Message

From: idsal.anne@epa.gov [idsal.anne@epa.gov]
Sent: 8/30/2019 5:22:09 PM
To: Brazauskas, Joseph [brazauskas.joseph@epa.gov]; Schiermeyer, Corry [schiermeyer.corry@epa.gov]; Benevento, Douglas [benevento.douglas@epa.gov]; Jackson, Ryan [jackson.ryan@epa.gov]
CC: Dunham, Sarah [Dunham.Sarah@epa.gov]; Millett, John [Millett.John@epa.gov]; Woods, Clint [woods.clint@epa.gov]; Dominguez, Alexander [dominguez.alexander@epa.gov]; Harlow, David [harlow.david@epa.gov]
Subject: Fwd: Aircraft Pb Reports rollout
Attachments: 2019-07 Brief for AA Idsal - Communication & Rollout plan for release of our Aircraft Lead Reports.pptx; ATT00001.htm

Good afternoon Corry, Joe, and Doug,

Below is the rollout plan for the upcoming Aircraft Pb Report to be published on Sept. 27th. I encourage you all to review the proposed rollout plan below and weigh in early next week if you think alternative timelines or phases of the rollout would be beneficial.

Clint and I recently discussed the rollout on last week's RA call and our earlier general discussion with OCIR today.

The briefing docs that I received a couple of weeks ago are also attached for your reference and consideration.

Please let me know how OAR can be of assistance.

Best,
Anne

Sent from my iPhone

Begin forwarded message:

> **From:** "Dunham, Sarah" <Dunham.Sarah@epa.gov>
> **To:** "Idsal, Anne" <idsal.anne@epa.gov>
> **Cc:** "Millett, John" <Millett.John@epa.gov>, "Charmley, William" <charmley.william@epa.gov>, "Sargeant, Kathryn" <sargeant.kathryn@epa.gov>
> **Subject: Aircraft Pb Reports rollout**
>
> Hi Anne-
> As discussed, attached is the briefing on the plan for the release of the Aircraft Lead Reports, and our planned tick tock for the roll out is below. A couple things are worth flagging that have informed this planned rollout.

Ex. 5 Deliberative Process (DP)

Tick Tock

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Message

From: idsal.anne@epa.gov [idsal.anne@epa.gov]
Sent: 8/6/2019 2:51:56 PM
To: Benevento, Douglas [benevento.douglas@epa.gov]
Subject: Fwd: internal draft deliberative
Attachments: INTERNAL DRAFT DELIBERATIVE CA BACKGROUND.docx; ATT00001.htm

FYI

Anne L. Idsal
Acting Assistant Administrator - Office of Air and Radiation
U.S. Environmental Protection Agency
Washington, DC

Begin forwarded message:

> **From:** "Woods, Clint" <woods.clint@epa.gov>
> **Date:** August 6, 2019 at 10:23:24 AM EDT
> **To:** "Idsal, Anne" <idsal.anne@epa.gov>, "Harlow, David" <harlow.david@epa.gov>
> **Subject: internal draft deliberative**
>
> CA background

United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued December 18, 2018 Decided August 23, 2019

No. 15-1385

MURRAY ENERGY CORPORATION,
PETITIONER

v.

ENVIRONMENTAL PROTECTION AGENCY,
RESPONDENT

AMERICAN LUNG ASSOCIATION, ET AL.,
INTERVENORS

Consolidated with 15-1392, 15-1490, 15-1491, 15-1494

On Petitions for Review of Final Agency Action of
the United States Environmental Protection Agency

Seth L. Johnson argued the cause for Public Health and Environmental Petitioners. With him on the briefs were *Joshua Stebbins*, *Joshua Berman*, *David S. Baron*, and *Paul Cort*.

Dominic E. Draye, Deputy Solicitor General, Office of the Attorney General for the State of Arizona, argued the cause for State Petitioners. With him on the briefs were *Mark Brnovich*, Attorney General, *John R. Lopez, IV*, Solicitor General, *Keith Miller*, Associate Solicitor, *Joshua L. Kaul*, Attorney General, Office of the Attorney General for the State of Wisconsin, *Misha Tseytlin*, Solicitor General, *Daniel P. Lennington*, Assistant Attorney General, *Leslie C. Rutledge*, Attorney General, Office of the Attorney General for the State of Arkansas, *Lee Rudofsky*, Solicitor General, *Jamie L. Ewing*, Assistant Attorney General, *Jeff Landry*, Attorney General, Office of the Attorney General for the State of Louisiana, *Steven B. "Beaux" Jones*, Assistant Attorney General, *Wayne Stenehjem*, Attorney General, Office of the Attorney General for the State of North Dakota, *Margaret I. Olson*, Assistant Attorney General, *Peter S. Glaser*, *Carroll W. "Mack" McGuffey*, *Andy Beshear*, Attorney General, Office of the Attorney General for the Commonwealth of Kentucky, *Joseph A. Newberg, II*, Assistant Attorney General, *Lara Katz*, Assistant Attorney General, Office of the Attorney General for the State of New Mexico, *Ken Paxton*, Attorney General, Office of the Attorney General for the State of Texas, *Priscilla M. Hubenak*, Chief, *Craig J. Pritzlaff*, Assistant Attorney General, *E. Scott Pruitt*, Attorney General at the time the brief was filed, Office of the Attorney General for the State of Oklahoma, *P. Clayton Eubanks*, Deputy Solicitor General, and *Sean Reyes*, Attorney General, Office of the State of Utah. *Mithun Mansinghani*, Attorney, Office of the Attorney General for the State of Oklahoma, *Lisa M. Mitchell*, Assistant Attorney General, Office of the Attorney General for the State of Texas, *Oramel H. Skinner, III*, Solicitor, Office of the Attorney General for the State of Arizona, *Sarah Adkins* and *Samuel R. Flynn*, Assistant Attorneys General, and *Gregory T. Dutton*, Counsel, Office of the Attorney General for the Commonwealth of Kentucky, *Steven C. Kilpatrick*, Assistant

Attorney General, Office of the Attorney General for the State of Wisconsin, *Elizabeth B. Murrill* and *Harry J. Vorhoff*, Assistant Attorneys General, Office of the Attorney General for the State of Louisiana, entered appearances.

