inherent* authority to revoke the California waiver.¹⁶⁵ An agency is “a creature of statute” and has no “constitutional or common law existence or authority, but only those authorities conferred on it by Congress.” *Michigan v. EPA*, 268 F.3d 1075, 1081 (D.C. Cir. 2001). Congress has not conferred such authority on EPA. Congress’s decision to not provide such reconsideration authority is logical: any reconsideration here would impermissibly injure reliance interests, including those represented by manufacturers such as Tesla. *See, e.g., Nat’l Ass’n of Trailer Owners, Inc. v. Day*, 299 F.3d 137, 139-40 (D.C. Cir. 1962) (reconsideration authority “must be exercised both within a reasonable time after the issuance of a final departmental decision and

¹⁶² 74 Fed. Reg. 66496 (Dec. 15, 2009).

¹⁶³ 74 Fed. Reg. 32744 (July 8, 2009); 78 Fed. Reg. 2112 (Jan. 9, 2013).

¹⁶⁴ 83 Fed. Reg. at 43242.

¹⁶⁵ *Id.*

Comments of the National Coalition for Advanced Transportation**On the U.S. Environmental Protection Agency's and National Highway Traffic Safety Administration's Notice of Proposed Rulemaking: The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks****83 Fed. Reg. 42986****Docket Nos. NHTSA-2018-0067, EPA-HQ-OAR-2018-0283, NHTSA-2017-0069****October 26, 2018****Submitted via Regulations.gov****I. INTRODUCTION AND EXECUTIVE SUMMARY**

The National Coalition for Advanced Transportation (NCAT or Coalition) submits these comments in response to the Environmental Protection Agency's (EPA) and National Highway Traffic Safety Administration's (NHTSA) Notice of Proposed Rulemaking entitled "The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks," Docket Nos. NHTSA-2018-0067 and EPA-HQ-OAR-2018-0283, 83 Fed. Reg. 42986 (August 24, 2018) (NPRM). In addition, NCAT submits these comments on the Draft Environmental Impact Statement (DEIS) for the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021–2026 Passenger Cars and Light Trucks, Docket No. NHTSA-2017-0069.

NCAT is a coalition of companies and non-profit organizations that support electric vehicle (EV) and other advanced transportation technologies and related infrastructure.¹ NCAT's members include business leaders in auto manufacturing; electricity generation, transmission, storage and distribution; and manufacturing, deployment and operation of electric vehicle supply equipment—as well as non-profit organizations that advocate for EV owners and consumers and for pragmatic policy solutions to energy and environmental challenges.

Electric and other advanced vehicles and related technologies and infrastructure provide major economic and energy security benefits, and U.S. leadership in this area is critical to our economic health, global competitiveness and environmental quality. NCAT supports government initiatives and regulatory programs that ensure that these critical investments continue and electric and that other clean vehicle technologies and infrastructure can compete in the marketplace. The Coalition recognizes the critical role that States play in adopting and implementing vehicle standards that support advanced technologies, and supports an approach

¹ These comments represent an integrated package that reconciles individual member perspectives that may differ on specific issues; accordingly, no particular position should be attributed to any individual NCAT member.

that provides regulatory certainty and stable, long-term signals to guide investment by many different stakeholders.

NCAT has serious concerns regarding the NPRM, which would freeze vehicle standards at 2020 levels through 2026 and seeks to preempt California and other states' greenhouse gas (GHG) and zero emission vehicle (ZEV) standards. NCAT strongly opposes any action that would undermine state regulatory authority, which is critical to protecting public health and spurring technology innovation. With regard to the federal corporate average fuel economy (CAFE) and Clean Air Act (CAA) greenhouse gas (GHG) standards, the proposal is based on flawed modeling and analysis and contrary to law. The rulemaking record reveals that NHTSA was almost solely responsible for the analysis on which the proposal is based, that EPA's expert career staff and managers raised fundamental objections to this analysis, and that these concerns were not addressed. The resulting proposal would have serious adverse effects on U.S. global competitiveness and jobs, energy security, public health and the environment, and would disrupt long-term investment signals on which many U.S. companies, including NCAT's members, rely.

NCAT urges the agencies to adopt an alternative approach—one that would provide a “win-win” for the American public, auto manufacturers, public health and the environment. NCAT reiterates its strong support for an “Advanced Technologies Compliance Flexibilities” approach. This option would preserve state authority and maintain the top-line targets of the existing GHG standards, while providing manufacturers with additional compliance flexibilities focused on promoting the development and deployment of electric and other advanced vehicle technologies. CAFE standards would be harmonized accordingly, consistent with the Energy Policy and Conservation Act's (EPCA) distinct legal requirements. Such an approach—which is within the scope of the agencies' proposal—would address manufacturers' near-term compliance concerns, largely preserve the overall benefits of the program, and prepare the foundation for further progress in fuel savings and GHG reductions in the years beyond 2025.

Given the volume and complexity of the NPRM, the DEIS, and the supporting record, and the agencies' refusal of NCAT's and other stakeholders' requests to meaningfully extend the comment period, these comments focus on the most significant issues in the NPRM. NCAT's key comments, set forth in greater detail below, are as follows:

1. The agencies should adopt the Advanced Technologies Compliance Flexibility Approach, as described above. (Section II)
2. The NPRM's negative statements regarding EVs—specifically with regard to costs, consumer acceptance, and issues related to charging infrastructure and grid management—are misplaced and should be corrected. The demand for EVs is growing dramatically. Manufacturers are investing tens of billions of dollars and offering dozens of new vehicle models, with significantly expanded range, across vehicle types. EV costs are falling rapidly and many analysts project that they will reach parity with conventional vehicle cost by 2025. Consumer acceptance and demand are growing accordingly. In addition, utilities and others are making substantial investments in charging infrastructure and electric grid upgrades, and increased EV usage will substantially benefit grid operation through increased use of fixed assets, ultimately benefitting all utility customers. (Section III)

Despite these advances, the NPRM and Preliminary Regulatory Impact Analysis (PRIA) evidence a consistent negative view of EVs, especially with regard to technology costs and consumer acceptance and interactions between EVs, charging infrastructure, and operation of the electric grid. In general, the agencies fail to recognize the dynamic growth of the EV market, the benefits of increased EV deployment, declining EV costs, and the degree to which auto manufacturers, consumers, and global markets are embracing EVs as the transportation technology of both today and the future. NCAT provides the following information regarding EVs and electric infrastructure to correct the record, and asks the agencies to adjust their analysis accordingly.

A. The EV Market Has Grown and Will Continue to Grow

1. EV Demand and Sales Are Growing Dramatically

The PRIA downplays the role of EVs and states that EVs are only a small percentage of the light-duty fleet. PRIA at 366. However, sales of EVs in the U.S. have continued to grow at a high rate, and demand for EVs is projected to increase substantially over the MY 2021-2026 period and more so into the future. As of October 2018, one million plug-in electric cars have been sold cumulatively in the U.S.³ As of the end of September 2018, over 234,000 electric vehicles have been sold during this calendar year, an amount which already exceeds total U.S. EV sales of approximately 200,000 in 2017.⁴ EV sales are up from 18,000 vehicles in 2011, constituting a year-over-year growth rate of 49% from 2011 to 2017.⁵ As a recent example, in the third quarter of 2018, Tesla's Model 3 was the best-selling car in the US in terms of revenue and the 5th best-selling car in terms of volume.⁶ As Bloomberg recently stated about Tesla's Model 3: "First it was America's best-selling electric car. Then it became the best-selling luxury car. Now, against the odds, Tesla Inc.'s Model 3 is becoming one of the best-selling sedans in America, period."⁷

Projected U.S. sales of EVs vary widely, but virtually all market analysts predict substantial increases in consumer demand. The U.S. Energy Information Administration (EIA) projects that sales of battery electric vehicles and PHEVs will reach 1.1 million in 2025.⁸ Under the EIA's estimates, combined sales of new electric, PHEVs, and hybrid vehicles grow in market

³ Mark Kane, "Plug-In Electric Cars Sales In U.S. Surpass 1 Million," <https://insideevs.com/1-million-electric-cars-sold-us/> (Oct. 6, 2018); Paul Ruiz, "U.S. Reaches 1 Million Electric Vehicle Sales" (Oct. 11, 2018), <http://energyfuse.org/u-s-reaches-1-million-electric-vehicle-sales/>.

⁴ Loveday, "September 2018 Plug-In Electric Vehicle Sales Report Card," <https://insideevs.com/september-2018-plug-in-electric-vehicle-sales-report-card/> (Oct. 5, 2018).

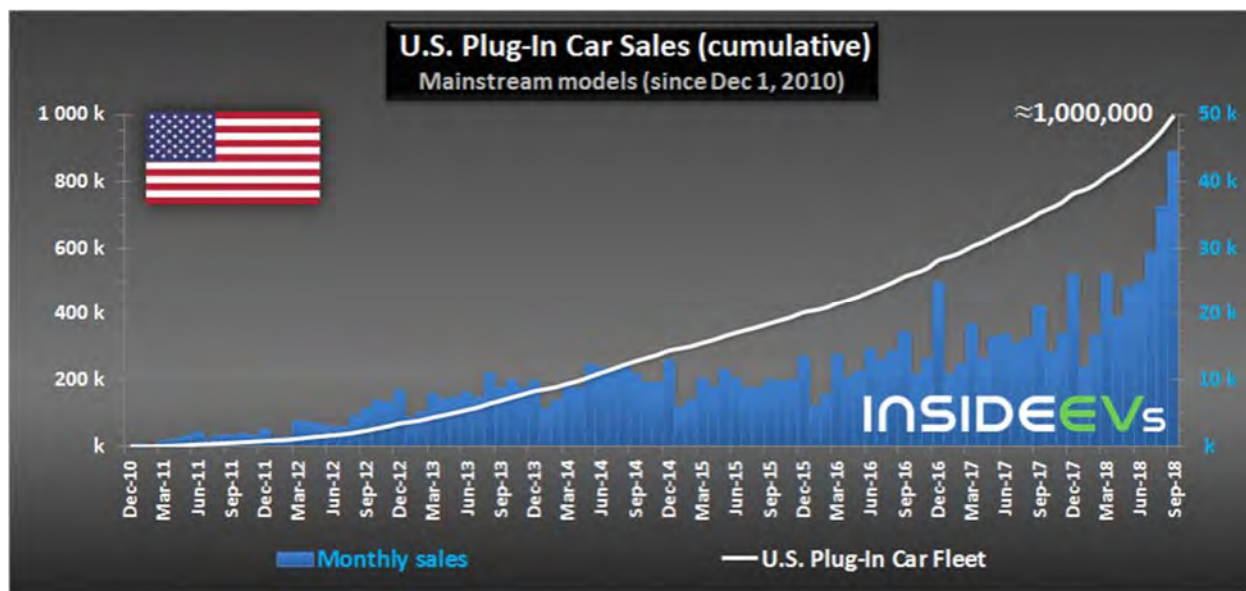
⁵ Argonne National Laboratory, Impacts of Electrification of Light-Duty Vehicles in the U.S., 2010-2017 (Jan. 2018) at 3, available at <https://publications.anl.gov/anlpubs/2018/01/141595.pdf>.

⁶ Tesla, "Tesla Third Quarter 2018 Update" (Oct. 2018), available at <http://ir.tesla.com/static-files/725970e6-eda5-47ab-96e1-422d4045f799>.

⁷ Bloomberg, "Tesla's Model 3 Is Becoming One of America's Best-Selling Sedans" (Oct. 3, 2018), <https://www.bloomberg.com/news/articles/2018-10-03/tesla-s-model-3-is-becoming-one-of-america-s-best-selling-sedans>.

⁸ U.S. EIA, "Annual Energy Outlook 2018 with projections to 2050" (Feb. 6, 2018) at 116, available at <https://www.eia.gov/outlooks/aeo/pdf/AEO2018.pdf>.

share from 4% in 2017 to 19% in 2050 in the EIA’s Reference case.⁹ A recent study by the Edison Electric Institute and Institute for Electric Innovation projects that in the U.S. annual sales of plug-in electric vehicles will exceed 1.2 million vehicles in 2025 and the total number of plug-in electric vehicles on the road will reach 7 million by 2025.¹⁰ A July 2017 Bloomberg New Energy Finance global study “expect[s] an inflection point in adoption between 2025 and 2030, as EVs become economical on an unsubsidized total cost of ownership basis across mass-market vehicle classes.”¹¹ A study by Energy Innovation projects rapid growth in the EV market share with EVs projected to make up 65 percent of new U.S. light-duty vehicle sales by 2050.¹²



Source: InsideEVs¹³

2. Manufacturers Are Investing and View EVs As the Future

Several major global manufacturers have announced plans to scale up their offerings of EVs significantly in the coming years, including vehicles across a variety of price levels and with substantially increased range.

⁹ *Id.* at 114.

¹⁰ Adam Cooper & Kellen Schefter, Edison Electric Institute and the Institute for Electric Innovation, “Plug-in Electric Vehicle Sales Forecast Through 2025 and the Charging Infrastructure Required” (June 2017) at 1, [http://www.edisonfoundation.net/iei/publications/Documents/IEI_EEI%20PEV%20Sales%20and%20Infrastructure%20thru%202025_FINAL%20\(2\).pdf](http://www.edisonfoundation.net/iei/publications/Documents/IEI_EEI%20PEV%20Sales%20and%20Infrastructure%20thru%202025_FINAL%20(2).pdf).

¹¹ Bloomberg New Energy Finance, “Electric Vehicle Outlook 2017 – Executive Summary” (July 2017) at 2, available at https://data.bloomberglp.com/bnef/sites/14/2017/07/BNEF_EVO_2017_ExecutiveSummary.pdf.

¹² Jeffery Rissman, Energy Innovation, “The Future of Electric Vehicles in the U.S.” (Sept. 2017) at 3, available at http://energyinnovation.org/wp-content/uploads/2017/09/Future-of-EVs-Research-Note_FINAL.pdf?utm_source=newsletter&utm_medium=email&utm_campaign=newsletter_axiosgenerate&stream=politics.

¹³ Kane, “Plug-In Electric Cars Sales In U.S. Surpass 1 Million” (Oct. 6, 2018), <https://insideevs.com/1-million-electric-cars-sold-us/>.

- Earlier this year Ford announced its plan to spend \$11 billion bringing 40 electrified vehicles to market by 2022, which is an increase of \$4.5 billion as compared to Ford's statements in late 2015 regarding the amount the company would invest through the end of the decade.¹⁴
- Fiat-Chrysler plans to launch over 30 EVs and hybrids by 2022.¹⁵
- Toyota plans by around 2025 to offer every model in the Toyota and Lexus line-up either as a dedicated electrified model or have an electrified option. "By around 2030, Toyota aims to have sales of more than 5.5 million electrified vehicles, including more than 1 million zero-emission vehicles."¹⁶
- Mercedes Benz plans to have an electric or hybrid version for virtually all of their cars by 2022 (over 50 model variants) and to make \$1 billion in investments in its Alabama factory as a result.¹⁷
- In October 2017, GM announced that in the next 18 months it will introduce two new all-electric vehicles, which will be the first of at least 20 new all-electric vehicles that will launch by 2023. GM's Executive Vice President of Product Development, Purchasing and Supply Chain stated in connection with this announcement that "General Motors believes in an all-electric future."¹⁸
- Volkswagen has stated its intention to introduce two more all-electric vehicles to the U.S., in addition to several others planned for the U.S. market in the next few years,¹⁹ and to build electric versions of all 300 of its brands' models. Volkswagen intends to spend 20 billion euros (\$24 billion) by 2030 to roll out electric versions of all 300 models, and spend another 50 billion euros (\$60 billion) to buy the batteries for these vehicles.²⁰

¹⁴ Keith Naughton et al., "Ford Goes 'All In' on Electric Cars" (Jan. 14, 2018), <https://www.bloomberg.com/news/articles/2018-01-14/ford-doubling-electric-vehicle-spending-to-11-billion-by-2022>.

¹⁵ Jon Fingas, "Fiat Chrysler will launch over 30 EVs and hybrids by 2022" (June 2, 2018), <https://www.engadget.com/2018/06/02/fiat-chrysler-launching-over-30-electric-and-hybrid-cars-by-2022/>.

¹⁶ Toyota, "Toyota Aims for Sales of More Than 5.5 Million Electrified Vehicles Including 1 Million Zero-Emission Vehicles per Year by 2030" (Dec. 18, 2017), <https://newsroom.toyota.co.jp/en/corporate/20353243.html>.

¹⁷ Stephen Edelstein, "Mercedes-Benz Investing \$1 Billion in Alabama Plant Upgrades to Build Electric SUVs" (Sept. 22, 2017), <http://www.thedrive.com/tech/14554/mercedes-benz-investing-1-billion-in-alabama-plant-upgrades-to-build-electric-suvs?iid=sr-link8>.

¹⁸ GM Corporate Newsroom, "GM Outlines All-Electric Path to Zero Emissions" (Oct. 2, 2017), <http://media.gm.com/media/us/en/gm/news.detail.html/content/Pages/news/us/en/2017/oct/1002-electric.html>. See also Bill Vlasic & Neal E. Boudette, "G.M. and Ford Lay Out Plans to Expand Electric Models," *New York Times* (Oct. 2, 2017), <https://www.nytimes.com/2017/10/02/business/general-motors-electric-cars.html>.

¹⁹ Fred Lambert, "VW confirms two new upcoming electric cars for US market: I.D. Lounge and I.D. AEROe" (June 26, 2017), <https://electrek.co/2017/06/26/vw-electric-cars-i-d-lounge-and-i-d-aeroe/>.

²⁰ Christoph Rauwald, "VW to Build Electric Versions of All 300 Models by 2030" (Sept. 11, 2017), <https://www.bloomberg.com/amp/news/articles/2017-09-11/vw-ceo-vows-to-offer-electric-version-of-all-300-models-by-2030>.

- Volvo recently announced that it will incorporate electric technology into *all* its vehicle model offerings by 2019.²¹
- BMW stated that 12 all-electric cars and 13 hybrids will be on the market by 2025, and Jaguar Land Rover has said that its entire fleet of new vehicles will be electric or hybrid-electric starting in 2020.²²

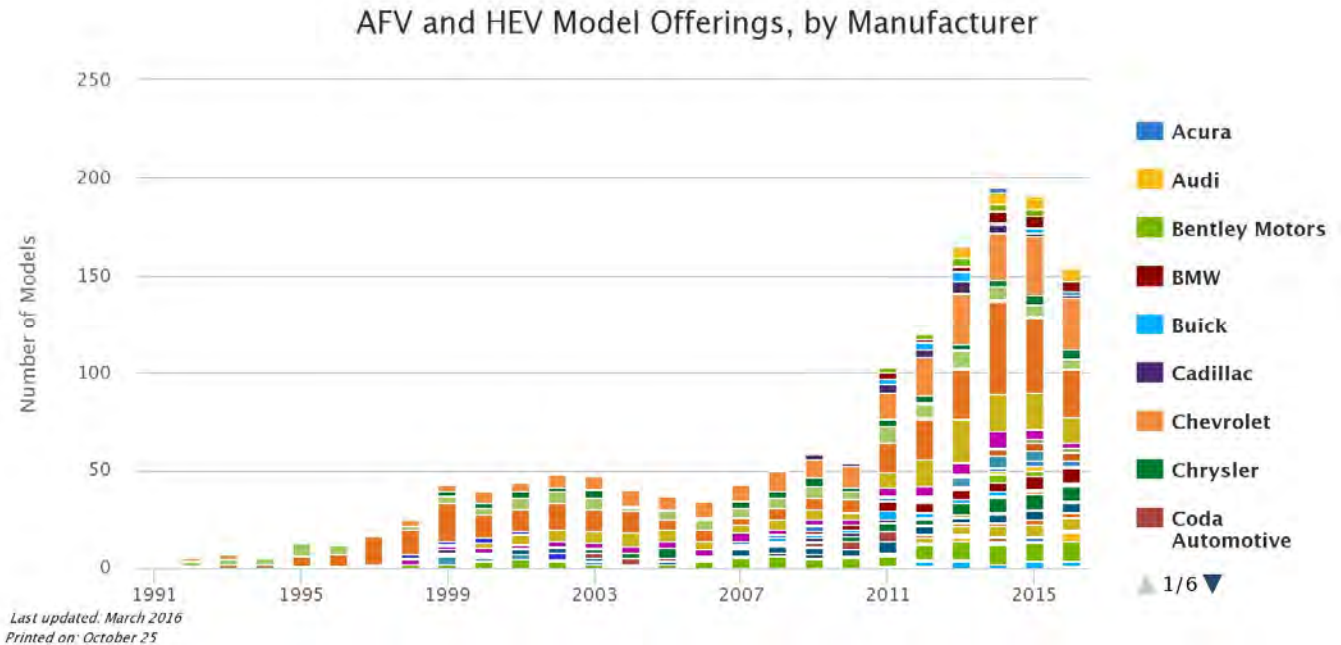
3. Expanding Number, Type and Range of Vehicles

Manufacturers are offering more types of EVs, with increasing range, making EVs increasingly attractive to consumers. In 2018, there are 23 electric vehicle options and 34 plug-in hybrid electric vehicle options available according to FuelEconomy.gov.²³ The U.S. Department of Energy's (DOE) Alternative Fuels Data Center also compiles the makes and models of all alternative fuel vehicles. This data from the Alternative Fuels Data Center was last updated in March 2016. Since that time, manufacturers have continued to expand the number of makes and models of alternative fueled vehicles on the market.

²¹ Jack Ewing, "Volvo, Betting on Electric, Moves to Phase Out Conventional Engines," *NY Times* (July 5, 2017), <https://www.nytimes.com/2017/07/05/business/energy-environment/volvo-hybrid-electric-car.html>.

²² Russ Mitchell, "BMW plans 25 all-electric and hybrid vehicles by 2025; Jaguar shows off electric E-type" (Sept. 7, 2017), <http://www.latimes.com/business/autos/la-fi-hy-bmw-jaguar-ev-20170907-story.html>. See also Adam Vaughan, "Jaguar Land Rover to make only electric or hybrid cars from 2020" (Sept. 7, 2017), <https://www.theguardian.com/business/2017/sep/07/jaguar-land-rover-electric-hybrid-cars-2020>.

²³ U.S. DOE & EPA, "Hybrids, Diesels, and Alternative Fuel Cars," <https://www.fueleconomy.gov/feg/alternatives.shtml> (last visited Oct. 24, 2018). For a few vehicle models there are several different options listed for a particular model.



Source: Alternative Fuels Data Center²⁴

Most new battery electric vehicles have ranges of about 100 miles on a fully charged battery, and an increasing number of models have ranges over 200 miles. Ninety percent of all household vehicle trips in the U.S. cover less than 100 miles, according to the U.S. Department of Transportation.²⁵ A recent report by McKinsey & Company found a significant increase in the estimated range for EVs since 2013: “For example, base models of the Nissan Leaf and Tesla Model S grew from 75 and 208 miles per charge in 2013 to about 107 and up to 249 miles in 2017, respectively.”²⁶

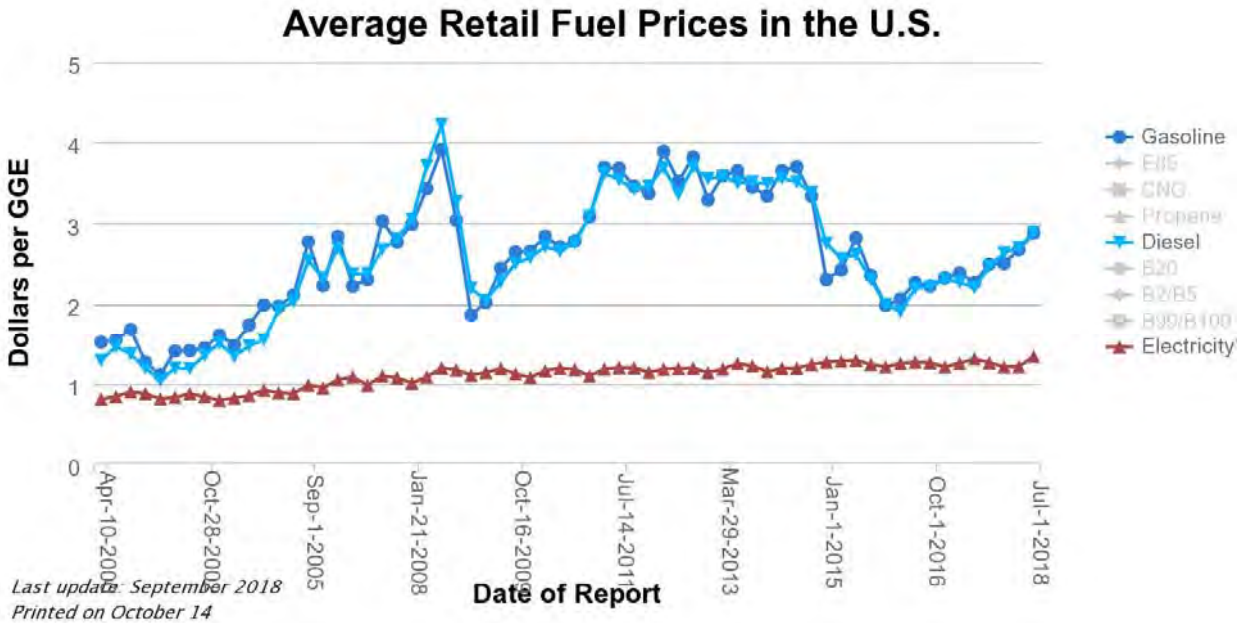
4. Costs Are Declining Rapidly

Electric and other advanced technology vehicles save consumers money relative to conventional vehicles—putting more money in the pockets of families and individuals that choose such vehicles. Electricity is much cheaper than gasoline or diesel as a vehicle fuel, as shown in the figure below from the U.S. DOE Alternative Fuels Data Center.

²⁴ U.S. DOE Alternative Fuels Data Center, “AFV and HEV Model Offerings, by Manufacturer” (Mar. 2016), <https://www.afdc.energy.gov/data/10304>.

²⁵ U.S. DOE, “Electric-Drive Vehicles” (Sept. 2017) at 2, available at https://www.afdc.energy.gov/uploads/publication/electric_vehicles.pdf.

²⁶ McKinsey & Company, “Electrifying insights: How automakers can drive electrified vehicle sales and profitability” (Jan. 2017) at 11, available at <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/electrifying-insights-how-automakers-can-drive-electrified-vehicle-sales-and-profitability> (citing Department of Energy (www.FuelEconomy.gov), EPA).



Source: U.S. DOE, Alternative Fuels Data Center²⁷ (This chart shows average monthly retail fuel prices in the United States from 2000 to 2018 in dollars per gasoline-gallon equivalents (GGE).)

U.S. DOE estimates that electricity costs for a typical battery electric vehicle range 2¢–4¢ per mile, as compared to conventional sedans for which the costs range about 10¢–15¢ per mile. For PHEVs, electricity costs range about 2¢–4¢ per mile and when running on gasoline, fuel costs range about 5¢–10¢ per mile.²⁸ Electric-drive vehicle owners can expect to save thousands of dollars in fuel costs over the life of the vehicle.²⁹ Furthermore, the price of electricity is less volatile than the price of gasoline and diesel fuels, so consumers can more reasonably forecast fuel costs over longer periods of time. Of additional benefit to consumers, battery electric vehicles typically require less maintenance than conventional vehicles and have far fewer moving parts and fewer fluids to change.³⁰ EVs typically had 20-40 percent lower five-year maintenance costs, based on a comparison of five EVs and comparable internal combustion engine counterparts from the same brand.³¹ All in all, consumer savings on fuel can outweigh the additional upfront costs of EVs. For example, a recent study found that compared to a similar gasoline-powered vehicle, the average EV will save its owner more than \$3,500 over the

²⁷ U.S. DOE Alternative Fuel Data Center, “Fuel Prices” <https://www.afdc.energy.gov/fuels/prices.html> (last updated Sept. 26, 2018) (*Electric prices are reduced by a factor of 3.4 because electric motors are 3.4 times more efficient than internal combustion engines).

²⁸ U.S. DOE, “Electric-Drive Vehicles” (Sept. 2017) at 4, available at https://www.afdc.energy.gov/uploads/publication/electric_vehicles.pdf.

²⁹ *Id.* at 3.

³⁰ *Id.* at 4.

³¹ McKinsey & Company, “Electrifying insights: How automakers can drive electrified vehicle sales and profitability” (Jan. 2017) at 15, available at <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/electrifying-insights-how-automakers-can-drive-electrified-vehicle-sales-and-profitability> (citing Edmunds).

vehicle's lifetime even if gasoline prices remain in the range of \$2.50 per gallon.³² In addition, as discussed below, upfront EV costs are declining considerably—primarily as a result of declining battery costs—making these vehicles increasingly affordable for consumers. A recent Bloomberg New Energy Finance Report concluded that EVs and gasoline vehicles will reach cost parity in Europe and the U.S. by 2025, and that EVs will account for 54 percent of all light-duty vehicle sales globally by 2050.³³ A report by UBS predicts that electric vehicles will be less expensive much sooner than expected, with EV prices in Europe comparable to traditionally-powered vehicles in 2018, with China expected to reach cost parity in 2023 and the U.S. in 2025. UBS also increased its forecasts for global electric car sales to 14 percent by 2025 (14.2 million vehicles).³⁴

An increasing number of EVs are now available at lower cost, increasing their accessibility to more Americans. For example, the Chevy Bolt sells for approximately \$37,000 MSRP.³⁵ The Plug In America vehicle tracker shows a host of new plug-in electric vehicles selling in the \$20,000-30,000 range.³⁶

5. The NPRM's Treatment of EV and Battery Costs is Incorrect

EV costs, largely driven by battery costs, appear to be unreasonably high in the NPRM and PRIA.³⁷ For the NPRM the Argonne National Laboratory's BatPac model was used to determine the size and cost of the battery for different vehicle classes and different types of vehicle electrification. PRIA at 366. The PRIA describes some ways in which the modeling increased the costs: battery pack cost adjusted upward; battery management system cost increased; and battery automatic and manual disconnect unit cost was added. PRIA at 366-67. Based on review of the CAFE model, EPA found that technology cost values in the CAFE model inputs that are higher than expected when considering data from DOE for battery costs.³⁸ The agencies' analysis is not sufficiently transparent, but it appears that the battery costs are significantly overestimated in the modeling supporting the NPRM.

³² Frontier Group, "Drive Clean and Save: Electric Vehicles Are a Good Deal for California Consumers and the Environment" (July 2016) at 1-2, 6-7, *available at* <http://environmentcaliforniacenter.org/sites/environment/files/reports/Drive%20Clean%20and%20Save%20June%202016.pdf>.

³³ Bloomberg New Energy Finance, "Electric Vehicles to Accelerate to 54% of New Car Sales by 2040" (July 6, 2017), <https://about.bnef.com/blog/electric-vehicles-accelerate-54-new-car-sales-2040/>; Jess Shankleman, "Pretty Soon Electric Cars Will Cost Less Than Gasoline" (May 26, 2017), <https://www.bloomberg.com/news/articles/2017-05-26/electric-cars-seen-cheaper-than-gasoline-models-within-a-decade>.

³⁴ Neil Winton, "Electric Car Price Parity Expected Next Year – Report" (May 22, 2017), <https://www.forbes.com/sites/neilwinton/2017/05/22/electric-car-price-parity-expected-next-year-report/#13dff40a7922>; UBS, "Q-Series UBS Evidence Lab Electric Car Teardown – Disruption Ahead?" (May 18, 2017), *available at* <http://www.advantagelithium.com/resources/pdf/UBS-Article.pdf>.

³⁵ Chevy, "Bolt EV," <https://www.chevrolet.com/electric/bolt-ev-electric-car> (last visited Oct. 25, 2018).

³⁶ *Available at* <https://plugstar.zappyride.com/cars>.

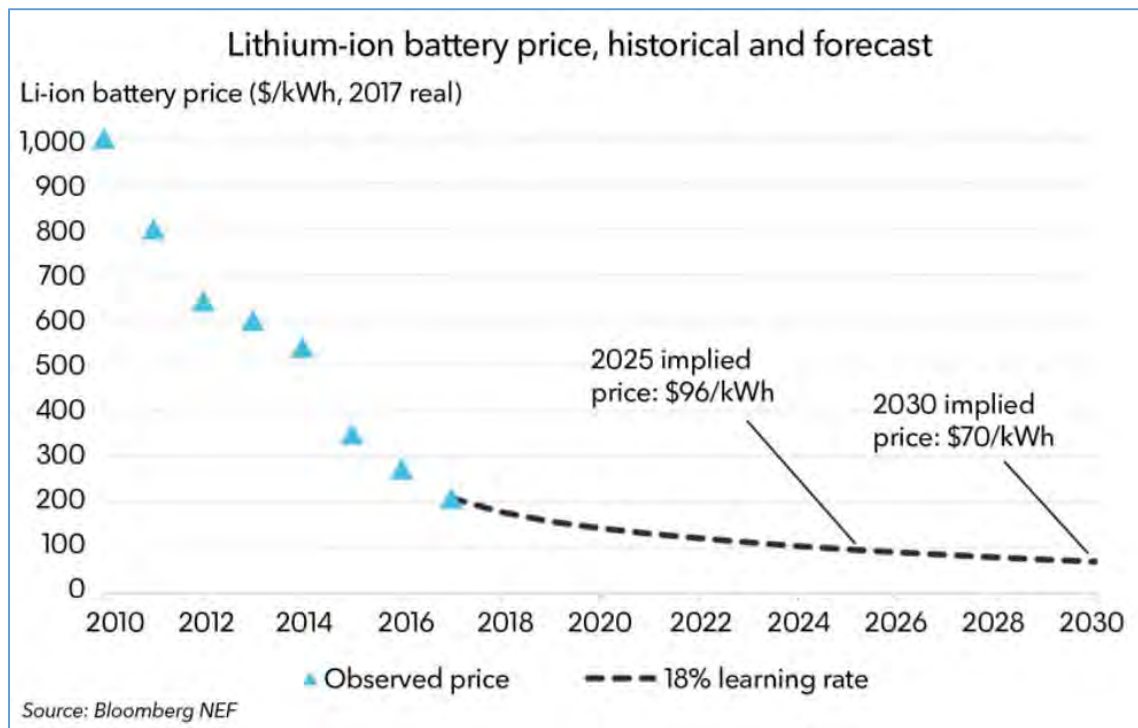
³⁷ *See* Exhibit A (EPA Further Review of CAFE Model & Inputs, February 28, 2018, EPA-HQ-OAR-2018-0283-0453).

³⁸ Exhibit A (EPA Further Review of CAFE Model & Inputs, February 28, 2018).

Overall, battery technology has improved and battery costs have fallen dramatically due in part to reduced material costs, manufacturing improvements, and higher manufacturing volumes. According to Bloomberg New Energy Finance, the average energy density of EV batteries is improving at around 5-7% per year.³⁹ In 2010, the average battery pack prices were \$1,000/kWh. At the end of 2017, those average prices dropped to \$209/kWh, demonstrating a 79% drop in just seven years.⁴⁰ As recent examples, Tesla has been on track to achieve \$100/kWh by the end of 2018 and Audi has been buying batteries at \$114/kWh, according to trade press reports.⁴¹

Tesla has pioneered advanced manufacturing techniques to manufacture large volumes of battery packs with high quality at low cost.⁴² Tesla now produces advanced lithium-ion batteries at its Gigafactory in Nevada. In mid-2018, battery production at Gigafactory 1 reached an annualized rate of roughly 20 GWh, making it the highest-volume battery plant in the world.⁴³

Bloomberg New Energy Finance’s 2018 analyses show that battery costs are projected to continue to decline substantially.⁴⁴



³⁹ Bloomberg New Energy Finance, “Electric Vehicle Outlook: 2018,” <https://bnef.turtl.co/story/evo2018?teaser=true>.

⁴⁰ *Id.*

⁴¹ Fred Lambert, “Tesla to achieve leading \$100/kWh battery cell cost this year, says investor after Gigafactory 1 tour” (Sept. 11, 2018), <https://electrek.co/2018/09/11/tesla-100-kwh-battery-cost-investor-gigafactory-1-tour/>.

⁴² Tesla, Inc., S.E.C. Form 10-K (Feb. 22, 2018) at 3-4, available at https://www.sec.gov/Archives/edgar/data/1318605/000156459018002956/tsla-10k_20171231.htm.

⁴³ Tesla, “Tesla Gigafactory,” <https://www.tesla.com/gigafactory> (last visited Oct. 25, 2018).

⁴⁴ Bloomberg New Energy Finance, “New Energy Outlook 2018,” <https://bnef.turtl.co/story/neo2018?teaser=true>.

Bloomberg New Energy Finance projects that the cost of batteries will decrease by 77 percent between 2016 and 2030. As a result, EVs will be less expensive to buy than conventional gasoline vehicles by 2025 in the U.S.⁴⁵ This up-front cost parity point does not take into consideration the fuel savings and maintenance savings over the lifetime of EV use as compared to gasoline vehicle use, which (as discussed in Section III.A.4) is substantial.

The increase in mass manufacturing of lithium-ion storage is expected to continue to reduce battery prices. As a Goldman Sachs analysis recently concluded: “At the rate that battery prices are coming down, we’re going to be to a point in the next five years where it’s not a choice between paying more to drive an electric vehicle versus an internal combustion engine. It’s going to be a comparable choice.”⁴⁶

The International Council on Clean Transportation’s (ICCT) Efficiency Technology and Cost Assessment concluded that, primarily because of rapid developments in battery pack technologies, EV costs will be reduced by \$4,300-\$5,300 of dollars per vehicle by 2025 compared to EPA’s prior estimates in support of the MY 2017-2025 standards. ICCT concludes that battery costs of \$140/kWh is a realistic estimated value by 2025, as compared with EPA estimates in the 2016 Mid-Term Evaluation (MTE) analysis of \$180-200/kWh.⁴⁷

6. Consumer Demand Will Track Growing Options and Declining Costs

In the NPRM, the agencies state that “ongoing low sales volumes and a growing body of literature suggest that consumer welfare losses may still exist if manufacturers are forced to produce electric vehicles in place of vehicles with internal combustion engines (forcing sacrifices to cargo capacity or driving range) in order to comply with standards.” 83 Fed. Reg. at 43,083. More generally, the agencies disparage consumer acceptance of and demand for EVs throughout the NPRM.