James R. Bieke argued the cause for Industry Petitioners. With him on the briefs were *Roger R. Martella*, *Joel F. Visser*, *Scott C. Oostdyk*, *E. Duncan Getchell, Jr.*, *Michael H. Brady*, *Thomas A. Lorenzen*, *Robert J. Meyers*, *Linda E. Kelly*, *Quentin Riegel*, *Leland P. Frost*, *Michael B. Schon*, *Elizabeth L. Horner*, *Lucinda Minton Langworthy*, *Aaron M. Flynn*, *Steven P. Lehotsky*, *Sheldon B. Gilbert*, *Stacy Linden*, and *Richard S. Moskowitz*. *Peter C. Tolsdorf* entered an appearance.

Hope M. Babcock and *Sarah J. Fox* were on the brief for *amici curiae* American Thoracic Society, et al. in support of petitioners Sierra Club, et al.

Thomas J. Ward was on the brief for *amicus curiae* The National Association of Home Builders in support of Industry and State Petitioners.

Justin Heminger and *Simi Bhat*, Trial Attorneys, U.S. Department of Justice, argued the causes for respondent. With them on the brief were *John C. Cruden*, Assistant Attorney General at the time the brief was filed, and *David Orlin*, *Steven Silverman*, and *Brian Doster*, Attorneys, U.S. Environmental Protection Agency. *Jon M. Lipshultz*, Attorney, U.S. Department of Justice, entered an appearance.

James R. Bieke argued the cause for Industry Respondent-Intervenors. With him on the brief were *Roger R. Martella*, *Joel F. Visser*, *Lucinda Minton Langworthy*, *Aaron M. Flynn*, *Thomas A. Lorenzen*, *Robert J. Meyers*, *Stacy Linden*, *Richard*

S. Moskowitz, *Steven P. Lehotsky*, *Sheldon B. Gilbert*, *Linda E. Kelly*, *Quentin Riegel*, *Leland P. Frost*, *Michael B. Schon*, *Elizabeth Horner*, and *Leslie A. Hulse*. *Peter C. Tolsdorf* entered an appearance.

Seth L. Johnson argued the cause for Health and Environmental Respondent-Intervenors. With him on the brief was *David S. Baron*. *Joshua A. Berman* and *Joshua R. Stebbins* entered appearances.

Jonathan Weiner, Deputy Attorney General, Office of the Attorney General for the State of California, argued the cause for State *Amici* in support of respondent. With him on the brief were *Kamala D. Harris*, Attorney General at the time the brief was filed, *Robert W. Byrne*, Senior Assistant Attorney General, and *Gavin G. McCabe*, Supervising Deputy Attorney General. *Melinda Pilling*, Attorney, entered an appearance.

Richard L. Revesz, *Denise A. Grab*, *Jack Lienke*, *Michael A. Livermore*, and *Jason A. Schwartz* were on the brief for *amicus curiae* The Institute for Policy Integrity at New York University School of Law in support of respondent.

Before: GRIFFITH, PILLARD and WILKINS, *Circuit Judges*.

Opinion for the Court filed PER CURIAM.

PER CURIAM: In this opinion, we consider various challenges to the Environmental Protection Agency's 2015 revisions to the primary and secondary national ambient air quality standards for ozone. For the reasons given below, we deny the petitions, except with respect to the secondary ozone standard, which we remand for reconsideration, and grandfathering provision, which we vacate.

I. Background

A. Statutory and Procedural Background

Congress enacted the modern version of the Clean Air Act (the "Act"), codified at 42 U.S.C. § 7401 *et seq.*, in 1970 to control and reduce contaminants responsible for air pollution with the overarching goal to protect human health and the environment. Pursuant to Title I, EPA must establish, publish, and periodically review primary and secondary national ambient air quality standards ("NAAQS") for air pollutants that "may reasonably be anticipated to endanger public health or welfare." 42 U.S.C. § 7408(a)(1)(A). The primary NAAQS are to be set at levels "the attainment and maintenance of which in the judgment of the Administrator, . . . allowing an adequate margin of safety, are requisite to protect the public health." *Id.* § 7409(b)(1). The secondary NAAQS "shall specify a level of air quality the attainment and maintenance of which in the judgment of the Administrator, . . . is requisite to protect the public welfare from any known or anticipated adverse effects." *Id.* § 7409(b)(2). Thus, primary NAAQS protect the public health, while the secondary NAAQS protect the public welfare. "Public health" includes adverse health effects for both the population at large and sensitive populations such as children, older adults, and people with asthma or other lung diseases. The term "public welfare" encompasses a wide variety of effects on soil, plants, wildlife and biota, property damage, aesthetic concerns, and other non-health-related impacts such as hazards to economic values and personal comfort. *Id.* § 7602(h).

Pursuant to section 109(d) of the Clean Air Act, EPA must complete a "thorough" review of the NAAQS every five years. *Id.* § 7409(d)(1). During this review, EPA must revise the criteria and standards or promulgate new standards as

appropriate. *Id.* To assist in this process, the Clean Air Scientific Advisory Committee ("CASAC") undertakes an examination of the current air quality criteria, primary NAAQS, and secondary NAAQS, and submits recommendations to EPA for "any new [NAAQS] and revisions of existing criteria and standards as may be appropriate." *Id.* § 7409(d)(2)(A)-(B). Congress required EPA to take CASAC's recommendations into account when promulgating revised NAAQS and to fully explain its reasons when it departs from CASAC's advice. However, the ultimate decision to revise the NAAQS—and the determination of the new level—rests with the Administrator. *Id.* § 7407(d)(3).