NCAT disagrees with these views. As set forth above, demand for EVs is projected to grow dramatically in coming years, costs are declining, model offerings, range and performance are increasing, and auto manufacturers are investing heavily in EVs as a critical element of sales and the future fleet mix. As manufacturers offer more vehicles with better range, and invest more heavily in marketing these vehicles, there is reason to expect concomitant expansion in consumer demand.

For example, Tesla’s growth to the present while the existing vehicle standards are in effect illustrates that past projections of consumer acceptance of EV technology have been repeatedly surpassed. By selling over 103,000 cars, Tesla’s 2017 sales volume equaled the sales

⁴⁵ Jess Shankleman, “Pretty Soon Electric Cars Will Cost Less Than Gasoline” (May 26, 2017), <https://www.bloomberg.com/news/articles/2017-05-26/electric-cars-seen-cheaper-than-gasoline-models-within-a-decade>; Jess Shankleman, “The Electric Car Revolution Is Accelerating” (July 6, 2017), <https://www.bloomberg.com/news/articles/2017-07-06/the-electric-car-revolution-is-accelerating>.

⁴⁶ Goldman Sachs, “An Inflection Point in the Global Expansion of Electric Vehicles” (May 18, 2018), <https://www.goldmansachs.com/insights/pages/inflection-point-electric-vehicles-chris-buddin.html>.

⁴⁷ ICCT, “Efficiency Technology and Cost Assessment for U.S. 2025-2030 Light-duty Vehicles” (Mar. 2017) at 11, 15, available at <http://www.theicct.org/US-2030-technology-cost-assessment>.

volume that had been predicted in the draft TAR for MY 2025.⁴⁸ Tesla's existing EV market sales already surpass the agencies' predicted fleet mix in the current NPRM, which predicts 1% fleet technology penetration level for EV passenger cars through 2029.⁴⁹ However, in September 2018, Tesla's share of the U.S. market share was over 2%⁵⁰ and EVs were an even greater percent of the market share when taking into account other manufacturers. Tesla's market performance directly shows that consumers are increasingly preferring EV technology.

Notably, the substantial growth in EV demand has occurred despite limited consumer awareness of EVs.⁵¹ As EV deployment, options, marketing, and market penetration continues to ramp up, consumer awareness will likewise increase—helping to expand latent consumer demand. Results of a survey by the Consumer Federation of America show that consumer interest in purchasing an EVs is increasing, and that this interest greatest among young adults.⁵² A recent survey by AAA found that interest in EVs has rapidly increased to the point that “20 percent or 50 million Americans will likely go electric for their next vehicle purchase.”⁵³

7. EVs Create U.S. Jobs

The major commitments to advanced technology vehicles by manufacturers in the U.S. spur job creation. For example, Mercedes announced that it will spend \$1 billion to upgrade production capabilities to manufacture electric vehicles and batteries in Alabama, which would create 600 new jobs.⁵⁴ Building technology that improves fuel economy for innovative vehicles is directly responsible for more than 288,000 jobs in 48 states, according to recent assessments by the BlueGreen Alliance.⁵⁵ These high-quality jobs include occupations in research and development, engineering, software development, manufacturing, maintenance, infrastructure

⁴⁸ Draft TAR at 4-20; Tesla, Inc., S.E.C. Form 10-K (Feb. 22, 2018) at 39.

⁴⁹ See 83 Fed. Reg. at 43267, Table VII-6, 43218-21, Tables V-1 thru V-4.

⁵⁰ Statista, “Tesla's estimated U.S. market share from January 2018 to September 2018,” <https://www.statista.com/statistics/519579/market-share-of-tesla-in-the-united-states/>.

⁵¹ Based on a survey of consumers in the U.S., Germany, Norway, and China, a recent McKinsey & Company report found that approximately 50 percent of all consumers today are not yet familiar with EVs and related technology. Despite this lack of awareness from many consumers, the report also found that a large share of prospective new vehicle buyers in the U.S. (29 percent) are considering purchasing an EV model, demonstrating that there is “substantial latent demand for EVs” as consumer awareness increases. McKinsey & Company, “Electrifying insights: How automakers can drive electrified vehicle sales and profitability” (Jan. 2017) at 8, available at <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/electrifying-insights-how-automakers-can-drive-electrified-vehicle-sales-and-profitability> (citing Department of Energy (www.FuelEconomy.gov), EPA).

⁵² Consumer Federation of America, “New Data Shows Consumer Interest in Electric Vehicles Is Growing” (Sept. 19, 2016), http://consumerfed.org/press_release/new-data-shows-consumer-interest-electric-vehicles-growing/.

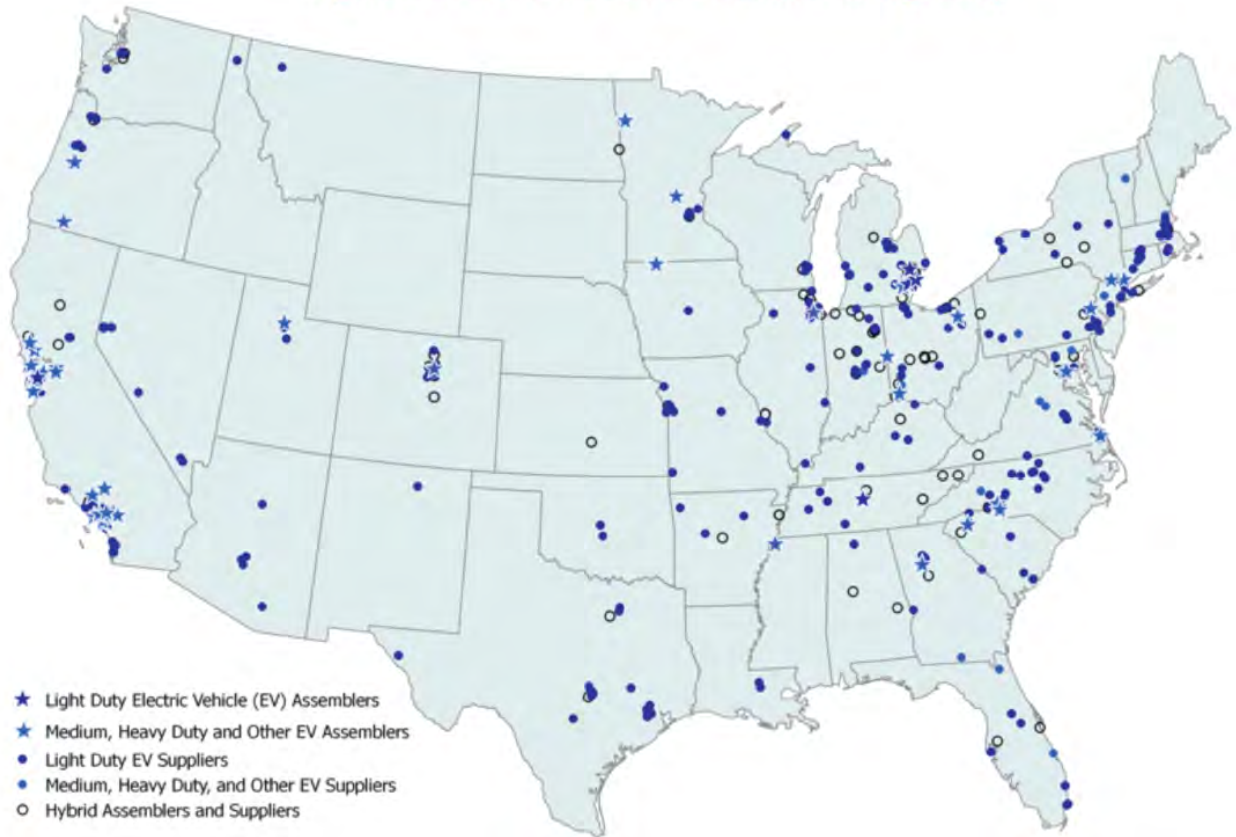
⁵³ AAA, “1-in-5 U.S. Drivers Want an Electric Vehicle” (May 8, 2018), <https://newsroom.aaa.com/2018/05/1-in-5-us-drivers-want-electric-vehicle/>.

⁵⁴ Ivana Kottasová, “Mercedes-Benz will spend \$1 billion to upgrade its production capabilities in Alabama and jump-start its electric vehicle program in the U.S.” (Sept. 22, 2017), <http://money.cnn.com/2017/09/22/news/economy/mercedes-alabama-billion-investment-jobs/>.

⁵⁵ BlueGreen Alliance & NRDC, “Supplying Ingenuity II: U.S. Suppliers of Key Clean Fuel-Efficient Technologies” (May 2017) at 3, available at <https://www.bluegreenalliance.org/resources/supplying-ingenuity-ii-u-s-suppliers-of-key-clean-fuel-efficient-vehicle-technologies/>.

development and sales. Electric vehicle manufacturing is taking place in many different locations across the U.S., as illustrated in the following figure.

Figure 2: U.S. Electric Vehicle Manufacturing Today



Source: BlueGreen Alliance (Sept. 2018)⁵⁶

8. International Policy Developments Support Growth and Underscore Need for U.S. Leadership

The global market for electric vehicles and other advanced technology vehicles and supporting technologies is expanding rapidly and projected to grow dramatically in the coming decades—presenting a major market opportunity for U.S. companies. Strong U.S. standards will play a critical role in helping to ensure that U.S. companies are well positioned to compete in these rapidly expanding new markets.

According to the International Energy Agency (IEA), over 1 million electric cars were sold in 2017 and the global count of electric cars surpassed 3 million vehicles in 2017 after an

⁵⁶ BlueGreen Alliance, “Electric Vehicles at a Crossroads: Challenges and Opportunities for the Future of U.S. Manufacturing and Jobs” (Sept. 12, 2018) at 3, available at <https://www.bluegreenalliance.org/resources/electric-vehicles-at-a-crossroads/>.

accordingly appear to cut in favor of *retaining* existing GHG standards and the augural CAFE standards, and to undermine the case for the proposed rollback.

Notably, NHTSA does not argue that achievement of the standards is not within the financial capability of the industry, nor would there be any support for such an argument in the record. Further, as we argue in Section III, above, the industry and global markets are moving decisively in the direction of EVs. Strong U.S. standards therefore are critically important to maintaining U.S. global competitiveness.

NHTSA’s “economic practicability” arguments appear to be based almost exclusively on vague generalizations and speculation about consumer preferences. “If a potential CAFE standard requires manufacturers to add technology to new vehicles that consumers do not want, it would *seem* to present issues with elimination of consumer choice. Depending on the extent and expense of required fuel saving technology, that elimination of consumer choice *could be* unreasonable.” 83 Fed. Reg. at 43216 (emphasis added). NHTSA states that consumers “generally tend not to be interested in better fuel economy above other attributes, particularly when gasoline prices are low.” *Id.* at 43217. The agency argues that lack of consumer interest could dampen sales of vehicles with the technology required to meet the standards, and that manufacturers will need to subsidize sales of vehicles with higher fuel economy, especially hybrids, EVs, and PHEVs—for which NHTSA states demand is low. *Id.* at 43217-18. Finally, NHTSA argues that this will result in adverse impacts on vehicle affordability, especially for low-income or credit-challenged consumers. *Id.* at 43222.

These statements are unsupported by the record and do not provide a valid basis for reducing CAFE standards from the augural levels, let alone freezing them at MY 2020 levels for six years. Again, the courts have made clear that while consumer acceptance may be a relevant consideration in setting CAFE standards, NHTSA cannot use it to override EPCA’s overarching goal of energy conservation. *Ctr. for Biological Diversity*, 538 F.3d at 1205; *Ctr. for Auto Safety*, 793 F.2d at 1338. That is precisely what NHTSA has proposed to do here. Further, recent consumer surveys emphasize that consumers value fuel economy and want manufacturers to provide more fuel efficient vehicles and more options.¹²⁹ In addition, as set forth in Section III, above, consumer demand for EVs in particular is growing and is expected to continue to rise as auto manufacturers dramatically expand the number and types of vehicle offerings and battery range, and as costs continue to decline relative to internal combustion engine vehicles. Finally, the agencies’ concerns about consumer acceptance and consumer choice appear to be inextricably linked with their flawed analysis of technology costs (discussed in Section IV).

6. NHTSA Incorrectly Interprets “Other Standards of the Government”

Finally, EPCA expressly requires NHTSA to consider “the effect of other motor vehicle standards of the Government on fuel economy.” 49 U.S.C. § 32902(f). Contrary to NHTSA’s arguments in the NPRM, this includes not only EPA motor vehicle emission standards under the CAA (including GHG standards currently in effect), but also state motor vehicle emission

¹²⁹ See, e.g., Consumer Reports, 2018 Automotive Fuel Economy Survey (July 2018) (finding that 38% of American car owners surveyed value fuel economy as a top aspects of their current vehicle that has the most room for improvement), at <https://consumersunion.org/wp-content/uploads/2018/07/2018-Fuel-Economy-Survey-Fact-Sheet-1.pdf>.

standards for which preemption has been waived under CAA Section 209(b). *See, e.g.*, NHTSA, Final Rule: Average Fuel Economy Standards for Light Trucks Model Years 2008-2011, 71 Fed. Reg. 17,566, 17,643 (Apr. 6, 2006) (CARB emission standards discussed in section X.D. entitled “Federal Motor Vehicle Emission Standards”). Accordingly, these “other motor vehicle standards of the Government” include California’s and other States’ Advanced Clean Cars Program regulations, including LEV III GHG standards and ZEV standards—which have the effect of increasing fuel economy and indicate “feasible” levels of fuel economy. EPCA requires NHTSA to consider these state emission standards in identifying what is the “maximum feasible” fuel economy for these model years. NHTSA’s failure to do so in the proposal is contrary to the statute and should be reversed.

C. NHTSA Should Not Amend the Existing MY 2021 Standards

In addition to the broader arguments set forth above, NCAT specifically urges NHTSA not to revise the existing MY 2021 standards. First, NHTSA’s previous determination that the MY 2021 standards are the “maximum feasible” for that model year is amply supported by a well-developed record, and there is no basis for concluding that the MY 2021 standards no longer meet the statutory standard.

Second, revising the standards would create uncertainty and impose resulting costs on manufacturers and others in industry that are relying on the standards. One of the significant benefits of the 2012 rulemaking was the substantial lead time that it provided, to support long-term planning, research and development and investments in development and commercialization of technologies to meet the standards. To our knowledge, NHTSA has never revised an already-adopted CAFE standard. This would be a damaging step for businesses in the near term and would create a negative precedent, undermining regulatory certainty and businesses’ ability to make investments in reliance on future standards.

Third, and relatedly, any change to the MY 2021 standards would not provide adequate lead time as required by EPCA. NHTSA acknowledges that EPCA requires it to promulgate new CAFE standards for light-duty vehicles at least 18 months before the beginning of each model year, which NHTSA interprets to begin on September 1 of the prior calendar year. 83 Fed. Reg. at 43207 (citing 49 U.S.C. § 32902(a)). Accordingly, it recognizes the MY 2022 standards must be promulgated by April 1, 2020. *Id.* NHTSA concludes, however, that amendments to existing standards are governed by 49 U.S.C. § 32902(g)(2), which requires 18 months of lead time when NHTSA amends CAFE standards to make them more stringent. Because this provision does not specify a lead-time requirement for amendments to make standards less stringent, NHTSA concludes that EPCA imposes *no* lead time requirement in such circumstances. That is, NHTSA reads EPCA to allow amendments to reduce a standard’s stringency *up to the beginning of the model year*. 83 Fed. Reg. at 43207.

This interpretation of the statute is unreasonable and impermissible, and NHTSA’s proposed approach is otherwise arbitrary and capricious. Congress in § 32902 has indicated that at least 18 months of lead time are appropriate when setting standards. Manufacturers’ need for adequate lead time when designing products and developing compliance strategies is the same regardless of whether the agency is making standards more stringent, less stringent, or simply changing the structure or compliance options provided under the standards. Manufacturers have

43235 n. 508. NCAT strongly disagrees with this analysis with regard to both the LEV III and ZEV standards.

California’s LEV III standards are not “related to fuel economy standards or average fuel economy standards,” 49 U.S.C. § 32919(a), and are therefore not expressly preempted by EPCA. The LEV III GHG standards were enacted for the purpose of protecting public health and welfare and affect fuel economy only incidentally to that purpose. *See Central Valley*, 529 F. Supp. 2d at 1174-75. Further, the standards can be met in whole or in part through measures and technologies other than increased fuel efficiency, and the standards address GHG emissions other than carbon dioxide produced as a result of fuel combustion. Notably, they can be fully met through the use of alternative drive technologies that use different fuels altogether (*e.g.*, electricity or hydrogen)—rather than merely improving the fuel efficiency of conventional internal combustion engines. Additionally, under LEV III, manufacturers can generate air conditioning system credits through system efficiency improvements, low refrigerant leakage designs, and use of low global warming potential refrigerants. 2013 Waiver Grant, 78 Fed. Reg. at 2135-36. As the *Green Mountain* court explained, the California and Vermont GHG regulations at issue in that case were not “related to” fuel economy standards in part because they included an array of compliance options allowing multiple approaches with varying levels of fuel economy. 508 F. Supp. 2d at 351-53. Likewise, the *Central Valley* court held “that a law that requires substantial improvement in average fleet mileage standards incidentally to its purpose of protecting public health and welfare does not constitute a de facto regulation of fuel economy standards *unless there is a narrow one-to-one correlation between the pollution reduction regulation and the fuel efficiency standard.*” *Central Valley*, 529 F. Supp. 2d at 1175 (emphasis added). That is not the case with regard to the LEV III GHG standards.

It is even clearer that California’s ZEV standards are not “related to fuel economy standards or average fuel economy standards,” 49 U.S.C. § 32919(a), and are therefore not expressly preempted by EPCA. The ZEV standards require the production and sale of vehicles meeting stringent, integrated conventional pollutant and GHG limits that *cannot be achieved through application of increased fuel efficiency*. Rather, they unequivocally require implementation of alternative drive technologies and fuels, including electric drive, hydrogen or compressed air. While qualification as a ZEV is defined in part by reference to GHG emissions, the requirement of zero GHG or other air pollutant emissions has the effect of making internal combustion engines ineligible. No degree of “fuel economy” can be applied to achieve these standards. And the energy efficiency of ZEVs (with regard to the alternative fuels and drive technologies they use) is largely irrelevant to meeting the requirements of the ZEV standards. Further, although ZEV standards achieve major reductions in GHG emissions, by virtue of the drive technologies the standards require, they achieve deep reductions in non-GHG pollutant emissions (*e.g.*, NOx emissions) that cannot be achieved by internal combustion engines. California has adopted ZEV standards in significant part precisely because of the NOx and other non-GHG emission reductions they achieve, which are critical to the achievement of air quality standards in the state. *See also infra* Section VIII.B.5.

D. California’s LEV III and ZEV Standards Are Not Impliedly Preempted Under EPCA

Congress intends to preempt the historic powers of the States, “it must make its intention to do so ‘unmistakably clear in the language of the statute.’” *Raygor v. Regents of the Univ. of Minn.*, 534 U.S. 533, 544–45 (2002). This same principle applies here, where Congress has expressly limited the scope of preemption under Section 209 by requiring EPA to waive preemption unless the agency makes one or more specific affirmative determinations. Accordingly, absent a clear Congressional statement, EPA lacks authority to rescind a waiver.

Other provisions of the CAA make clear that Congress knows how to authorize EPA to rescind a waiver if it chooses to do so. For example, CAA Section 505(d), authorizes EPA to waive certain notification requirements for Title V permit applicants, but expressly states that “[a]ny waiver granted under this subsection may be revoked or modified by the Administrator by rule.” 42 U.S.C. § 7661d(d) (emphasis added). Several other CAA provisions likewise specify the conditions for termination or extension of a waiver. *See, e.g.*, 42 U.S.C. § 7411(j)(D)-(F) (expressly establishing time frame and basis for termination of a waiver for innovative systems of emission reduction); 42 U.S.C. § 7412(f)(4) (establishing express time limit for waiver of standards); 42 U.S.C. § 7545(o)(7)(C) (expressly providing for termination and limited extension of a waiver of certain renewable fuel standard requirements). Where, as here, “Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion.” *Brown v. Gardner*, 513 U.S. 115, 118 (1994) (quoting *Russello v. United States*, 464 U.S. 16, 23 (1983)). Accordingly, Congress’s decision not to include similar language in Section 209(b) makes clear that it did not intend to authorize EPA to rescind a waiver once granted.

Congress’s decision not to authorize EPA to revoke a previously granted waiver makes good sense as a policy matter. Indeed, it is difficult to imagine Congress adopting the contrary position, and certainly not without imposing significant restrictions on such authority. Both California and the other Section 177 states, and the entities they regulate, justifiably rely on EPA waiver decisions in order to implement state programs for which a waiver has been granted. States and regulated entities make substantial investments based on this reliance – with regard to compliance with requirements, administration of programs, and achievement of policy objectives and statutory requirements such as attainment and maintenance of the NAAQS. Granting EPA authority to revoke a waiver of preemption after the fact would create substantial uncertainty for all of these parties; and exercise of any such authority would wreak havoc, severely disrupting investments and imposing significant costs. It is not surprising that Congress opted not to create such a regime.

B. EPA’s Proposed Grounds for Rescission Are Invalid

1. EPA Must Meet a High Bar to Deny, Let Alone Rescind, a Waiver

Even if EPA were authorized to rescind a previously granted waiver (which it is not), the proposed rescission is inconsistent with the statute, unsupported by the record, and otherwise arbitrary and capricious.

The legislative history of Section 209 makes clear that Congress intended “to afford California the broadest possible discretion in selecting the best means to protect the health of its

APPENDIX A

**COMMENTS OF THE CENTER FOR BIOLOGICAL DIVERSITY, CONSERVATION LAW
FOUNDATION, EARTHJUSTICE, ENVIRONMENTAL DEFENSE FUND, ENVIRONMENTAL LAW AND
POLICY CENTER, NATURAL RESOURCES DEFENSE COUNCIL, PUBLIC CITIZEN, INC.,
SIERRA CLUB, UNION OF CONCERNED SCIENTISTS
ON THE PROPOSED SAFER AFFORDABLE FUEL-EFFICIENT (SAFE) VEHICLES RULE FOR
MODEL YEARS 2021-2026 PASSENGER CARS AND LIGHT TRUCKS,
*DOCKET Nos. NHTSA-2018-0067, EPA-HQ-OAR-2018-0283***

The plain meaning of the words “compelling” and “extraordinary” further undermines EPA’s argument. The term “compelling” means “demanding attention,” and the term “extraordinary” means “going beyond what is usual, regular, or customary.”⁴³⁴ The D.C. Circuit Court has called the phrase “expansive statutory language.”⁴³⁵ And courts have held that the terms do not require uniqueness.⁴³⁶

It is difficult to see how climate change and its impacts do not meet the definition of “compelling and extraordinary,” both “demanding action” and being “beyond what is usual, regular, or customary.” Under any reasonable interpretation of the statute, there is no basis for excluding greenhouse gas emissions and the impacts of climate change from Section 209(b).

As a practical matter, it makes little sense to interpret the statutory language as requiring California to show that air quality or climate conditions in the state are “unique” or “sufficiently different” from those in other states. As discussed more below, the Clean Air Act allows other states to adopt California’s standards. 42 U.S.C. §§ 7507, 7543. It does not make sense to require California to show that conditions are unique to it or worse than in any other state, and also to allow other states to adopt California regulations to address their air pollution problems. That other states, in fact, suffer from pollution equivalent to, or in some instances, worse than California’s does not defeat the conclusion that California suffers from compelling and extraordinary conditions.⁴³⁷

Moreover, there is nothing in the language of Section 209(b)(1)(B) that calls for a geographic comparison. Even if EPA were correct (which it is not) that conditions in California are not geospatially “extraordinary,” they are certainly *temporally* extraordinary, as the string of recent and worsening climate-change-related impacts in California demonstrates.

EPA also tries to draw a clear distinction between “the nature of GHG concentrations as a *global* air pollution problem, rather than a *regional or local* air pollution problem.” 83 Fed. Reg. at 43,245 (emphasis added). But this has no basis. First, nothing in the plain meaning of “compelling and extraordinary conditions” means “local” or otherwise supports this distinction. Moreover, EPA’s attempt to distinguish between “local” and “global” pollutants and impacts does not accord with reality. Recent studies have shown that nitrogen oxides and particulate matter pollution (which EPA recognizes are within the scope of Section 209(b)) have both local

⁴³⁴ Merriam-Webster Online Dictionary. <http://www.merriam-webster.com> (23 Oct. 2018).

⁴³⁵ *Am. Trucking Ass’ns v. EPA*, 600 F.3d 624, 627 (D.C. Cir. 2010) (interpreting the identical phrase in Clean Air Act section 209(e)).

⁴³⁶ See, e.g., *Shell Oil Co. v. United States Dep’t of Labor*, 106 F. Supp. 2d 15, 19 (D.D.C. 2000) (dismissing argument OSHA did not properly find “compelling local conditions” because “it did not find that there were any ‘compelling’ conditions unique to California”); *Amerada Hess Pipeline Corp. v. FERC*, 117 F.3d 596 (D.C. Cir. 1997) (dismissing the argument that because oil spills are common occurrences, they could not be considered “extraordinary”).

⁴³⁷ See U.S. Environmental Protection Agency, Criteria Pollutant Nonattainment Summary Report; <https://www3.epa.gov/airquality/greenbook/ancl3.html>.

and global sources, as well as local and global impacts.⁴³⁸ The distinction EPA attempts to make between GHG and criteria pollutants is illusory.

b. EPA’s interpretation is inconsistent with the statutory structure and legal precedent.

EPA’s interpretation also violates the statutory structure of the Clean Air Act, as well as applicable legal precedent. Section 209(b) must be read in relation to the rest of the Clean Air Act. In particular, Section 209(b) is directly related to both Section 202(a) and 209(a). As the Supreme Court has held, Section 202(a) grants EPA authority to regulate greenhouse gas emissions from new motor vehicles. *Massachusetts v. EPA*; 549 U.S. 497 (2007). Section 209(a) then preempts states from adopting any such standards. 42 U.S.C. § 7543(a) (2018). And Section 209(b) grants a waiver from the preemption provision for California. 42 U.S.C. § 7543(b) (2018).

Given this statutory design, it is illogical and unreasonable for EPA to propose that California does not have authority co-extensive with EPA’s under Section 202(a). Asserting that California may regulate fewer pollutants than EPA is also inconsistent with the legislative history making clear that section 209(b) allows California to “establish . . . standards applicable to emissions not covered by Federal Standards.” H. Rpt. 90-728 at 21. It is also inconsistent with agency precedent, in which EPA has consistently approved California’s authority to regulate any pollutant that *could* be regulated by EPA under 202(a), even if EPA had not done so, and regardless of which particular California “condition” that pollutant impacted.⁴³⁹ As EPA has recognized, if Congress had been concerned with only a specific California problem, it “could have limited the ability of California to set more stringent standards” to only those pollutants that contributed to that problem.” 49 Fed. Reg. at 18,890. “Instead, Congress took a broader approach consistent with its goal of allowing California to operate its own comprehensive program.” *Id.*

Case law supports this conclusion, upholding California’s authority to regulate greenhouse gases under Section 209(b), despite claims of preemption under the Energy Policy and Conservation Act. *Central Valley Chrysler Jeep Inc. v. Goldstene*, 529 F. Supp. 2d 1151 (E.D. Cal. 2007) (concluding that “both EPA and California, through the waiver process of section 209, are equally empowered through the Clean Air Act to promulgate regulations that limit the emission of greenhouse gasses, principally carbon dioxide, from motor vehicles”).

Second, EPA’s rigid requirement of uniqueness – that the “compelling and extraordinary conditions” that California seeks to address must be singular to it and not shared by other states –

⁴³⁸ See, e.g., Lin, M., et al. *US surface ozone trends and extremes from 1980 to 2014: quantifying the roles of rising Asian emissions, domestic controls, wildfires, and climate*, *Atmos. Chem. Phys.*, 17, 2943-2970 (2017); Ewing, S., et al., *Pb Isotopes as an Indicator of the Asian Contribution to Particulate Air Pollution in Urban California*, *Environ. Sci. Technol.*, 44 (23), 8911–8916 (2010).

⁴³⁹ See, e.g., 49 Fed. Reg. at 18,890 (rejecting argument that California cannot regulate particulate matter because those emissions do not relate primarily to California’s smog problem); 38 N.J.R. 497(b) at response to comment 585 (describing EPA decision document granting waiver for pollutants not federally regulated under section 202 at the time); 43 Fed. Reg. at 25,735 (approving waiver to regulate even “harmless” emissions).

Where, as here, the terms of the statute give no indication that Congress meant to delegate legislative authority to the agency, the agency has no claim to be able to speak with the force of law and is not entitled to *Chevron* deference.⁵⁹⁸ Even if EPA were to claim that its opinion is entitled to some respect (i.e., *Skidmore* deference) if a court were evaluating a preemption challenge as to whether the conditions of section 177 have been met, that claim for respect would be unmerited here.⁵⁹⁹

First, EPA is reading into an otherwise unambiguous statutory provision new requirements that EPA has never identified before. States have previously adopted California standards for non-criteria pollutants without any objection from EPA.⁶⁰⁰ EPA makes no attempt to reconcile its “new” interpretation with EPA’s prior position.

Second, EPA’s new interpretation undermines the clear policy directives of section 177. Congress’ express goal was to protect manufacturers from a “third vehicle” set of standards, i.e., states adopting and enforcing standards that are neither identical to the California standards nor to the federal standards. But this is exactly what EPA’s “new” interpretation would do by picking which of California’s emission standards other states may adopt and enforce. EPA’s interpretation would mean that manufacturers would have to certify that individual cars sold in these other states meet a hybrid set of standards – part California standards for criteria pollutants and part federal standards for non-criteria pollutants. The certification process would match neither the California program nor the federal program, and enforcement would be equally confounded. EPA has not explained what those hybrid standards would look like or whether compliance would even be feasible. EPA makes no policy argument to support its new interpretation and cannot explain how this interpretation would advance the policies expressly announced by Congress. A “throw away” interpretation that reflects no exercise of agency expertise in the policy or technical realm is entitled to no respect even under *Skidmore*.

EPA’s proposed conclusion lacks any statutory basis and is inconsistent with Congress’s policy objectives under section 177. EPA should abandon any effort to make any final determination or conclusion regarding the types of California emission standards that other states can adopt or enforce under section 177. EPA has no role in implementing section 177 and no authority to add to or interpret the statutory conditions. If California is entitled to a waiver of preemption under section 209(b), other states meeting the conditions under section 177 are as well. Section 177 provides no alternative basis for denying state adoption of California standards allowed under section 209(b).

⁵⁹⁸ *U.S. v. Mead*, 533 U.S. 218, 231-32 (2001).

⁵⁹⁹ The related discussion and citations regarding NHTSA’s lack of authority to interpret EPCA’s preemption provision are incorporated by reference here as well.

⁶⁰⁰ For example, California’s program regulates formaldehyde emissions. *See* Cal. Code Regs. tit. 13, § 1961(a). EPA granted a waiver for these non-criteria pollutant emission standards in 1992. 57 Fed. Reg. 38503 (Aug. 25, 1992).

repeatedly made adjustments to its maximum feasible average fuel-economy level to account for the effects of various California emission standards. *See, e.g.*, 56 Fed. Reg. 13,779 (Apr. 4, 1991); 53 Fed. Reg. 11078 (Apr. 5, 1988). It is only in recent years, under leadership hostile to energy-conservation and pollution-control goals, that NHTSA has articulated the view that California emission standards are preempted and have no effect on average fuel-economy standards. The agency's failure to recognize this inconsistency and explain its change in position is arbitrary and capricious.

The notice of proposed rulemaking dismisses both the downward-modification provision and its definition of "Federal standards" as irrelevant to the question whether California emission standards authorized by Section 209(b) were "Federal motor vehicle standards" to be considered by NHTSA. The linchpin of NHTSA's argument is the observation that the definitional section was denominated "[f]or purposes of this subsection," 15 U.S.C. § 2002(d)(3) (1976), rather than "for purposes of this Act." The distinction NHTSA attempts to draw is not well founded. EPCA supplied no competing definition of "Federal standards" elsewhere in the Act and, to reiterate, it would have been irrational for Congress to require NHTSA to account for the interplay--even possible inconsistency--between California emission standards and average fuel-economy standards, if Congress thought those state standards were preempted by Section 32919. California's emission standards did not become more or less "related to" average fuel-economy standards after model year 1980. The notice of proposed rulemaking does not explain this discrepancy or ground its current view – which departs from its contemporaneous and longstanding view – in the text, purpose, or legislative history of EPCA.

The only reasonable view is that California emission standards authorized by Section 209(b) of the CAA, no less than EPA emission standards authorized under Section 202(a) of the CAA, are the baseline emission "standards of the Government" which NHTSA must respect and take into account in determining fuel-economy standards under EPCA. 49 U.S.C. § 32902(f).

e. NHTSA's average fuel-economy standard is not "related to" advanced clean cars.

EPCA tasks NHTSA with establishing "average fuel economy standards" for each manufacturer of new automobiles on a model-year basis. 49 U.S.C. § 32902(a). While this standard must be "the maximum feasible average fuel economy level that [NHTSA] decides the manufacturer can achieve" as determined using specified statutory criteria, *ibid.*; *see also id.* § 32902(f), EPCA does not prevent or discourage auto manufacturers from exceeding that standard, whether voluntarily or as a result of other laws. An average fuel-economy standard is simply "a *minimum* level of average fuel economy applicable to a manufacturer in a model year." *Id.* § 32901(6) (emphasis added). Nothing in EPCA makes it a violation for an automaker to exceed the minimum required standard. Thus, there can be no inconsistency between this standard and a state law that has the effect of improving fuel economy. State emission standards or other state laws that have the effect of *improving* average fuel economy do not conflict with federal minimum fuel economy standards because they do not intrude upon NHTSA's prerogative to decide the appropriate level ("the maximum feasible average fuel economy level," 49 U.S.C. § 32902(a) at which to set those standards. Improvement in average fuel economy does not frustrate any countervailing purpose of EPCA.

Moreover, statutory constraints ensure that NHTSA does not--indeed, cannot--evaluate the level of average fuel economy that is truly “maximum feasible.” For one thing, Congress blinded NHTSA to the improvements in a manufacturer’s average fuel economy level from sales of vehicles that use fuels other than gasoline or diesel. 49 U.S.C. § 32902(h)(1), (2); *see also id.* § 32901(1), (2), (8), (9), (10). EPCA establishes a weighting system to incentivize manufacturers to develop and sell vehicles using alternative fuels, including electric vehicles. *Id.* §§ 32904(a)(2), 32905. When setting average fuel-economy standards, NHTSA must ignore those vehicles and credits that accrue to automakers that choose to deploy them. *Id.* §§ 32902(h)(3), 32903. As a result of these statutory constraints, an automaker may drop below the “minimum” standards that NHTSA sets for gas- and diesel-powered vehicles without accruing any penalty. *Id.* § 32901(6).

To understand how all this relates to preemption, one need look no further than California’s ZEV mandate. A requirement that manufacturers produce a minimum volume of vehicles that consume no fuel will increase *actual* fuel economy--because ZEVs add “miles traveled” but not “gallon[s] of gasoline (or equivalent amount of other fuel) used,” 49 U.S.C. § 32901(11)--but it cannot affect NHTSA’s average fuel-economy *standard*. For purposes of calculating its standard, NHTSA must counterfactually assume a world in which all vehicles sold are powered exclusively by gasoline or diesel fuel. *See id.* § 32902(h). A state law addressed solely to vehicles powered by other means is not “related to” that world at all and thus cannot be preempted by EPCA.⁶⁰¹ *Id.* § 32919.

Title II of the CAA does not impose comparable statutory constraints. EPA under Section 202(a) and California under Section 209(b) of that Act establish maximum levels of air-pollutant emissions for *all* new motor vehicles, regardless of power source. Advanced clean cars reduce (drastically, in some cases) levels of emissions of CO₂ and other GHGs as compared to vehicles powered solely by gasoline and diesel fuel. But that “pool of technologies” is not available to NHTSA as a way to boost average fuel-economy standards. 83 Fed. Reg. 43,234. As advanced clean cars come to dominate the new-automobile market, NHTSA’s average fuel-economy standard will, absent legislative change, become more and more decoupled from any GHG emission standard set by EPA or California. *See* M.J. Bradley & Assocs., *New Vehicle GHG Emissions Estimates Under Deep Decarbonization Strategies* (Oct. 2018).

That is precisely what Congress hoped for when it introduced weighted fuel economy and credits for advanced clean cars into EPCA. The definition of an “automobile” in the original statute in 1975 was restricted to gas- and diesel-powered vehicles. 15 U.S.C. § 2001(1), (5). EPCA thus plainly did not preempt state regulation of vehicles powered by other means. In 1980, Congress added electric vehicles to the EPCA regime for the sole purpose of promoting “industrial engineering development and initial commercialization of electric vehicles.” Pub. L. No. 96-185, § 18, 93 Stat. 1336, *codified at* 15 U.S.C. § 2512(c) (1982). NHTSA was not allowed to account for electric vehicles when setting an average fuel-economy *standard*, but electric

⁶⁰¹ Even the requisite calculation of “fuel” economy for vehicles that do not burn fuel (*i.e.*, electric vehicles) decouples fuel economy from actual well-to-wheel emissions of those vehicles. *See* 49 U.S.C. § 32904(a)(2)(B). To the extent the “common measurement” argument in the notice of proposed rulemaking has any legs (which it does not, for reasons explained elsewhere), the argument clearly does not apply for the nontraditional vehicles encouraged by the Advanced Clean Cars program.

vehicles would count toward a manufacturer's *actual* average fuel economy following application of an "equivalent petroleum based fuel economy" factor calculated by the Department of Energy. 49 U.S.C. § 32904(a)(2)(B). *See* 10 C.F.R. § 474.3. In 1988, EPCA was further amended to add vehicles powered by fuels with lower carbon content--methanol, ethanol, and natural gas--to the calculation of actual average fuel economy. Pub. L. No. 100-494, § 6, 102 Stat. 2448, *codified at* 15 U.S.C. § 2513 (1988). A series of other amendments added other fuels to the mix. *See* 49 U.S.C. § 32901(1) (current definition of "alternative fuel").