These petitions concern EPA's promulgation of revised NAAQS related to ozone. Ozone is a colorless gas that occurs both in the Earth's upper atmosphere and at ground level. Although ozone is an "essential presence in the atmosphere's stratospheric layer," ground-level ozone is an air pollutant that is harmful to breathe and damages crops, trees, and other vegetation. *S. Coast Air Quality Mgmt. Dist. v. EPA*, 472 F.3d 882, 887 (D.C. Cir. 2006); *see Allied Local & Reg'l Mfrs. Caucus v. EPA*, 215 F.3d 61, 66 (D.C. Cir. 2000). Ground-level ozone is not a direct product of human activity, but instead forms when atmospheric pollutants (including nitrogen oxides and volatile organic compounds) react in the presence of sunlight. *See Mississippi v. EPA*, 744 F.3d 1334, 1340 (D.C. Cir. 2013). These precursor atmospheric pollutants are created primarily from emissions produced by cars, power plants, and chemical solvents. *NRDC v. EPA*, 777 F.3d 456, 459 (D.C. Cir. 2014).

In 1979, EPA issued primary and secondary NAAQS for ozone with a limit of 0.12 parts per millions (ppm), and a one-hour averaging time. *See id.* This "one-hour standard" measured average ozone levels over one-hour periods, and

EPA would deem an area in compliance with this standard if it did not exceed the level for more than one day per calendar year. *Id.* EPA next revised the ozone NAAQS in 1997, having determined that no revisions to the standards were necessary in 1993. National Ambient Air Quality Standards for Ozone, 58 Fed. Reg. 13,008 (Mar. 9, 1993). The agency replaced the one-hour, 0.12 ppm standard with a 0.08 ppm standard measured over eight hours. National Ambient Air Quality Standards for Ozone, 62 Fed. Reg. 38,856 (July 18, 1997). EPA also altered the form of compliance to the annual fourth-highest daily maximum 8-hour concentration, averaged over three years. *Id.*

In 2008, EPA lowered the primary and secondary standards to 0.075 ppm but kept the same eight-hour averaging time and form as in 1997. *NRDC*, 777 F.3d at 462-63; National Ambient Air Quality Standards for Ozone, 73 Fed. Reg. 16,436 (Mar. 27, 2008). In developing the 2008 standards, EPA relied on scientific evidence showing that ozone causes health effects at and above 0.08 ppm and examined two new clinical studies that found negative health effects from ozone at lower levels. *See Mississippi*, 744 F.3d at 1340. While CASAC reviewed this same evidence and recommended a primary level between 0.06 ppm and 0.07 ppm, EPA departed from this advice and explained that the scientific data regarding negative health effects at 0.06 ppm was too limited and inconclusive to support a standard below 0.075 ppm. *See id.* at 1340-41. We upheld EPA's primary standard on this basis but found that EPA had not adequately explained its revision of the secondary standard. *Id.* at 1359-62. We noted that EPA had not properly determined what level of air quality was requisite to protect the public welfare. *Id.* Accordingly, we remanded for further explanation and reconsideration of the secondary level.

Following the promulgation of the 2008 ozone NAAQS, EPA undertook another comprehensive review of the ozone

standards and scientific data. EPA consolidated its review on remand of the 2008 secondary standard with its ongoing review for the 2015 ozone NAAQS. After conducting public hearings and receiving approximately 430,000 written comments on its proposed revision of the primary and secondary ozone NAAQS, EPA published its final 2015 ozone NAAQS on October 26, 2015. National Ambient Air Quality Standards for Ozone ("2015 Rule"), 80 Fed. Reg. 65,292 (Oct. 26, 2015). For both the primary and secondary standards, EPA lowered the level from 0.075 ppm to 0.07 ppm, while retaining the 2008 indicator (ozone), averaging time (8 hours), and form (three-year average of the fourth-highest daily maximum 8-hour concentration). *See id.* at 65,294, 65,301, 65,347, 65,349-50, 65,352.

Based on scientific data and CASAC's recommendation, the Administrator concluded that the 2008 primary ozone standard (0.075 ppm) was not at a level requisite to protect public health while allowing an adequate margin of safety. *Id.* at 65,326, 65,344, 65,346. The Administrator placed significant weight on new clinical studies linking short-term ozone exposure with respiratory effects, including lung inflammation. *See id.* at 65,302-03, 65,341, 65,352, 65,359. EPA conducted its own exposure study and found that a revised primary NAAQS standard of 0.07 ppm would "eliminate the occurrence of two or more exposures of concern to [ozone] concentrations at and above [0.08 ppm]" and would "virtually eliminate the occurrence of two or more exposures of concern to [ozone] concentrations at and above [0.07 ppm], even in the worst-case urban study area and year evaluated." *Id.* at 65,353. The Administrator additionally found that a level of 0.07 ppm would "protect the large majority of children in the urban study areas (*i.e.*, about 96% to more than 99% of children in individual urban study areas) from experiencing two or more exposures of concern at or above the [0.06 ppm] benchmark."

Id. at 65,353, 65,360-64. EPA also evaluated hundreds of epidemiologic studies that provided statistically relevant information about a broader population of individuals who are exposed to uncontrolled air pollution. *See id.* at 65,304, 65,364.

Further, the Administrator considered CASAC's advice on the new primary ozone standard. *See id.* at 65,346, 65,361. In advance of the 2015 Rule, CASAC stated that "there is clear scientific support for the need to revise the standard" in place since 2008 and recommended setting the standard within a range of 0.06 ppm to 0.07 ppm, while leaving the form, averaging time, and indicator unchanged. *Id.* at 65,322, 65,361.