"The purpose of Congress is the ultimate touchstone' in every preemption case," *Medtronic, Inc. v. Lohr*, 518 U.S. 470, 485 (1996) (citation omitted), and Congress's singular purpose in the acts that added advanced clean cars onto the CAFE program was to incentivize their deployment. California's Advanced Clean Cars program obviously furthers that purpose and thus is not preempted by the Act.

f. The same preemption analysis applies to California emission standards for any pollutant.

The notice of proposed rulemaking seems to suggest that the EPCA preemption analysis applies differently to GHG emission standards because EPCA was originally enacted "at a time when only conventional pollutants were regulated." 83 Fed. Reg. 43,237. There is no reason to think that GHG emission standards bear a closer "relat[ion] to" average fuel-economy standards than do emission standards for conventional pollutants. Both classes of standards may affect the maximum feasible average fuel-economy level for automakers in a given model year, as Congress recognized when it established the interim-relief and "other motor vehicle standards of the Government" provisions of EPCA.

Nothing in the text or history of EPCA even hints at a distinction in the way that Section 32919 applies to emission standards for different pollutants. The "sweeping definition of 'air pollutant'" in Section 202(a) of the CAA "embrace[d] all airborne compounds of whatever stripe," *Massachusetts*, 549 U.S. at 529, beginning in 1970, so Section 209(b)--which encompasses "emission standards" of whatever stripe--"always" had authorized EPA to issue preemption waivers to California for GHG emission standards, notwithstanding that the Supreme Court only "finally decided" that issue after EPCA was enacted. *Rivers v. Roadway Express, Inc.*, 511 U.S. 298, 313 n.12 (1994). *See generally DIRECTV, Inc. v. Imburgia*, 136 S. Ct. 463, 469 (2015) (observing that a "judicial construction of a statute ordinarily applies retroactively").

There is, moreover, contemporaneous evidence that legislators understood when they originally carved out the Section 209(b) preemption waiver that CO₂ was a pollutant whose motor-vehicle emissions could be controlled by EPA and/or California. *See* S. Rep. 90-403, at 18 (1967) (listing "carbon dioxide" as a pollutant subject to regulation under the CAA). Regardless, in 2007, months after the Supreme Court clarified that GHGs were pollutants subject to regulation under the CAA, Congress substantially amended EPCA without changing the scope of Section 32919 or otherwise suggesting that GHG emission standards promulgated by California would be preempted by EPCA.

g. EISA confirms that GHG emission standards with a preemption waiver under Section 209(b) are not preempted by EPCA.

In 2007, Congress substantially amended EPCA through the Energy Independence and Security Act, Pub. L. No. 110-140, but made no change in EPCA's preemption provision. In fact, Congress *rejected* proposed amendments that would have abrogated the Supreme Court's recent decision in *Massachusetts v. EPA*--which had rejected claims that EPCA displaces EPA authority to set GHG emission standards--and expanded the scope of Section 32919 so as to preempt California emission standards for GHGs. Instead, Congress adopted a savings clause that expressly preserved preexisting regulatory authority over GHGs provided by, among other things, Section 209(b) of the CAA. *See* Pub. L. No. 110-140, § 3 ("Except to the extent expressly provided in this Act or an amendment made by this Act, nothing in this Act or an amendment made by this Act supersedes, limits the authority provided or responsibility conferred by, or authorizes any violation of any provision of law (including a regulation), including any energy or environmental law or regulation."); *see also id.*, § 210(b), *codified at* 42 U.S.C. § 7545(o)(12) (preserving "the regulatory status of carbon dioxide or any other greenhouse gas" under the CAA).

As further explained in the comments of Professor Gregory Dotson, EISA's savings clause marked the definitive failure of a sustained effort by the George W. Bush Administration and many legislators to revoke California's authority to establish GHG emission standards through amendments to EPCA. The EISA amendments thus reaffirmed the policy in preexisting law, upheld in the Supreme Court's and the decisions of the only two district courts to have addressed the question, that California may regulate GHG emissions from vehicles with a Section 209(b) waiver. Reflecting this ongoing policy, EISA added a provision for federal fleet procurement that generally required acquisition of vehicles that are "low greenhouse gas emitting vehicle[s]," 42 U.S.C. § 13212(f)(2)(A), a term that Congress defined by reference to "the *most stringent standards* for ... greenhouse gas emissions applicable to and enforceable against ... manufacturers for vehicles sold anywhere in the United States." *Id.* § 13212(f)(3)(B) (emphasis added). Had Congress intended to preempt California's GHG emission standards under that same law, there would only have been *one* possible standard for GHG emissions in the United States—the standard issued by EPA.

h. Fuel economy and GHG emissions are not functional equivalents.

The proposed rule incorrectly states that "fuel economy and tailpipe CO₂ emissions [are] two sides of the same coin." 83 Fed. Reg. 43,209. First of all, California's emission standards encompass more than tailpipe CO₂ emissions; they cover GHG emissions generally, as well as nonfuel (ZEV) vehicles. In any event, while it is true that reduction in fuel consumption is a reliable way to reduce tailpipe CO₂ emissions, reducing fuel consumption has never been the sole means of reducing those emissions, and the suite of options for reducing CO₂ and other GHG emissions continues to expand well beyond technologies that improve fuel economy.

The notice of proposed rulemaking acknowledges as much when it concedes that "regulating the carbon intensity of fuels" is "not preempted by EPCA." 83 Fed. Reg. 43,234 n.507. Carbon intensity decouples GHG emissions from fuel consumption and belies the assertion in the notice of proposed rulemaking that the two are "functional equivalent[s]." *Id.* at 43,236. For instance,

powering a diesel-powered vehicle with biodiesel blends, as opposed to traditional diesel fuel, can increase tailpipe GHG emissions (and decrease lifecycle GHG emissions) without significantly affecting fuel economy. See Thomas Durbin et al., CARB Assessment of the Emissions from the Use of Biodiesel as a Motor Vehicle Fuel in California: Biodiesel Characterization and NOx Mitigation Study, at xl (Oct. 2011). A switch from traditional diesel to renewable diesel would have an even more profound difference in impact on GHG emissions and average fuel-economy standards, as tailpipe emissions from renewable diesel would be offset by the absorption of CO₂ by feedstock plants or algae used to make the diesel; the emissions would result from upstream processes such as fertilizing and growing the feedstock and transforming it into a fuel. These facts undermine the assertion in the notice of proposed rulemaking that the fuel economy and CO₂ emission standards are “directly correlate[d],” 83 Fed. Reg. 43,234.⁶⁰²

It is also possible to reduce GHG emissions from gasoline without a corresponding reduction in fuel economy. In fact, EPA’s Tier 3 motor vehicle emission and fuel standards, adopted in 2014, lower CO₂ tailpipe emissions while at the same time consuming *more* fuel as compared to the previous Tier 2 standards. The prospect that tighter emission controls enacted by EPA or California might *reduce* maximum feasible fuel-economy standards therefore is not a “limited concern[.]” unique to the era in EPCA was enacted. 83 Fed. Reg. 43,237. *Contra id.* at 43,238 (“If a state were to establish standards that have the effect of requiring a lower level of fuel economy than CAFE standards, those standards would be meaningless since they would not reduce CO₂ emissions.”).

Switching from gasoline to diesel fuel also yields a differential impact on fuel economy and vehicle GHG emissions. Diesel is a more carbon-intensive fuel than gasoline, but diesel engines achieve significantly better fuel economy than gasoline engines. See 45 Fed. Reg. 5506 (Jan. 23, 1980) (“[I]t is EPA’s technical judgment that fuel economy potential is the overwhelming reason for any manufacturer to investigate Diesel engine technology.”). Once again, GHG emissions--even tailpipe CO₂ emissions specifically--are not functionally equivalent to fuel economy, much less the average fuel-economy *standard* referenced in Section 32919.

There are multiple ways to comply with California’s GHG emission standard that do not impact fuel consumption at all. For example, automakers can make substantial progress toward meeting the state standard by reducing air-conditioning refrigerant leakage and using alternative refrigerants with lower global-warming potential. See 77 Fed. Reg. 62,649-67. Such improvements “reduce GHGs but do not affect fuel economy.” *Id.* at 62,639. Methane emissions vary not only with fuel composition but also the quantity of uncombusted hydrocarbons passing through the engine and the application of post-combustion controls like catalytic converters. *Id.* at 62,770. Nitrous oxide emissions depend on the type of vehicle,

⁶⁰² Other examples abound. Vehicles fueled by compressed natural gas have comparable fuel economy but substantially lower tailpipe GHG emissions relative to gas-powered vehicles. 77 Fed. Reg. 62,815-16. And vehicles running on ethanol blends like E85 have lower fuel economy but also lower GHG emissions when considering lifecycle emissions. See U.S. Dep’t of Energy, Alternative Fuels Data Center, Ethanol Vehicle Emissions, *available at* https://www.afdc.energy.gov/vehicles/flexible_fuel_emissions.html (last visited Oct. 25, 2018); Michael Wang et al., *Well-to-Wheels Energy Use and Greenhouse Gas Emissions of Ethanol from Corn, Sugarcane, and Cellulosic Biomass for U.S. Use*, 7 *Envtl. Research Letters* 045905 (2012).

driving conditions, catalyst temperature, and emission-control technologies. *Ibid*; see also Arthur M. Winer et al., *Estimates of Nitrous Oxide Emissions from Motor Vehicles and the Effects of Catalyst Composition and Aging* 8-1 (2005). The notice of proposed rulemaking concedes that methane and nitrous oxide emissions “do not impact fuel economy.” 83 Fed. Reg. 43,197 n.380.

These other GHGs are emitted in lower quantities than CO₂, but they have an outsized impact on public health and welfare due to their greater global warming potential. For example, HFC-134a, a common air-conditioning refrigerant, carries a global warming potential (GWP) 1,430 times that of CO₂. From NHTSA’s perspective, however, non-CO₂ GHG emissions have a much smaller effect on the average fuel-economy standard, which is not correlated to global warming potential. See 83 Fed. Reg. 43,209.

Onboard carbon capture and storage (CCS) is a hypothetical technology meant to capture a vehicle’s CO₂ emissions at the site of combustion. Although that technology is in early stages of demonstrating feasibility, researchers have estimated that a vehicle with employing on-board CCS technology could reduce CO₂ emissions by 20 percent independent of fuel economy. Brandon Schoettle et al., *An Overview of CAFE Credits and Incorporation of On-Board Carbon Capture* (2014). In 2017, Fiat-Chrysler Automobiles (FCA) entered into an agreement with an oil and gas company to explore “technologies and devices for the capture and temporary storage of part of CO₂ produced by internal combustion engines.” Green Car Congress, *Eni, FCA Partner on R&D to Cut Road Vehicle CO₂ Emissions; Methanol/Ethanol Blends, Renewable Diesel, ANG, On-Board CO₂ Capture* (2017). Though still theoretical, such technologies illustrate that automakers are seeking alternative compliance pathways in which CO₂ emissions reductions are completely detached from fuel economy.

More broadly, there are several ways that automakers and policymakers can alter the carbon intensity of *driving* without a corresponding change in the maximum feasible average fuel-economy level. An example is deployment of non-fuel vehicles like electric vehicles (EVs), whose tailpipe GHG emissions are nil but whose CAA-compliance emissions are primarily the result of upstream electricity generation. The proposed rule incorrectly--and contrary to the facts on the ground--states that it is not feasible for auto manufacturers to now deploy zero-emission vehicles (ZEVs), and it does not dispute that GHG emissions can thereby be decoupled from fuel economy. EPCA itself acknowledges as much by prescribing a multi-factor balancing test—including nonquantitative considerations like “the need of the United States to conserve all forms of energy and the relative scarcity and value ... of all fuel used to generate electricity,” 49 U.S.C. § 32904(a)(2)(B)(iii)—that the Department of Energy uses to translate “fuel economy” for electric vehicles.

For non-EVs, EPA’s “equivalent” fuel-economy calculation under EPCA does not account for any upstream emissions (emissions associated with the production, processing, and transport of fuels) or upstream GHG absorption (by feedstock plants and algae as they grow), whereas those lifecycle emissions are of primary importance for compliance with EPA and California GHG emission standards. It is the lifecycle emissions of a fuel that matter for mitigating pollution. See 77 Fed. Reg. 62,890. A reduction in purely upstream emissions is thus another means to comply with California’s GHG emission standards without impacting average fuel economy.

i. California’s ZEV program is not preempted for the additional reason that it is and has long been targeted to reductions in emissions of criteria pollutants.

The notice of proposed rulemaking bases its conclusions on preemption on a distinction between California standards designed to reduce emissions of GHGs as opposed to criteria pollutants. That is an unwarranted distinction, for reasons already discussed, but even if the distinction were valid, the ZEV mandate still would not be preempted. The mandate has been in place since 1990, long before California proposed to regulate GHG emissions. (Indeed, Congress first used EPCA to incentivize EVs in 1980, as discussed earlier.) The ZEV mandate is and always has been expressly targeted to criteria pollutants. Tying the ZEV mandate to regulation of tailpipe CO₂ emissions is thus anachronistic in addition to being wrong as a matter of law. The mandate did not suddenly become preempted under EPCA when California began to regulate emissions of *other* pollutants (GHGs) also impacted by the mandate. Put another way, California’s decision to regulate emissions of additional air pollutants had no impact at all on whether a preexisting state law “relate[d] to” average fuel-economy standards set by NHTSA. 49 U.S.C. § 32919.

j. NHTSA’s conclusions on conflict preemption are speculative and premature.

Any determination of preemption under EPCA is also premature. Conflict preemption—the only form of implied preemption that NHTSA has invoked—depends on “the relationship between state and federal laws as they are interpreted and applied, not merely as they are written.” *Jones v. Rath Packing Co.*, 430 U.S. 519, 526 (1977). The notice of proposed rulemaking does not dispute that California’s Advanced Clean Cars program is now interpreted and applied consistent with federal law as part of the One National Program begun in 2010. Unless and until the law changes and an actual conflict arises *in practice*, there is no basis upon which NHTSA (or EPA) could conclude that California’s program is impliedly preempted. Although it is true that the final rule could introduce a conflict in theory, the proposed rule’s prejudgment of such a conflict is improper and further shows that the agencies are more concerned with eliminating California’s existing waiver under Section 209(b) of the CAA as a policy matter than they are with sensitivity to the federalism concerns inherent in any preemption analysis—especially one conducted after the relevant state laws have been in place for several years.

VI. Finalizing this proposal is arbitrary and capricious for additional reasons.

A. The agencies are statutorily prohibited from imposing artificial constraints on their feasibility and cost analyses

In an error common to both the GHG and CAFE standards, the Proposal frequently considers and determines “feasibility” under 49 U.S.C. § 32902 and the “cost of compliance” under 42 U.S.C. § 7521(a)(2) not with reference to what manufacturers are *actually* capable of achieving, but with reference to what the agencies determine manufacturers will do in practice if left to their own devices. Thus, for example, the Proposal generally does not consider how manufacturers could plausibly alter their behavior to comply with stricter standards, is based on models whose assumptions do not permit manufacturers (as described in the Volpe model) to seek compliance through cost-effective technology pathways, *see* Comment of Union of Concerned Scientists;

Attorneys General of California, Connecticut, Delaware, Hawaii, Iowa, Illinois, Maine, Maryland, Minnesota (by and through its Minnesota Pollution Control Agency), North Carolina, New Jersey, New Mexico, New York, Oregon, Rhode Island, Vermont, and Washington, the Commonwealths of Massachusetts, Pennsylvania, Virginia, and the District of Columbia, and City Attorneys/Corporation Counsel of the Cities of Oakland, Los Angeles, San Francisco, San Jose and New York

December 21, 2018

Submitted via electronic delivery

Letter with copy of report submitted via overnight mail to EPA, NHTSA and OIRA

Docket IDs: NHTSA-2018-0067; NHTSA-2017-0069; EPA-HQ-OAR-2018-0283; RIN: 2127-AL76; RIN 2060-AU09 / Additional Comments re Fourth National Climate Assessment

Subsequent to the close of the comment period on the United States Environmental Protection Agency's ("EPA") and the National Highway Traffic Safety Administration's ("NHTSA") (together, the "Agencies") Proposed "SAFE" Vehicles Rule for Model Year 2021-2026 Passenger Cars and Light Trucks, 83 Fed. Reg. 42,986 (Aug. 24, 2018) (the "Proposed Rollback" or "Proposal"), the federal government published the second volume of a comprehensive climate report. *See* U.S. Global Change Research Program, "Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II," (D.R. Reidmiller et al. eds., 2018), <https://nca2018.globalchange.gov/> (the "Assessment"). The undersigned State Attorneys General, City Attorneys and Corporation Counsel wrote Acting Administrator Wheeler on December 11, 2018 requesting withdrawal of the Proposed Rollback in light of the Assessment's findings (letter enclosed). We asked that, at a minimum, the comment period for the proposed rule be reopened so that the implications of the Assessment's findings could be adequately considered.

In our December 11 letter, we further stated our intent to submit a copy of the Assessment to the rulemaking docket for the Proposed Rollback, which we are doing through this letter.¹ This letter also highlights aspects of the Assessment that support or are relevant to points made in our comments dated October 26, 2018 (the "October Comments"). Under the Clean Air Act, the Assessment must be included in the rulemaking docket because it is of "central relevance" to the Proposed Rollback. *See* 42 U.S.C. § 7607(d)(4)(B)(i) ("All documents which become available after the proposed rule has been published and which the Administrator determines are of central relevance

¹ A PDF of the Assessment exceeds the file size limit on regulations.gov. Therefore, we are submitting an electronic copy of the Assessment on DVD, which is being sent via overnight mail to the addresses provided in the above referenced rulemaking dockets.

and investments made by the United States and increas[e] the need for humanitarian assistance and disaster relief.”).

- The Assessment also observes that “[t]he impacts of climate change, variability, and extreme events outside the United States are affecting and are virtually certain to increasingly affect U.S. trade and economy, including import and export prices and businesses with overseas operations and supply chains.” Assessment at 608.⁵

As discussed in our October Comments, the Proposed Rollback’s Social Cost of Carbon figures are far too low, and the use of an appropriate measure of the Social Cost of Carbon—even the federal government’s prior conservative estimates—completely changes the cost-benefit analysis of the Proposed Rollback, and reaffirms the conclusion of EPA’s January 2017 Mid-Term Evaluation: the current standards should be kept in place or made more stringent.