EPA also assessed the secondary standard and concluded that the 2008 secondary standard (0.075 ppm) was not requisite to protect public welfare. *Id.* at 65,382, 65,389-90. Rather, EPA set the secondary standard at 0.07 ppm and kept the indicator, averaging time, and form the same. *Id.* at 65,369, 65,403, 65,409-10. EPA noted that more than four hundred new studies examining the interplay between ozone and public welfare had been developed since the promulgation of the 2008 ozone NAAQS. *Id.* at 65,369. These studies strengthened and expanded the scientific understanding of ozone's effects on plants. The Administrator analyzed the causal relationship between ozone exposure and vegetation effects, examining tree growth impacts, crop yield loss, and visible leaf injury. *Id.* at 65,370; *see id.* at 65,294, 65,369-70. The Administrator gave "primary consideration" to tree growth impacts, judging that it was more difficult to assess the welfare significance of crop yield loss (given that crops are heavily managed) and visible leaf injury (citing the "lack of established criteria or objectives"). *Id.* at 65,407.

In setting the secondary standard, EPA departed from CASAC's recommendations as to the form and standard of the secondary ozone NAAQS. CASAC recommended using a single-year averaging approach, but EPA opted for a three-year average because "the public welfare significance of effects associated with multiple years of critical exposures are potentially greater than those associated with a single year of such exposure." *Id.* at 65,404. The Administrator also rejected CASAC's recommendation to use the W126 exposure index, a cumulative, seasonal ozone exposure metric, as the form of the secondary standard, rather than the same form as the primary standard (three-year average of the fourth-highest daily level), finding that the latter form was adequate to restrict cumulative ozone exposures that are detrimental to vegetation. *Id.* at 65,408.

In addition to revising the ozone standards, the 2015 NAAQS also updated the regulations for the Prevention of Significant Deterioration ("PSD") permitting program. *See id.* at 65,431-34. Under the PSD program, no construction on a major emitting facility may be commenced in an area that has attained the air quality standards for any criteria pollutant unless "the owner or operator of such facility demonstrates . . . that emissions from construction or operation of such facility will not cause, or contribute to, air pollution in excess of any . . . [NAAQS]." 42 U.S.C. § 7475(a)(3)(B). The permitting authority (either a state or EPA) must grant or deny a completed preconstruction permit application under the PSD program within one year of filing. *Id.* § 7475(c).

EPA claimed that sections 7475(a)(3)(B) and 7475(c) have the "potential for conflict," which it was authorized under *Chevron* to resolve. EPA Br. 132; *see also* 80 Fed. Reg. at 65,433-34. EPA worried that, for a limited subset of *pending* permit applications, complying with section 7475(a)(3)(B)'s

demonstration requirement for the 2015 NAAQS "could hinder compliance with the requirement under section [7475](c) to issue a permit within one year of the completeness determination." 80 Fed. Reg. at 65,434. In other words, EPA was unsure how to handle completed permit applications where sources would have complied with the NAAQS in existence at the time the application was filed (the 2008 ozone standards), but where the NAAQS were revised before the permit was approved. *See id.* at 65,433. EPA resolved this apparent conflict by implementing a grandfathering provision for pending permit applications that satisfy one of two permitting criteria. *See id.* at 65,431-34. These two applicable categories include: (1) permit applications that are deemed complete on or before the signature date of the final rule revising the ozone NAAQS; and (2) permit applications "for which the reviewing authority has first published a public notice of the draft permit or preliminary determination before the effective date of the revised NAAQS." *Id.* at 65,431, 65,433. If a permit application satisfies either requirement, the owner or operator must show compliance with the 2008 rather than the 2015 NAAQS before initiating construction.

Petitioners from the oil and gas industry ("Industry Petitioners") and from several states ("State Petitioners") claim that the primary and secondary NAAQS are too protective. Conversely, petitioners from public health and environmental groups ("Environmental Petitioners") claim that these NAAQS are not protective enough. Environmental Petitioners also contend that EPA's decision to allow limited grandfathering of certain permit applications was inconsistent with the Clean Air Act.

This opinion proceeds in five parts. Part II considers the challenges to the primary standard, and Part III the challenges to the secondary standard. Part IV reviews the cross-cutting

challenges to EPA's promulgation of the NAAQS, and Part V addresses the challenge to the grandfathering provision.

B. Jurisdiction and Standard of Review

This court has jurisdiction to review EPA's 2015 Rule pursuant to 42 U.S.C. § 7607(b)(1). Under section 7607, agency action may be reversed if it is arbitrary, capricious, an abuse of discretion, not in accordance with law, or in excess of statutory authority. *Id.* § 7607(d)(9)(A), (C); *see Am. Petroleum Inst. v. EPA*, 684 F.3d 1342, 1347 (D.C. Cir. 2012). To withstand review, an agency must have examined all relevant facts and data, and articulated a rational explanation for its decision, including a reasonable connection between the facts and ultimate outcome. *See Allied Local*, 215 F.3d at 68. We cannot look at EPA's decision as would a scientist, but instead must exercise our "narrowly defined duty of holding agencies to certain minimal standards of rationality." *Mississippi*, 744 F.3d at 1342 (quoting *Nat'l Envtl. Dev. Ass'n's Clean Air Project v. EPA*, 686 F.3d 803, 810 (D.C. Cir. 2012)); *see id.* at 1348 ("We repeat: it is not our job to referee battles among experts; ours is only to evaluate the rationality of EPA's decision . . . .").

On questions of statutory interpretation, the court must review EPA's actions in accordance with the standard set forth in *Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 842-44 (1984). *See Michigan v. EPA*, 135 S. Ct. 2699, 2706-07 (2015); *NRDC*, 777 F.3d at 463. *Chevron* deference involves a two-step analysis. First, if a statute is clear, the court must give effect to Congress's unambiguous language and intent. *Chevron*, 467 U.S. at 842-43. Where a statute that an agency administers is ambiguous, the court must turn to the second *Chevron* principle and give deference to the

agency's reasonable interpretation of the statute. *Id.* at 843; *see also S. Coast Air Quality Mgmt. Dist.*, 472 F.3d at 891.