G. The Assessment Clearly Identifies Compelling and Extraordinary Conditions California Faces from Climate Change

In our October Comments, we described the many grounds on which EPA’s proposal to revoke California’s waiver for its GHG and Zero Emission Vehicle (“ZEV”) standards for model years 2021-2025 is unlawful and should be withdrawn, including EPA’s lack of legal authority to revoke a waiver and, even assuming EPA had such authority, the lack of support for its changed interpretations and proposed findings. October Comments, at 117-30. The Assessment underscores the point, contradicting EPA’s proposed findings. The facts compiled by EPA, twelve other government agencies, and more than 300 experts in the Assessment provide ample evidence that California faces “compelling and extraordinary conditions” from climate change, including those highlighted below.

Heat Wave Risk and Associated Health Impacts

The most immediate threat to health from climate change is from heat waves. The Assessment finds that “[e]xposure to hotter temperatures and heat waves already leads to heat-associated deaths in Arizona and California. Mortality risk during a heat wave is amplified on days with high levels of ground-level ozone or particulate air pollution.” Assessment at 1104. “In the unprecedented 2006 California heat wave, which affected much of the state and part of Nevada, extremely high temperatures occurred day and night for more than two weeks. Compared to non-heat wave summer days, it is estimated that the event led to an additional 600 deaths, 16,000 emergency room visits, 1,100 hospitalizations in California, and economic costs of \$5.4 billion (in 2008 dollars).” *Id.* at 1129.

⁵ For example, the Assessment notes that in 2010-11, “drought in Russia, Ukraine and the United States and damaging precipitation in Australia” resulted in “reduction in wheat production,” which “contributed to a spike in global wheat prices ... increasing the cost of flour and bread in the United States.” *Id.*

Wildfire and Infestations

The Assessment's review of the impact of wildfire, while extensive, is already outdated, because it does not include the tragic November 2018 Camp, Woolsey and Hill fires. California's Department of Insurance estimated that these fires have caused nearly 90 deaths, destroyed or damaged over 20,000 structures, and resulted in \$9 billion in insured losses to date.⁶ Still, the Assessment's review of wildfire data from 2017 is sobering. The Assessment notes that "[t]he costliest wildfires occurred in California, where more than 2,500 structures were destroyed by the Valley and Butte Fires; insured losses alone exceeded \$1 billion. In October 2017, a historic firestorm damaged or destroyed more than 15,000 homes, businesses, and other structures across California (see Figure 1.5). The Tubbs, Atlas, Nuns, and Redwood Valley Fires caused a total of 44 deaths, and their combined destruction represents the costliest wildfire event on record." Assessment at 68.

The Assessment finds that "[t]he duration of the season during which wildfires occur has increased throughout the western United States as a result of increased temperatures and earlier snowmelt." *Id.* at 241. As to the future, the Assessment concludes that action or inaction on GHG emissions will have a huge impact: "under a higher emissions scenario (SRES A2), climate change could triple the burned area (in a 30-year period) in the Sierra Nevada by 2100, while under a lower emissions scenario (SRES B1174), fire would only slightly increase." *Id.* at 1116.

In addition, the Assessment finds that climate change carries a second significant threat to forests. In California specifically, the five-year drought "weakened trees and enabled extensive bark beetle outbreaks, which killed 40 million trees across 7.7 million acres of Sierra Nevada forests through 2015 An additional 62 million trees died in 2016, and 27 million trees died in 2017, bringing the total to at least 129 million trees since 2010. This level of tree mortality in the Sierra Nevada is unprecedented in recorded history. In some of the most heavily impacted areas, 70% of trees died in a single year." *Id.* at 238.

Intensified Drought

The Assessment finds that higher temperatures from climate change "intensified the 2011-2016 drought" in California. *Id.* at 1111. The effects of that drought included "losses of more than 10,000 jobs and the fallowing of 540,000 acres (220,000 hectares), at a cost of \$900 million in gross crop revenue in 2015." *Id.* at 1127. In addition, "the severe drought in California, intensified by climate change, reduced hydroelectric generation two-thirds from 2011 to 2015." *Id.* at 1105. The effects of drought are not simply economic; as the Assessment finds, there are health impacts as well. "Households in two drought-stricken counties (Tulare and Mariposa) reported a range of drought-related health impacts, including increased dust leading to allergies, asthma, and other respiratory issues and acute stress and diminished peace of mind. These health effects were not evenly distributed, with more negative physical and mental health impacts

⁶ See Press Release from California Insurance Commissioner Dave Jones, dated December 12, 2018, <https://www.insurance.ca.gov/0400-news/0100-press-releases/2018/release142-18.cfm> (last visited, Dec. 13, 2018).

reported when drought negatively affected household property and finances.” *Id.*, at 544. In addition, “[d]rier conditions can increase reproduction of a fungus found in soils, potentially leading to the disease coccidioidomycosis, or Valley fever. Coccidioidomycosis can cause persistent flu-like symptoms, with over 40% of cases hospitalized and 75% of patients unable to perform their normal daily activities for weeks, months, or longer.” *Id.* As to the future, the Assessment projects that “much of the mountain area in California with winters currently dominated by snow would begin to receive more precipitation as rain and then only rain by 2050.” *Id.* at 1105.

Flood Risk

While increased temperatures intensify droughts and extend fire seasons, they also increase the risks of floods, as seen in California in 2016 and 2017. *Id.* at 1100. “Atmospheric rivers, which have caused many large floods in California, may increase in severity and frequency under climate change. In the winter of 2016–2017, a series of strong atmospheric rivers generated high runoff in northern California and filled reservoirs. At Oroville Dam, high flows eroded the structurally flawed emergency spillway, caused costly damage, and led to the preventive evacuation of people living downstream. In addition to the immediate threat to human life and property, this incident revealed two water supply risks. First, summer water supplies are reduced when protective flood control releases of water from reservoirs are necessary in the spring. Second, several studies have concluded that deteriorating dams, spillways, and other infrastructure require substantial maintenance and repair.” *Id.* at 1112-1113.

Sea Level Rise and Ocean Warming and Acidification

The effects of climate change on the Pacific Ocean present multiple significant threats to California, including warming, acidification, and deoxygenation that harm the ocean life that supports a vibrant ocean-based economy, and sea level rise along the State’s 3,400 miles of coastline that threatens homes and infrastructure.

To start, “California has the most valuable ocean-based economy in the country, employing over half a million people and generating \$20 billion in wages and \$42 billion in economic production in 2014.” *Id.* at 1107. That economy is already being impacted: “[h]armful algal blooms and shellfish contamination in the record warm year of 2015 delayed the commercially important Dungeness crab fishery, which contributed to a substantially reduced catch.” *Id.* at 1120. In addition, “one ecosystem modeling study suggests negative effects of projected ocean acidification on California’s state-managed crab, shrimp, mussel, clam, and oyster fisheries, but an increase in the urchin fishery.” *Id.* at 1121. And, “[r]educed oxygen could decrease rockfish habitat off southern California by 20% to 50%. Further deoxygenation may harm bottom-dwelling marine life, shrink open-water habitat for hake and other economically important species, and increase the number of invasions by squid.” *Id.*

The Assessment also recognizes that sea-level rise is well underway, noting that “[a]t the Golden Gate Bridge in San Francisco, sea level rose 9 inches (22 cm) between 1854 and 2016.” *Id.* at 1104. As to the future, the Assessment acknowledges California’s vulnerability: “The California coast extends 3,400 miles (5,500 km), with 200,000 people living 3 feet (0.9 m) or less above sea level. The seaports of Long Beach

and Oakland, several international airports, many homes, and high-value infrastructure lie along the coast. In addition, much of the Sacramento–San Joaquin River Delta is near sea level.” *Id.* at 1107. Among other things, “[s]ea level rise and storm surge could completely erode two-thirds of southern California beaches by 2100....” *Id.* at 1118.

Under any reasonable interpretation of the term, California faces “compelling and extraordinary” circumstances from the threat of climate change caused by GHG emissions.

H. The Assessment Confirms that Climate Change Worsens Existing Air Pollution Levels, Including Ozone and Particulate Matter

Our October Comments also highlighted EPA’s failure, particularly in its proposals to revoke California’s waiver and to reinterpret Section 177 to block other states from adopting California’s GHG standards, to acknowledge the connection between GHG standards, climate change, and the worsening of other air pollution. October Comments, at 127. Likewise, NHTSA failed to evaluate the interaction between GHG emissions and criteria pollutants in the air quality analysis of the DEIS. As we stated: “GHG-reducing standards, such as California’s GHG and ZEV standards, are also needed to address ozone-formation—the very kind of ‘local’ or ‘regional’ problem EPA asserts California may address It also underscores that California and the Section 177 States “need” GHG-reducing standards to address ‘local’ and ‘regional’ issues.” *Id.*

Here too, the Assessment confirms that GHGs and the climate change they cause exacerbate local or regional pollution problems, referred to in the Assessment as the “climate penalty.” Assessment at 518. As a general matter, the Assessment finds that “[u]nless counteracting efforts to improve air quality are implemented, climate change will worsen existing air pollution levels. This worsened air pollution would increase the incidence of adverse respiratory and cardiovascular health effects, including premature death. Increased air pollution would also have other environmental consequences, including reduced visibility and damage to agricultural crops and forests.” *Id.* at 513.

As to ground level ozone, the Assessment finds: “there is high confidence that climate change will increase ozone levels over most of the United States, particularly over already polluted areas, thereby worsening the detrimental health and environmental effects due to ozone.” *Id.* at 519. Among the areas where ozone is often highest are Southern California and the Section 177 States in the Northeast. *Id.* at 518. The “[a]dverse human health impacts associated with exposure to ground-level ozone include premature death, respiratory hospital admissions, cases of aggravated asthma, lost days of school, and reduced productivity among outdoor workers. Ozone pollution can also damage crops and plant communities, including forests, by reducing photosynthesis.” *Id.*

The Assessment also links climate change to a second “local” or “regional” pollutant, fine particulate matter. As EPA is well aware, California has multiple non-attainment zones for particulate matter. Here, the Assessment finds that “[t]here is *high confidence* that rising temperatures and earlier spring snowmelt will *very likely* result in lengthening the wildfire season in portions of the United States, leading to an increased frequency of wildfires and associated smoke. There is *very high confidence* that increasing exposure to wildfire smoke, which contains particulate matter, will increase

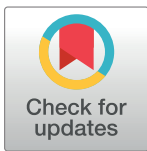
RESEARCH ARTICLE

Impacts of urban carbon dioxide emissions on sea-air flux and ocean acidification in nearshore waters

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Abstract

Greatly enhanced atmospheric carbon dioxide (CO₂) levels relative to well-mixed marine air are observed during periods of offshore winds at coastal sensor platforms in Monterey Bay, California, USA. The highest concentrations originate from urban and agricultural areas, are driven by diurnal winds, and peak in the early morning. These enhanced atmospheric levels can be detected across a ~100km wide nearshore area and represent a significant addition to total oceanic CO₂ uptake. A global estimate puts the added sea-air flux of CO₂ from these greatly enhanced atmospheric CO₂ levels at 25 million tonnes, roughly 1% of the ocean's annual CO₂ uptake. The increased uptake over the 100 km coastal swath is of order 20%, indicating a potentially large impact on ocean acidification in productive coastal waters.

Introduction

The increase in atmospheric carbon dioxide (CO₂) from the burning of fossil fuels has been well documented by decades of measurements from the top of Mauna Loa on the big island of Hawaii [1]. Keeling chose the iconic Mauna Loa site because it rises into the free troposphere that is less affected by local sources of carbon pollution. Oceanographers often use well-mixed atmospheric values from similar sites or global models to estimate the sea-air exchange of CO₂ [2]. Global flux estimates find the current ocean uptake to be about two petagrams (two billion tonnes) of carbon per year [2,3]. This steady uptake of atmospheric CO₂ by the oceans results in the so-called phenomenon of ocean acidification [4]. However, studies of atmospheric CO₂ concentrations in urban environments have shown considerable enhancements of CO₂ in city centers, especially in the early morning [5,6,7], an effect known as the urban CO₂ dome. Agricultural practices can also impact local atmospheric CO₂ on a diurnal cycle with large nighttime increases due to respiration and daytime decreases associated with photosynthesis [8,9]. Near coastlines these elevated levels of CO₂ might impact marine air via atmospheric circulation and therefore increase the flux of CO₂ into nearshore waters enhancing ocean acidification. Here we present novel observations from nearshore moorings and an autonomous sea surface vehicle that show the magnitude of urban CO₂ pollution and allow us to calculate the contribution to sea-air fluxes from this previously unquantified source.

The diurnal cycles in CO₂ concentration over urban environments has been shown to peak just before sunrise at 4-5am and reach a minimum at around 4pm in the Los Angeles basin [7]. Modeling has shown similar CO₂ dome effects over the San Francisco and Monterey Bay areas [10]. However, little attention has been paid to the advection of these urban CO₂ domes over oceans and resulting impact on sea-air CO₂ flux. Monterey Bay is ideally situated for such observations, as large urban and agricultural areas in the Salinas and Silicon valleys are nearby, and a strong diurnally varying component in winds [11,12] can transport high levels of locally produced atmospheric CO₂ over the ocean. In the Monterey Bay Area the urban and agricultural CO₂ dome should reach its maximum concentrations at roughly the same time as the peak of the offshore phase of the diurnal wind cycle, leading to the advection of high CO₂ air from land sources over the coastal ocean.

As indicated above, traditional estimates of sea-air CO₂ flux are not able to quantify this nearshore phenomenon because they have a temporal or spatial scale that is too coarse to resolve these diurnally varying CO₂ anomalies. Therefore, the impact of a potentially significant source of atmospheric CO₂ on fluxes into the ocean has not previously been estimated. These impacts are magnified near urban or agricultural areas with strong offshore winds that can advect heavily polluted air over marine waters. Here we use high temporal resolution (1 hour over years) timeseries from multiple autonomous ocean based sensor platforms (moorings and surface vehicles) to provide a detailed assessment of the impacts of these high frequency variations in atmospheric CO₂ concentration on sea-air CO₂ fluxes in the nearshore environment.

Material and methods

Data sources

Data was collected from four different platforms operated by the Monterey Bay Aquarium Research Institute (MBARI) in the Monterey Bay region. Of these, three were moorings (OA1, OA2 and M1; Fig 1A) and one was an autonomous surface vehicle (Liquid Robotics Wave Glider [13]). All except M1 were outfitted with Airmar WX200 ultrasonic wind sensors which record wind speed and direction, Licor non-dispersive infrared gas analyzer CO₂ instruments which were developed to measure CO₂ concentrations in the air and water [13,14], and Seabird temperature and salinity sensors (herein CTD). M1 used an Aandara sonic anemometer together with the same CO₂ instrument and CTD. Measurements were averaged hourly in the final analysis. Wave glider measurements were taken within 5km of the Monterey Bay Time Series (MBTS) Line, a transect extending from Moss Landing out 50km along the Monterey canyon (Fig 1, red line). The moorings are located 1.5km offshore of Año Nuevo north of Santa Cruz, California (OA2), 300m off shore off of Monterey, California (OA1), and 20km offshore of Moss Landing, CA, in the center of the Monterey Bay (M1). The OA moorings are at 20 m and M1 at 1000 m depth. Wave glider data from station M, a station 220km offshore of San Luis Obispo, California (123 W 35.14 N) were also considered. Data were taken between 2013 and 2018, and all records were used, except in cases of dropout of CO₂ sensors, wind measurements, or CTD sensors. M1 recorded 1417 days of data between September 2013 and April 2018, OA1 recorded 853 days between January 2014 and July 2017, OA2 sampled 461 days between May 2015 and July 2017, and the wave glider recorded 182 days of measurements on the MBTS Line between March 2014 and March 2018.

Winds

An analysis of the phasing and length of offshore wind events was performed using the full 29 year M1 wind record. The east-west component of the winds was isolated, and binned by hour (Fig 2A). This analysis was run on both the full record, and by month to examine seasonal variations in the phasing and strength of land-sea breezes. While the strength of offshore winds

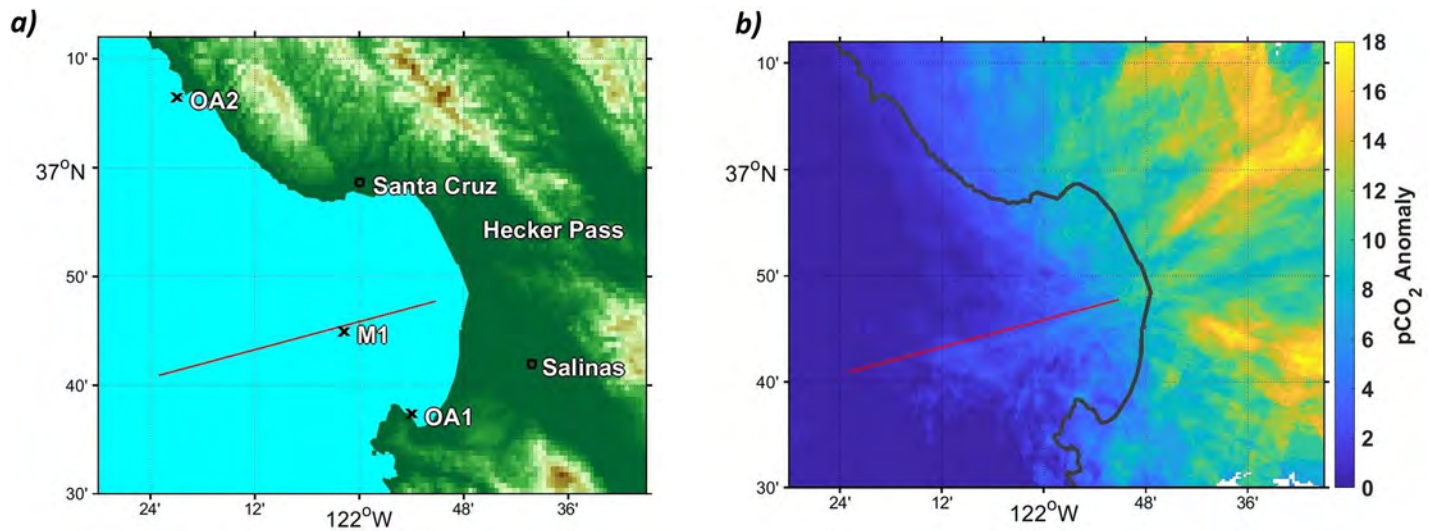


Fig 1. Location of data sources and predicted terrestrial sources of atmospheric CO₂ from wave glider data. a) Topography of the Monterey Bay area showing the location of platforms used in this study, as well as the Hecker pass and Salinas Valley, two major terrestrial sources of enhanced atmospheric CO₂ to Monterey Bay waters. The Monterey Bay timeseries (MBTS) line is also shown. b) Source regions for atmospheric CO₂ anomalies (the difference between well-mixed marine air and enhanced atmospheric CO₂; see “Anomaly Calculations” section in Methods) traced back from wave glider measurements along the MBTS Line (Fig 1A). Anomalies are particularly high in the Salinas Valley and Hecker pass areas. Anomalies are calculated for wave glider observations within 5km of the MBTS Line, and then propagated backwards for 6 hours along a path defined by wind direction and speed at the wave glider. A 5 degree uncertainty cone is drawn around the path, and all paths are averaged to yield the final figure. Coastline data republished from the Global Self-consistent, Hierarchical, High-resolution Geography Database (GSHHG) under a CC BY license, with permission from Dr. Paul Wessel, original copyright 1996.