II. Primary Standard Challenges

Industry and State Petitioners contend that EPA's promulgation of the 2015 Rule's primary standard was arbitrary and capricious because, they say, EPA failed to provide a reasoned explanation for departing from the 2008 NAAQS. Environmental Petitioners argue that the primary ozone standard is too lenient because it occasionally permits ozone levels to exceed 0.07 ppm and will allegedly tolerate adverse health effects. For the reasons below, we hold that these arguments lack merit.

A. Industry and State Petitioners' Challenge

The Clean Air Act requires EPA to set primary NAAQS that are "requisite" to protect public health with an adequate margin of safety. 42 U.S.C. § 7409(b)(1). The term "requisite" means "sufficient, but not more than necessary." *See Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 473 (2001). While the determination of what is "requisite" may require a contextual assessment of acceptable risk, our precedent is clear that prior NAAQS are not sacrosanct and are not granted presumptive validity. *See Mississippi*, 744 F.3d at 1343. Prior NAAQS need not remain the governing standard until every aspect of those prior NAAQS is undermined. *Id.* To hold otherwise "would bind EPA to potential deficiencies in past reviews because discrepancies between past and current judgments as easily reflect problems in the past as in the present." *Id.* Thus, when EPA reviews and revises the NAAQS, it does so against current policy considerations and existing scientific knowledge. *Id.* Accordingly, "[t]he statutory framework requires us to ask only whether EPA's proposed NAAQS is

'requisite'; we need not ask why the prior NAAQS once was 'requisite' but is no longer up to the task." *Id.*

Given our decision in *Mississippi*, we must reject Industry and State Petitioners' argument that EPA departed from the 2008 NAAQS without adequate explanation. EPA has adequately explained why on the record before it the revised standard is requisite to protect the public health. As the record makes clear, the Administrator considered the entire body of scientific evidence available, including clinical studies, epidemiologic evidence, human exposure and health risk assessments, CASAC's recommendations, and over 430,000 public comments. *See* 80 Fed. Reg. at 65,293, 65,299, 65,301, 65,323, 65,326. And consistent with CASAC's advice, the Administrator placed the most weight on clinical studies. *See id.* at 65,302-03, 65,341, 65,352, 65,359. State Petitioners take particular issue with EPA's reliance on the 2009 Schelegle study, which, they argue, does not support EPA's finding of adverse effects. But the 2009 Schelegle study is merely one of many clinical studies that EPA relied on. State Petitioners ignore the fact that additional clinical studies and epidemiologic evidence show substantial health effects at ozone levels *as low as 0.06 ppm*. *See id.* at 65,331, 65,334-35 & n.96, 65,344, 65,364.

In addition to evaluating clinical studies, the Administrator also examined epidemiologic evidence and EPA's exposure and risk assessments. *See* 80 Fed. Reg. at 65,304, 65,314-17, 65,364. While the Administrator placed less weight on the epidemiologic results than on clinical studies, *see id.* at 65,320, 65,324, 65,335, she nonetheless found that recent epidemiologic studies suggested adverse health effects would occur below the 2008 NAAQS standard. While Industry Petitioners challenge the use of epidemiologic evidence given the uncertainties presented in these studies, even CASAC

concluded that the epidemiologic evidence would have alone been strong enough to justify revision of the 2008 NAAQS.

B. Environmental Petitioners' Challenges

In contrast to Industry and State Petitioners, Environmental Petitioners argue that the primary ozone standard is too lenient. They offer two reasons. First, Environmental Petitioners contend that the form of the revised standard is not health-protective because it permits ozone levels to exceed 0.07 ppm on some days. Second, they argue that ozone exposures of 0.07 ppm will cause adverse health effects, particularly in sensitive populations. For the reasons below, we hold that these arguments lack merit.

i. *EPA reasonably explained its decision to retain the form of the primary standard.*

Environmental Petitioners first take issue with the form of the revised standard—that the average, over three years, of the annual fourth-highest maximum daily 8-hour average ozone level must not exceed 0.07 ppm. By using this form, EPA "allows ozone levels to exceed—multiple times in any year—levels that EPA itself agrees cause adverse health effects." Envtl. Pet'rs Br. 20. Environmental Petitioners contend that because areas with ozone levels above the 0.07 ppm threshold can still comply with EPA's standards, the standard is unlawful and arbitrary. We disagree.

The Administrator's decision to retain the same form used in the 1997 and 2008 primary standards was in part based on how many people are estimated to experience unhealthy ozone exposures. To this end, the Administrator utilized EPA's exposure assessment to gauge how often various population subgroups will be exposed to potentially health-impairing ozone concentrations while experiencing elevated breathing

rates. *See* 80 Fed. Reg. at 65,356. Rather than considering the ozone level of an area in isolation, the Administrator also "consider[ed] activity patterns in the exposed population" because adverse health responses to ozone exposure are critically dependent on breathing rates. *Id.* at 65,363; *see also id.* ("Not considering activity patterns, and corresponding ventilation rates, can result in a standard that provides more protection than is requisite."). This use of the exposure assessment was rational.

Further, the Administrator adequately interpreted the exposure assessment. The Administrator correctly observed that the exposure assessment only chronicled how many people with an elevated breathing rate will be exposed to a specific ozone level, not how many will have an adverse effect. Given this limitation, the Administrator focused on estimates of two or more exposures of concern to assess the potential for adverse effects at and above an ozone concentration of 0.07 ppm. *See id.* at 65,310, 65,325, 65,330, 65,343, 65,345-46, 65,354, 65,358, 65,361, 65,363. Based on the data, the Administrator concluded that a level of 0.07 ppm ozone would eliminate the occasions on which school-age children experience two or more exposures of concern at ozone concentrations at and above 0.08 ppm and, even in the worst-case years and locations, would "virtually eliminate" the occasions on which such children experience two or more exposures of concern at 0.07 ppm. *Id.* at 65,353. In particular, the Administrator noted that a primary level of 0.07 ppm would protect approximately 96% to 99% of children in the urban study areas from experiencing two or more exposures of concern above the 0.06 ppm benchmark. *Id.* at 65,353; *see also id.* at 65,360-64. That Environmental Petitioners cite data suggesting that 18,000 children would experience multiple exposures of concern at or above 0.07 ppm during the worst year and location is not determinative because the primary standard for a non-threshold

pollutant like ozone is not required to produce zero risk, and "[t]he task of determining what standard is 'requisite' to protect the qualitative value of public health or what margin of safety is 'adequate' to protect sensitive subpopulations necessarily requires the exercise of policy judgment." *Mississippi*, 744 F.3d at 1351, 1358. EPA has reasonably exercised its judgment.

Given that the Administrator appropriately examined and considered EPA's exposure assessment, her decision to retain the form of the primary standard was also rational. The Administrator determined that, when combined with an ozone level of 0.07 ppm, the form of the standard (three-year average of the fourth-highest daily level) was requisite. In particular, the Administrator found that most areas that meet the revised standard will have an 8-hour ozone concentration below 0.07 ppm. *See* 80 Fed. Reg. at 65,363. Environmental Petitioners, however, criticize this form for allegedly failing to account for individual ozone days above 0.07 ppm. But Environmental Petitioners elide a crucial detail of EPA's methodology: the exposure assessment study that "informed the Administrator's consideration of the degree of public health protection provided by various standard levels" considered the air quality at "various standards *with* the current 8-hour averaging time and fourth-high, 3-year average form." *Id.* at 65,351-52 (emphasis added). As such, the Administrator reasonably accounted for days when ozone levels may exceed 0.07 ppm. Taken together, we conclude that the Administrator's decision to retain the form of the standard was appropriate and neither arbitrary nor capricious.

ii. *EPA reasonably set the primary standard at 0.07 ppm.*

Environmental Petitioners next argue that the Administrator's decision to lower the primary standard from from 0.075 to 0.07 ppm is an unexplained departure from CASAC's recommendation and from EPA's prior position regarding the adversity of certain lung function decrements. We reject both contentions.

Environmental Petitioners argue that EPA failed to fulfill its duty under the Act to provide "an explanation of the reasons" for departing from CASAC's scientific recommendations. 42 U.S.C. § 7607(d)(3); *see also id.* § 7607(d)(6). They contend CASAC told EPA that "[a]t [0.07 ppm] there is substantial scientific certainty of a variety of adverse effects, including decrease in lung function, increase in respiratory symptoms, and increase in airway inflammation," Envtl. Pet'rs Br. 31 (quoting J.A. 531), and EPA failed to rationally dispute or refute this finding.

EPA adequately considered CASAC's advice when setting the primary NAAQS to 0.07 ppm. While CASAC advised EPA to "set the level of the standard lower than [0.07 ppm]," J.A. 531, that recommendation constituted policy—not scientific—advice. This distinction is crucial because we defer to EPA's judgment on issues of *policy* but require EPA to "fully explain its reasons for any departure from" "CASAC's expert *scientific* recommendations." *Mississippi*, 744 F.3d at 1358, 1354-55 (emphasis added). CASAC's letter to EPA makes clear that "based on the scientific evidence" it "recommend[ed] a range of levels for a revised primary ozone standard from [0.07 ppm] to [0.06 ppm]." J.A. 531. CASAC then "acknowledge[d] that the choice of a level within the range recommended based on scientific evidence is a policy judgment." *Id.*

In an effort to influence EPA's policy judgment, CASAC noted that given the "substantial scientific certainty of a variety of adverse effects" at 0.07 ppm, that level *may* not be adequate to protect public health. *Id.* So, CASAC's "policy advice [was] to set the level of the standard lower than [0.07 ppm] within a range down to [0.06 ppm], taking into account [EPA's] judgment regarding the desired margin of safety to protect public health." *Id.* EPA did not take CASAC's policy advice because the Administrator found that 0.07 ppm would still "provide substantial protection against the broader range of [ozone] exposure concentrations that have been shown in controlled human exposure studies to result in respiratory effects, including exposure concentrations below [0.07 ppm]." 80 Fed. Reg. at 65,363. EPA nonetheless chose a level for the primary standard that was within CASAC's scientifically recommended range. In so doing, EPA did not abrogate its duty under the Clean Air Act to consider CASAC's scientific recommendations but instead made a valid policy decision.

Environmental Petitioners also argue that EPA should have set the primary standard lower than 0.07 ppm, given the controlled human exposure studies that had been published since the agency's 2008 NAAQS review. Specifically, Environmental Petitioners highlight two new studies evaluating exposures to 0.06-0.063 ppm ozone that concluded that exposures at 0.06 ppm caused lung function decrements of 10% or more. Taken with EPA's statement in the 2008 ozone NAAQS rule that a lung function decrement of 10% or more "should be considered adverse for sensitive populations," 73 Fed. Reg. at 16,454-55, Environmental Petitioners contend that EPA acted arbitrarily by giving insufficient weight to those new studies. We are unpersuaded by this argument, which fails to appreciate the dynamic nature of adversity determinations at each NAAQS review.