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varied by month the phasing of the cycle did not. The number of hours of offshore wind (wind direction between 0 and 165 degrees) on each fully sampled day in the record was then calculated, and these results were binned by month (Fig 2B) to give a measure of the seasonality of the persistence of offshore wind.

Atmospheric CO₂ anomaly calculations

In this paper “atmospheric CO₂ anomaly” refers to a deviation of atmospheric CO₂ values from a baseline CO₂ concentration that reflects a well-mixed atmosphere. To calculate these baseline values, a rolling median filter was applied to CO₂ measurements with duration of 15 days for moorings and 4 days for the wave glider. The filter window for the wave glider data was used because the short mission durations and high mobility of the platform lead to poor estimates of baseline pCO₂ values when the full 15 day filter window was applied. CO₂ measurements taken when the wind was blowing from the open ocean for more than 3.5 hours were used to calculate baseline values to ensure that baselines were representative of well-mixed marine air CO₂ concentrations. This baseline was then subtracted from the timeseries of atmospheric CO₂ values to yield a timeseries of atmospheric CO₂ anomalies. Comparison of the baseline pCO₂ values with NOAA’s Global Greenhouse Gas (GHG) Reference Network [15] Trinidad Head station ($r^2 = 0.71$), as well as CarbonTracker [16] modeled values ($r^2 = 0.56$), showed good agreement. We used the calculated baseline pCO₂ values since these sources only run until December 2016 while our timeseries extends through early 2018.

CO₂ Fluxes

The net sea-air CO₂ flux was estimated using the equation:

$$FCO_2 = k * S * \Delta pCO_2 \quad (1)$$

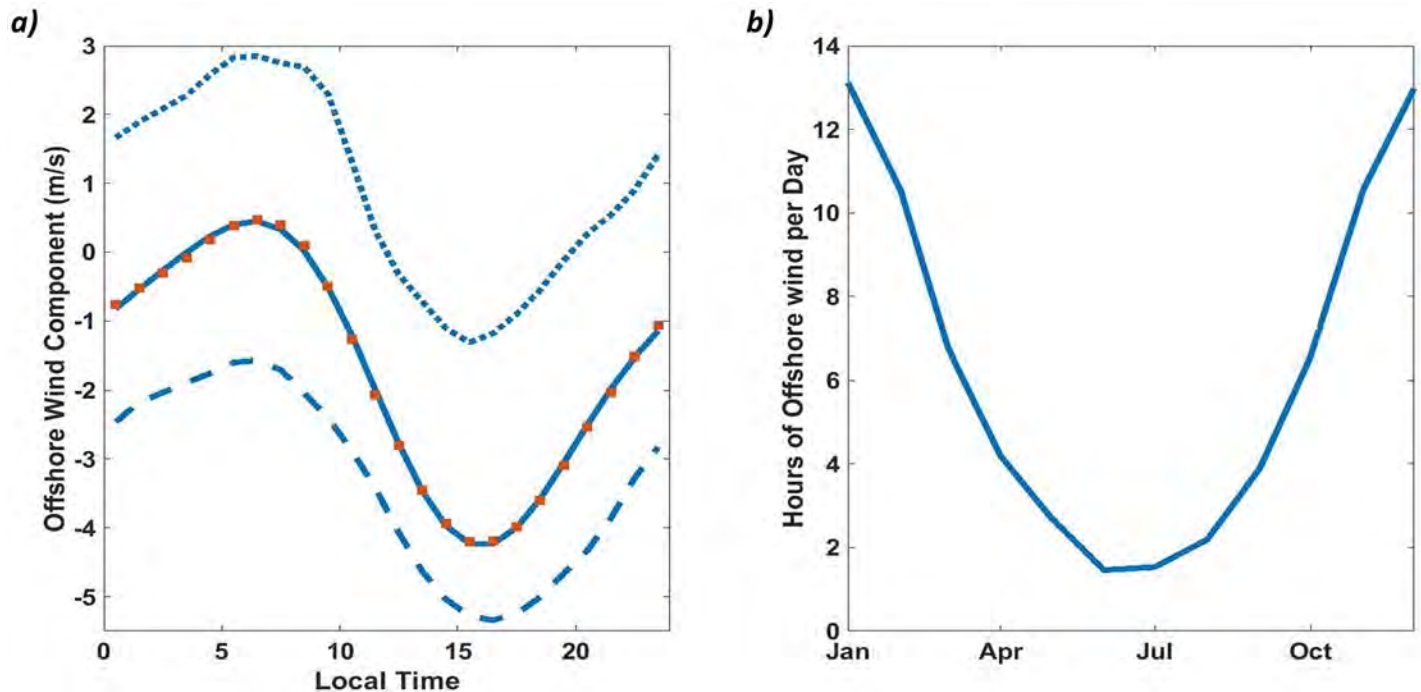


Fig 2. Diurnal and annual cycles of offshore winds at the M1 mooring. a) Offshore (easterly) component of winds at the M1 mooring (see Fig 1A for location) averaged hourly. Positive (negative) values represent offshore (onshore) winds. The dotted line shows January data, representing the seasonal peak in offshore wind duration and amplitude. The dashed line represents July winds, while red squares represent full year averages, and the solid line shows the best fit to this data. Maximum offshore winds are observed at 6-7am local time. Phasing of the fit remains consistent year-round. b) Duration of offshore (0–165 degrees) winds (hours) by month over the 29 year record from the M1 mooring. There is strong correlation between daily duration of offshore wind and sea-air fluxes driven by atmospheric CO₂ anomalies (see text).

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where k is the gas transfer velocity [17], S is the solubility of CO₂ in seawater [18] and $\Delta p\text{CO}_2$ is the difference between $p\text{CO}_2$ water and $p\text{CO}_2$ air. Gas transfer velocity is parameterized as a function of wind speed squared, while solubility is a function of water temperature and salinity. The common convention is used whereby a negative flux indicates CO₂ transfer into the ocean (a sink); while a positive flux indicates release of CO₂ into the atmosphere (a source).

Wave glider atmospheric CO₂ anomaly predictions

In order to construct a high resolution map of enhanced atmospheric CO₂ sources, anomalies were calculated for each wave glider data point. At ten minute intervals the wind speed and direction were then used to calculate the source position of the wind; this process was repeated additively over the six hours prior to any given air CO₂ measurement to construct a probable path for the measured air parcel. This method ignores local variation in wind direction and speed, mixing, and in particular excludes the effects of topography on offshore winds. In order to reduce these effects, all pixels within a five degree cone around the calculated path were assigned the value of the calculated anomaly, and added to the developing composite image containing all previous tracks. When complete the image was then divided by the number of tracks intersecting each pixel, producing an average map of probable atmospheric CO₂ anomaly sources and their strengths. This method should not be seen as providing exact locations or intensities of anomaly sources but it is straightforward and provides a general picture of the origin of strong atmospheric CO₂ anomalies.

Fluxes driven by atmospheric CO₂ anomalies

To estimate the contributions of the atmospheric CO₂ anomalies to sea-air fluxes, two flux calculations were made. The first used the well-mixed oceanic air baseline CO₂ concentrations calculated as described above. This dataset represents atmospheric CO₂ concentrations used in studies of sea-air flux that rely on modeled or well-mixed atmospheric CO₂ values. This time-series of fluxes was subtracted from a second timeseries calculated using the observed pCO₂ air concentrations. The difference between these two timeseries gives a measurement of flux due to our calculated atmospheric anomalies in air pCO₂. This method preserves the convention of negative values indicating increased transport of CO₂ into the ocean.

Results

Significant positive anomalies in atmospheric CO₂ are detected on all platforms during periods of offshore winds. A time series of atmospheric CO₂ from the OA1 mooring over 2014 and 2015 illustrates the extent of these anomalies (Fig 3). In Fig 3 a timeseries of atmospheric CO₂

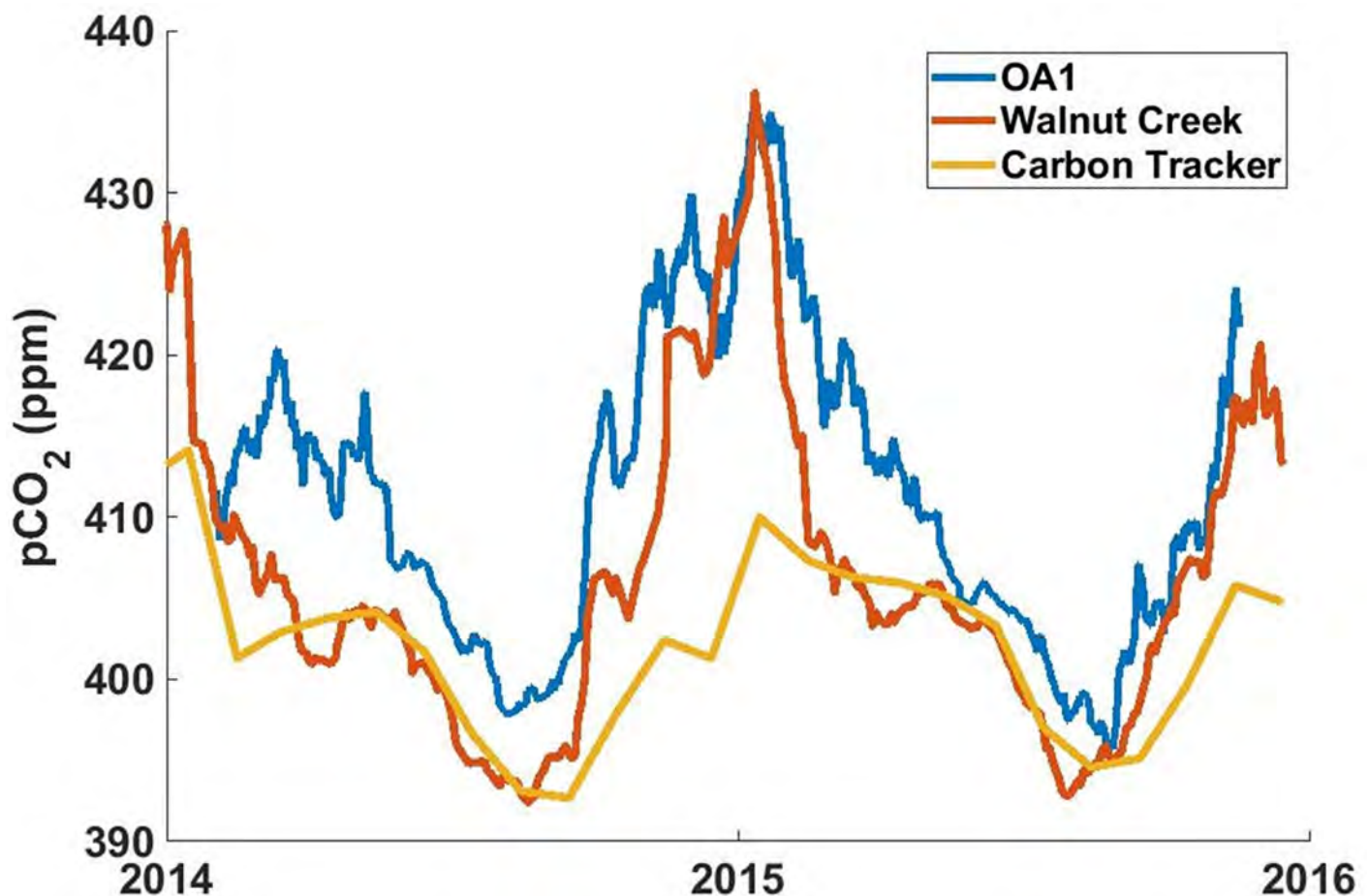


Fig 3. OA1 atmospheric pCO₂ vs nearby terrestrial measurements and modeled values. OA1 mooring atmospheric CO₂ plotted with atmospheric CO₂ data measured at the NOAA GMD tower network Walnut Creek station (WGC) (Andrews, Kofler, Bakwin, Zhao, & Trans, 2009) and monthly modeled CarbonTracker CT2016 CO₂ at OA1 (Peters, et al., 2007). Tick marks represent the beginning of each year. OA1 and Walnut Creek data include periods of large atmospheric CO₂ anomalies, and were smoothed with a 15 day moving average. The CO₂ concentration at OA1 tracks that from Walnut Creek, a nearby urban location, and both differ significantly from the model that represents well-mixed marine atmospheric CO₂ concentration. Atmospheric CO₂ data collected during long periods of onshore winds (not plotted) correlates well to the CarbonTracker modeled values ($r^2 = 0.56$).

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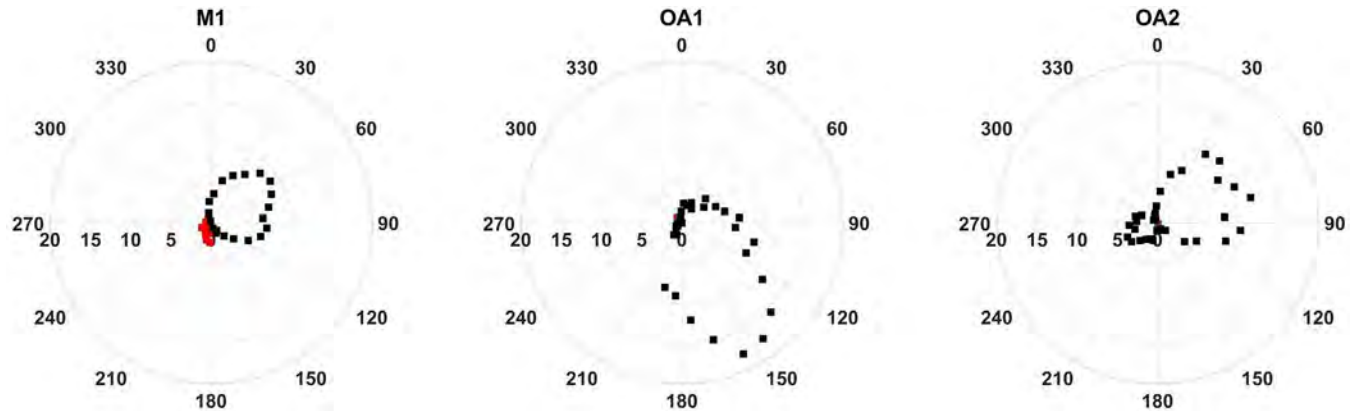


Fig 4. CO₂ atmospheric anomalies (ppm) at the moorings averaged by wind direction. Anomalies are calculated as deviations from a 30-day median filtered timeseries. Positive anomalies are in black, while negative anomalies are in red. Maximum positive atmospheric CO₂ anomalies are found at all moorings when winds originate over land. M1 shows a double peak in anomalies related to wind direction from Hecker Pass and Salinas Valley. OA1 is very nearshore, and displays the strongest anomalies from air originating from the city of Monterey directly to its south, with a secondary peak pointing eastward toward the Salinas valley. OA2 winds are prevailing from the ocean and display weak topographic amplification, resulting in smaller anomalies that originate from urban locations in Silicon Valley.

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from a nearby urban terrestrial station (Walnut Creek) [16] and clean marine air from Carbon Tracker [15] are plotted together with OA1. The similarity between OA1 and Walnut Creek is striking as are the mostly winter time increases in atmospheric CO₂ at both these sites relative to well-mixed marine air.

Using a basic advection model in conjunction with wave glider data (see [methods](#)) we found that the largest atmospheric CO₂ anomalies detected along the MBTS line originate from the Salinas valley and Hecker Pass ([Fig 1B](#)). These topographic features connect marine waters in the Monterey Bay region with large urban or agricultural areas inland and suggest that topography steers air with enhanced levels of CO₂ toward Monterey Bay. Hecker Pass represents a break in the mountains through which pollution from Silicon Valley can reach the coast, while the Salinas Valley contains urban centers and large agricultural fields. Binning atmospheric CO₂ anomalies measured at moorings by wind direction confirms sources at those locations. ([Fig 4](#)). The M1 mooring, which is situated at the center of the MBTS Line, shows a double peak in atmospheric CO₂ anomalies corresponding Hecker Pass (NE, 60 degrees) and the Salinas Valley (E, 100 degrees). OA1 is also impacted by CO₂ anomalies during periods of easterly winds from these topographic features. However, its largest anomalies are registered when winds blow from ~150 degrees. OA1 is situated only a few hundred meters north of the city of Monterey and the monthly averages at this buoy were much better correlated with the urban CO₂ measurements from Walnut Creek ($r^2 = 0.78$), than with Carbon-Tracker modeled atmospheric CO₂ ($r^2 = 0.47$) ([Fig 3](#)). This suggests that atmospheric CO₂ at OA1 is strongly influenced by air emanating from the city of Monterey. Meanwhile the largest atmospheric CO₂ anomalies at OA2 off Año Nuevo came from the northeast, directly from the Silicon Valley area ([Fig 4](#)).

Average anomalies at OA1 were close to double those at M1 during periods of offshore winds. This indicates a reduction in the strength of atmospheric CO₂ anomalies with distance from shore. The wave glider provides the perfect platform to further explore this relationship. Frequent wave glider measurements extend 50km out to the end of the MBTS Line, and average anomalies of 6-10ppm are detected at the end of this line during periods of offshore winds. This shows that during offshore wind events the plume of high CO₂ air extends at least 50km from shore, although its CO₂ content is reduced on average from the 15 ppm anomalies seen

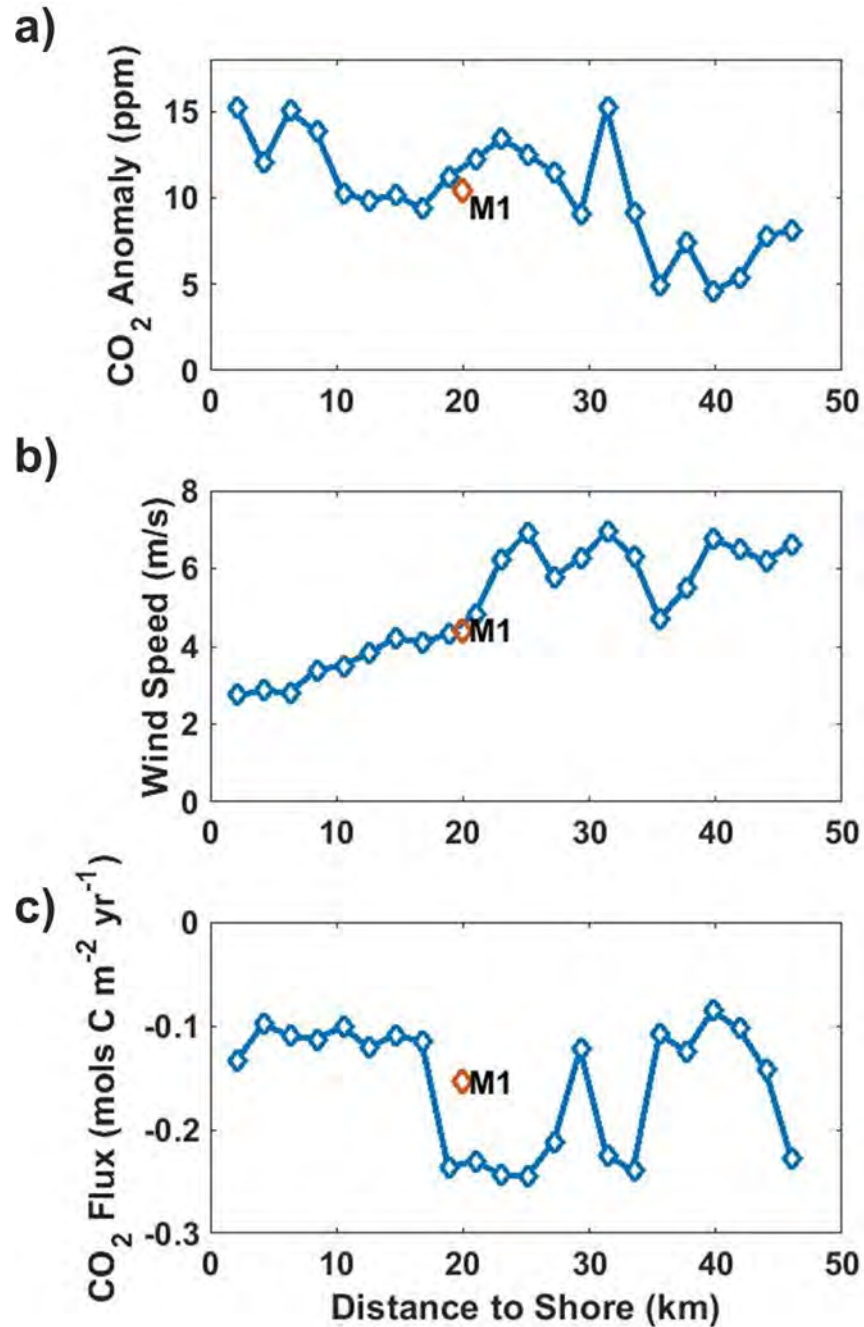


Fig 5. CO₂ anomalies, wind speed and sea-air flux anomalies along MBTS line and M1. MBTS Line wave glider and M1 measurements of (a) atmospheric CO₂ anomalies, (b) average wind speed, and (c) anomaly driven sea-air CO₂ flux, calculated during offshore wind events, and plotted against distance from shore. Anomalies are calculated by subtracting the median of persistent onshore winds. Sampling effort is biased toward the shoreward bins. A large increase in air-sea fluxes (negative flux values) is observed between 20 and 35 km offshore, driven by an increase in wind speeds with distance offshore. Meanwhile, CO₂ anomalies drop off with distance offshore. There is good agreement between the wave glider and M1 data even though these were collected over different time periods and at different resolutions.

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nearshore (Fig 5). An outer limit is seen on anomaly propagation when data from station M is considered. This station is 220km offshore and routinely occupied by the wave glider. No

significant atmospheric CO₂ anomalies associated with offshore wind events are detected at this location, with all reported anomalies being within the uncertainty of the sensor. Since enhanced CO₂ levels are transported offshore by diurnal land-sea breezes, the area in which these high CO₂ levels can be observed depends on the areal extent of the land-sea breezes. The strength of offshore winds in central California varies diurnally [11,12], and the average duration of an offshore wind event at M1 is relatively short at ~6 hours. Average offshore wind speeds were 4.4 m/s, so assuming CO₂ is transported offshore at that wind speed for the duration of an offshore wind event, anomalies should rarely be detected more than 100km from the coast. This agrees with more thorough modeling and remote sensing studies that have concluded that the seaward influence of diurnal land breezes extends roughly 100km offshore along much of the west coast of the United States [19,20].

Total sea-air fluxes varied widely across the study area, largely owing to upwelling processes. OA2 sits directly in the upwelling plume off Año Nuevo where water high in carbon dioxide is brought to the surface during upwelling [13,21,22]. As a result, CO₂ flux is large and positive in recently upwelled water indicating that freshly upwelled waters are a considerable source of atmospheric CO₂. M1 is downstream from the upwelling plume, in an area where phytoplankton have increased and via photosynthesis converted much of the upwelled carbon dioxide into organic carbon. As a result average fluxes are slightly negative in this area, indicating that on an annual basis M1 is a weak sink for carbon. Inside Monterey Bay and along the southern edge fluxes are increasingly negative as the slower circulation allows phytoplankton to bloom and further reduce pCO₂. OA1 and the MBTS Line average, which is weighted to the inshore environment owing to uneven sampling effort, reflect this greater sink of atmospheric CO₂ (Fig 6).

Sea-air CO₂ fluxes due to enhanced atmospheric CO₂ were similar across all platforms. The highest atmospheric CO₂ anomaly driven fluxes were recorded at M1, reaching 0.046 mol C m⁻² yr⁻¹. While atmospheric CO₂ anomalies were higher at OA1 owing to this mooring's close proximity to land and urban areas, a lower average offshore wind speed and a lower incidence of offshore winds reduced the effects of the higher atmospheric CO₂ on fluxes, resulting in an anomaly driven flux of 0.041 mol C m⁻² yr⁻¹. The total annual flux along the MBTS Line was 0.030 mol C m⁻² yr⁻¹. (Fig 6) Average fluxes were reduced over the whole line relative to M1 owing to very low wind speeds close to shore and a drop-off in anomalies beyond 35km from shore (Fig 5). OA2 recorded the lowest average anomalies, as well as the lowest percentage of offshore wind hours, but still displayed wind driven CO₂ flux anomalies of 0.019 mol C m⁻² yr⁻¹ (Fig 6). The averaged offshore profile of anomaly driven sea-air fluxes was dependent on both wind speed and atmospheric CO₂ anomalies, and was depressed inshore where wind speeds are low, and offshore where wind speed are high but atmospheric CO₂ anomalies are lower. The combination of these factors leads to a large increase in sea-air fluxes between 20 and 30 km offshore, where relatively stronger offshore winds combine with high atmospheric CO₂ anomalies (Fig 5).

Sea-air CO₂ fluxes due to atmospheric CO₂ anomalies undergo a strong seasonal cycle with increased offshore wind duration (Fig 2B) in the winter months driving larger and more frequent anomalies at all platforms. OA1 exhibits a particularly strong seasonal cycle, as strong wintertime storm winds are oriented to bring polluted air directly from the city of Monterey onto the buoy (Fig 7). At M1, where southerly storm winds come off the open ocean, a strong seasonal cycle is still present due to higher incidence of easterly and southeasterly offshores during the winter season. (Fig 2B)

Discussion

Studies of the role of the oceans in the global CO₂ budget often use low-resolution information on atmospheric CO₂ concentration to estimate sea-air CO₂ fluxes. Large scale models or

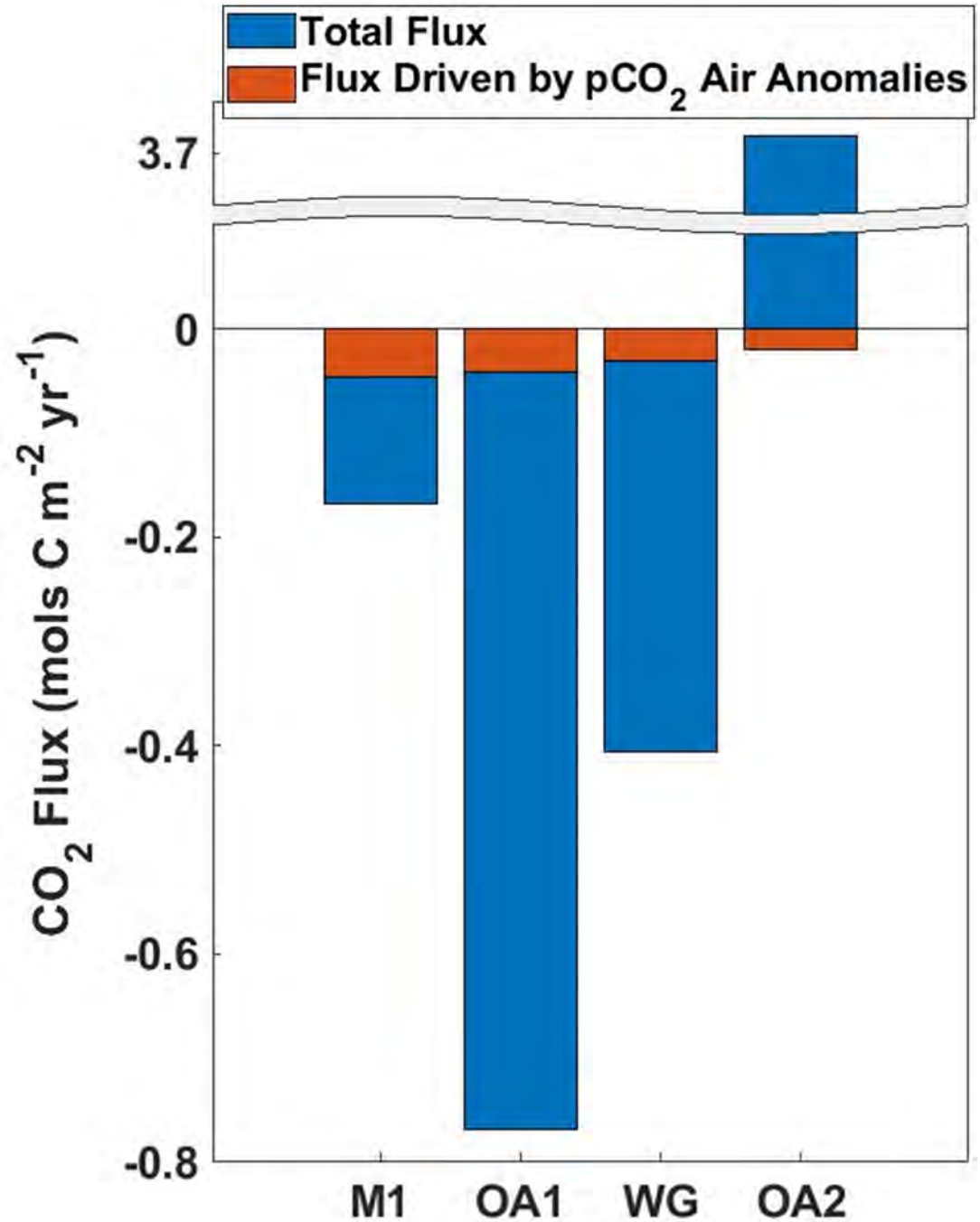


Fig 6. Yearly flux at all platforms. Sea-air CO₂ flux calculated using well mixed marine air (blue portion) together with that driven by enhanced atmospheric CO₂ (red portion) across all platforms. The striking spatial variability is evident, as is the relatively constant atmospheric CO₂ anomaly driven flux. Negative (positive) values represent uptake (loss) of CO₂ by the ocean. Increased transfer of CO₂ into the ocean due to anomalously high atmospheric CO₂ was estimated for all platforms.

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relatively few stations representative of well-mixed marine air concentrations are consistently used in flux calculations [2,23]. Observations from autonomous platforms in coastal California show that these clean air open ocean carbon dioxide concentrations are often not representative of carbon dioxide concentrations in the air nearshore. Nearshore areas experience

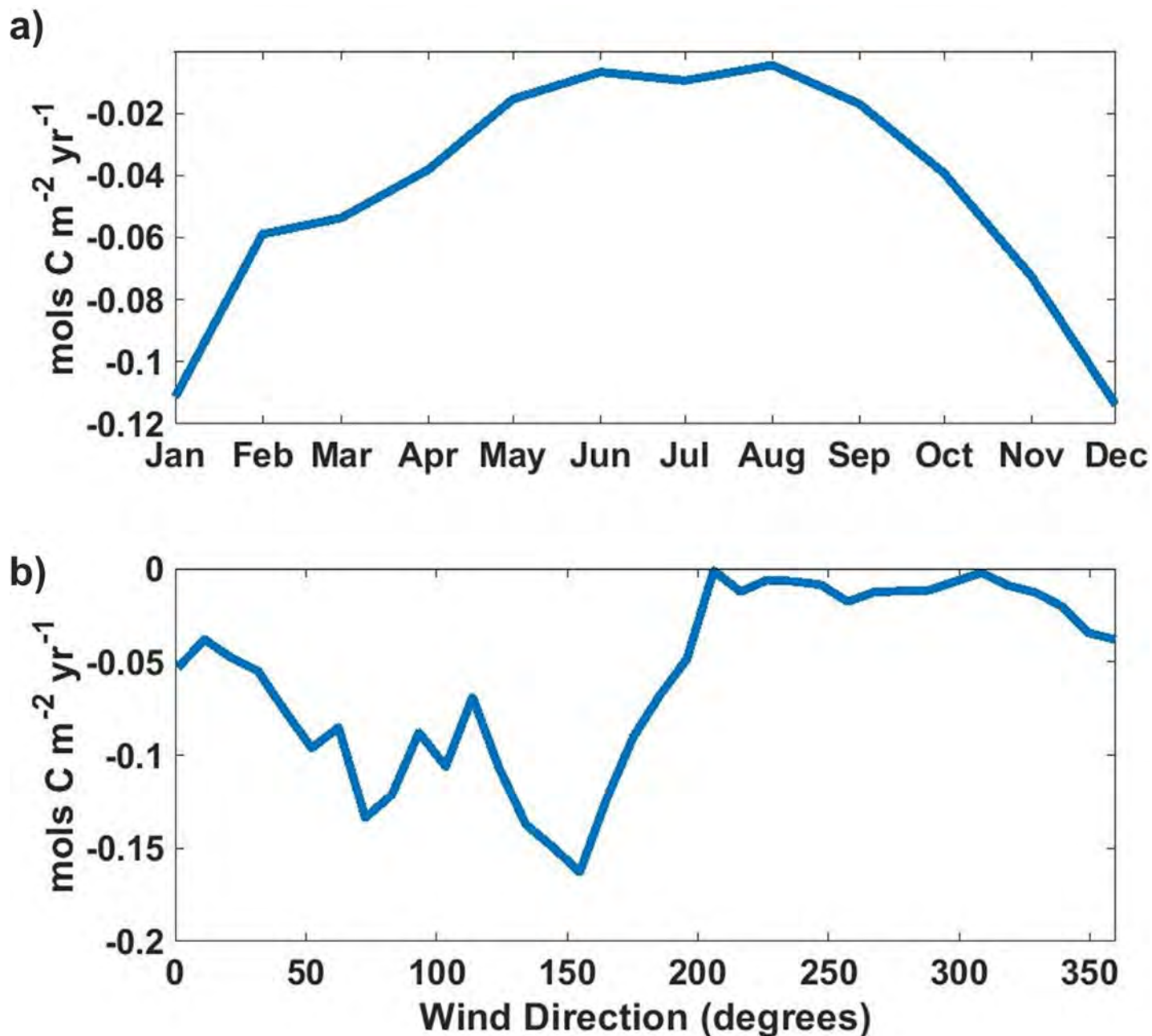


Fig 7. OA1 anomaly driven flux by month and wind direction. Atmospheric CO₂ anomaly driven sea-air flux averaged by month (a) and by wind direction (b) at OA1. Negative values indicate CO₂ flux into the ocean. Atmospheric CO₂ anomaly driven fluxes are strongest in the winter months when offshore winds are stronger and more frequent. Anomaly driven fluxes are restricted to periods of offshore winds.

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significant enhancement from land sources and this impact can extend on the order of 100km from the coast. These atmospheric CO₂ anomalies, relative to well-mixed atmospheric air, contribute to sea-air fluxes regardless of the underlying oceanographic and atmospheric conditions. The association of diurnal winds to these atmospheric anomalies clearly ties them to terrestrial sources. The high frequency variability also makes it difficult to model these terrestrial sources from sparse temporal or spatial resolution datasets. High-resolution

measurements from autonomous platforms allow us to make an initial estimate of the impacts of elevated atmospheric CO₂ levels from highly polluted terrestrial sources on sea-air fluxes.

The combination of offshore winds and terrestrial carbon sources drive large gradients in sea-air CO₂. However, the relatively weak offshore winds in the Monterey Bay greatly constrain CO₂ flux since it is parameterized to approach zero under very low wind speeds. This is a reasonable approximation in the open ocean where average wind speeds are rarely very low; the current parameterization may not apply when wind speeds are less than 3m/s, seriously underestimating sea-air flux at low wind speeds [17]. Average offshore wind speeds recorded along the Monterey Bay time series line never exceed 7m/s, and nearshore where CO₂ anomalies are largest wind speeds were around 3m/s. While open ocean fluxes may be accurately predicted using current sea-air flux models, our observations highlight the difficulty of using these same models in the nearshore realm, where wind speeds are lower.

The atmospheric CO₂ anomalies described above should occur anywhere that urban or agricultural areas are found near the coast, and the winds are such that they carry terrestrial sources over the marine environment. The diurnal land-sea breezes that contribute to offshore CO₂ transport observed in Monterey Bay are a widespread phenomenon worldwide [20]. While the contributions of direct CO₂ pollution to sea-air fluxes is modest, areas with stronger or more frequent offshore wind events, or larger urban centers situated closer to the water's edge should experience more significant fluxes. If the wave glider measurements in the Monterey Bay area are taken as a reasonable estimate of average anomaly driven CO₂ fluxes within 100km of land we can estimate the impact of increased atmospheric CO₂ globally. We calculated that coastal waters occupy 2.6×10^7 km² or about 7% of the global ocean so the added contribution to CO₂ fluxes could be order of 25 million tonnes, or roughly 1% of the ocean's total estimated CO₂ uptake[2]. However, since this uptake is concentrated over the 100 km coastal swath the estimated sea-air flux into the ocean in these regions should be increased by around 20%. Clearly, this additional uptake of anthropogenic CO₂ will have consequences for ocean acidification [4] in nearshore regions where marine biota is concentrated. These same processes should also drive enhanced transport of other terrestrially emitted gases, aerosols, and particles over nearshore marine waters. It is therefore likely that other pollutants are also entering nearshore waters at increased rates. How these enhanced urban sources of pollution will change over time and what are their ecological impacts will need to be assessed by future studies.

Supporting information

S1 Dataset. pCO₂ Dataset. Dataset containing pCO₂ air and water measurements, as well as wind speed and direction, sea surface temperature, and salinity at all platforms. (MAT)

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CERTIFICATE OF SERVICE

I hereby certify that on **October 20, 2020**, I electronically filed the Joint Appendix, Volume 1 and Joint Appendix Volume 2 of State and Local Government Petitioners and Public Interest Petitioners with the United States Court of Appeals for the District of Columbia Circuit via the CM/ECF system. All parties that are represented by counsel registered as CM/ECF users will be served by that system. I further certify that service will be accomplished via email for the following participants:

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