In determining the appropriate level for the 2015 primary standard, the Administrator was not bound by adversity judgments in the 2008 NAAQS review. Indeed, "as the contours and texture of scientific knowledge change, the epistemological posture of EPA's NAAQS review necessarily changes as well." *Mississippi*, 744 F.3d at 1344. Thus, we consider only whether EPA's 2015 Rule offers a rational explanation of why EPA chose a new adversity definition and whether the Administrator reasonably evaluated the evidence of adversity. We hold that EPA's actions were reasonable and reasonably explained. Rather than applying a rigid test for determining what level of decrement is adverse, the Administrator took a more comprehensive approach provided by American Thoracic Society (ATS) guidelines. ATS guidelines provide that "reversible loss of lung function in combination with the presence of [respiratory] symptoms should be considered adverse." 80 Fed. Reg. at 65,357 (internal quotation marks omitted). EPA reasonably explained that it chose to adopt the ATS definition of adversity because "the available evidence does not provide information on the extent to which a short-term, transient decrease in lung function in a population," without more, could "change the risk profile of the population," and that CASAC was "conditional" about whether "the lung function decrements observed in some people at [0.06 ppm] . . . are adverse." *Id.* at 65,358. The clinical studies that Environmental Petitioners contend EPA dismissed concluded that lung function decrements (such as 10%) occurred in some individuals at lower ozone concentrations, including 0.06 and 0.063 ppm, but not in "combination [with] statistically significant increases in respiratory symptoms." *See id.* at 65,357. Under ATS guidance, the Administrator declined to designate such loss of lung function as adverse. This decision was rational, and Environmental Petitioners cannot show that the evidence required EPA to decide differently.

III. Secondary Standard Challenges

Next, we turn to the challenges to EPA's secondary standard. The Environmental Petitioners contend that: (1) in considering tree growth loss, EPA acted arbitrarily in setting the target level of air quality and therefore fell short of the statutory requirement to set a standard "requisite" to protect against such harm; (2) EPA arbitrarily used a three-year average rather than a single-year, cumulative measurement of ozone exposure as a benchmark to gauge the protectiveness of its standard, and arbitrarily declined to adopt the single-year cumulative exposure index as the form and averaging time for the secondary standard; and (3) EPA unreasonably failed to identify a level of air quality requisite to protect the public welfare against adverse effects from visible leaf injury. Industry Petitioners argue only that EPA failed to justify its decision to lower the secondary standard from its 2008 level. We hold that EPA has not explained its decision to set a target level of protection against tree growth loss based on a three-year average of cumulative, single-year ozone exposures, nor has it justified its decision not to specify any level of air quality requisite to protect against visible leaf injury. We reserve judgment on whether EPA reasonably declined to adopt the cumulative exposure index as the form and averaging time, and deny the remainder of the challenges.

We begin by reviewing EPA's secondary standard-setting process. EPA concentrated its review on the association between ozone exposure and "vegetation effects," focusing on tree growth loss (also referred to as "relative biomass loss"), crop yield loss, and visible leaf (or "foliar") injury. 80 Fed. Reg. at 65,370-71. CASAC agreed that those three effects were "appropriate surrogates [for] a wide range of damage that is adverse to public welfare" because ozone damage to trees, leaves, and crops can directly affect numerous resources and

ecosystem services that are important to the public and indirectly affect a wide array of ecosystem components and functions. J.A. 532-33.

In performing its analysis, EPA used an "exposure metric" called the "W126 index" to gauge how differing levels of ozone exposure correspond to effects on tree growth, crop yields, and visible leaf injury. 80 Fed. Reg. at 65,373. The W126 index, which EPA deemed to be the "most biologically relevant metric[] for consideration of [ozone] exposures eliciting vegetation-related effects," measures the cumulative amount of ozone to which a plant is exposed over a single three-month growing season. *Id.* at 65,373-74. W126 levels are expressed as parts-per-million hours (ppm-hrs). *Id.*

CASAC recommended that EPA use the single-year W126 exposure index as the form and averaging time for the secondary standard, J.A. 518, meaning that compliance with the standard would be measured based on a single growing season's worth of cumulative ozone exposure. CASAC advised EPA to set the level for the secondary standard within a range of 7 ppm-hrs and 15 ppm-hrs. Based on the data CASAC used, that corresponded to median annual tree growth loss between 2% and 5.2%. J.A. 518, 534-36, 631. CASAC cautioned that "at 17 ppm-hrs, the median tree species has 6% relative biomass loss," which would be "unacceptably high." J.A. 518. Regarding the other two surrogates, CASAC counseled that, to protect against loss of crop yield, "a level of 15 ppm-hrs for the highest 3-month sum in a single year is requisite," and to reduce foliar injury, a "level below 10 ppm-hrs is required." *Id.* All of those levels were based on single-year measuring periods, so CASAC advised that if EPA were to base its secondary standard on a three-year average of the relevant measurements, it should lower the level of the standard

"to protect against single unusually damaging years that will be obscured in the average." J.A. 536.

EPA agreed with CASAC's recommendation that 6% tree growth loss would be "unacceptably high." 80 Fed. Reg. at 65,406. However, as EPA explained, *id.* at 65,384, 65,392 n.197, CASAC's advice on that was based in part on a study of cottonwood trees, which are uniquely ozone-sensitive, and CASAC itself advised EPA that the "cottonwood data . . . receive[d] too much emphasis" in EPA's analysis, J.A. 533. After excluding the cottonwood data, EPA concluded that ozone exposure of 19 ppm-hrs was associated with 6% tree growth loss, and that 17 ppm-hrs of ozone exposure brought it down to 5.3% loss. 80 Fed. Reg. at 65,396, 65,407. EPA accordingly chose to focus on a standard "somewhat below" the 19 ppm-hrs level associated with 6% median tree growth loss. *Id.* at 65,406-07.

EPA then departed from CASAC's advice in several ways. First, it chose not to use the W126 cumulative seasonal exposure index as the form and averaging time of the standard, opting instead to retain the averaging time (8 hours) and form it had used in the 2008 rule (the three-year average of the fourth-highest daily level). EPA purported to use as a "benchmark," or target level of protectiveness, the high end of the range of W126 levels CASAC had recommended. Recall that CASAC had recommended that the maximum seasonal ozone exposure not exceed (the cottonwood-adjusted) 17 ppm-hrs in any single growing season. In deciding what exposure level correlated to CASAC's 17 ppm-hrs, however, EPA used a three-year average of anticipated seasonal exposure levels. Thus, EPA chose to set the standard at a level that it projected (based on a statistical analysis of past ozone exposure data) would "in nearly all instances" going forward restrict the *average* of three growing seasons' ozone exposures to the

equivalent of 17 ppm-hrs. *Id.* at 65,407. But by using that method to set the level, EPA arrived at a standard that statistically tolerates cumulative ozone exposures in a single growing season that are higher than CASAC's maximum recommended level. EPA also did not specify any level of ozone to protect against visible leaf injury or crop loss. The agency reasoned that data for those public-welfare harms were too uncertain to permit it to discern a level that would provide the requisite protections, and that the standard it set to protect against adverse effects from tree growth loss would at least provide "some increased protection" against visible leaf injury and crop damage. *Id.* at 65,407-08.

In sum, EPA ultimately chose to set the level of the secondary standard at 0.07 ppm while retaining the form and averaging time it had previously used. *Id.* at 65,410.

A. Environmental Petitioners' Challenges

The essence of the Environmental Petitioners' petition is that EPA did not adequately explain its deviations from CASAC's advice. "In order to enable judicial review and to satisfy its statutory obligation to explain its reasons for departing from CASAC, EPA must be precise in describing the basis for its disagreement with CASAC." *Mississippi*, 744 F.3d at 1355. Where EPA diverges from CASAC's scientific advice, there must be "substantial evidence in the record when considered as a whole which supports the Administrator's determinations." *Id.* (quoting *Lead Indus. Ass'n v. EPA*, 647 F.2d 1130, 1146 (D.C. Cir. 1980)).

i. *EPA reasonably used 17 ppm-hrs as the benchmark level to protect against adverse effects associated with tree growth loss.*

The Environmental Petitioners argue that, by establishing 17 ppm-hrs as the target level of protection against adverse welfare effects associated with tree growth loss, EPA impermissibly departed upward from CASAC's advice in two ways—first, by excluding the data from the cottonwood tree study from its tree growth loss analysis and, second, by focusing on limiting tree growth loss to under 6%, rather than the 2% target they say CASAC's analysis required. Setting aside for the moment EPA's decision to average the benchmark over three years, we conclude that EPA adequately explained its decision to exclude the cottonwood data and acted consistently with CASAC's advice in choosing to limit tree growth loss to under 6%.

Cottonwood Data. EPA reviewed seedling studies of twelve different tree species to determine the median percentile of tree growth loss at varying ozone levels. *See* 80 Fed. Reg. at 65,372. One of those studies—of cottonwood seedlings—significantly lowered the ozone level at which the twelve tree species experience 6% median growth loss. *See id.* at 65,384, 65,391-92. CASAC had itself relied on that study, *see* J.A. 537, but advised EPA that the cottonwood data had received "too much emphasis" because the study "did not control for ozone and climatic conditions," and the results "show[ed] extreme sensitivity to ozone compared to other studies," J.A. 533. EPA accordingly excluded the cottonwood data from its tree growth analysis, which increased the ozone level associated with 6% median growth tree loss from 17 ppm-hrs up to 19 ppm-hrs. 80 Fed. Reg. at 65,384, 65,391-92.

The Environmental Petitioners object that EPA arbitrarily disregarded CASAC's advice because, they say, CASAC never expressly advised EPA to disregard the cottonwood data altogether, and CASAC relied on it in setting its recommended exposure range. But we can only discern an unreasonable deviation where CASAC itself has been "precise about the basis for its recommendations." *Mississippi*, 744 F.3d at 1358. It was far from precise on the disputed point. It warned EPA to treat the cottonwood data with caution, but recommended a range of ozone levels in reliance on the median tree growth loss estimates (outlined in Table 6-1 of EPA's staff's second draft Policy Assessment), which weigh the cottonwood data equally with other seedling studies. *See* J.A. 537 (citing EPA, *Policy Assessment for the Review of the Ozone NAAQS, Second External Review Draft* 6-19, tbl. 6-1 (2014), J.A. 631). The Environmental Petitioners suggest that CASAC was only warning EPA to take care in describing the cottonwood data in the narrative portion of its Policy Assessment, not suggesting anything about how the data was actually used, but that makes little sense in the context of an exchange about quantitative growth loss estimates. In light of CASAC's mixed messages, we cannot say that EPA's decision to exclude the cottonwood data was arbitrary.

The 6% Target. Emphasizing CASAC's admonition that 6% tree growth loss would be "unacceptably high," EPA decided "to focus on a standard that would generally limit cumulative exposures to those for which the median [tree growth loss] estimate would be somewhat lower than 6%." 80 Fed. Reg. at 65,406-07. The Environmental Petitioners contend that CASAC "plainly specified" that 2% median growth loss was the requisite level to avoid adverse welfare effects related to tree growth loss, Envtl. Pet'rs Br. 42-44, but they misconstrue CASAC's advice.

CASAC did not identify 2% growth loss as the only sufficiently protective level, but as "*an* appropriate scientifically based value to *consider* as a benchmark of adverse impact," elaborating that it would be "appropriate to identify a *range* of levels of alternative W126-based standards that *includes* levels that aim for not greater than 2% [growth loss] for the median tree species." J.A. 537 (emphases added). CASAC in fact ultimately recommended that EPA set the standard between 7 ppm-hrs and 15 ppm-hrs, J.A. 518, which, based on the seedling data upon which CASAC relied (including the cottonwood data), corresponds to median annual tree growth loss between 2% and 5.2%, *see* J.A. 631. In other words, CASAC recommended that EPA consider limiting tree growth loss to 2% as the lower end of a range of permissible target levels. EPA followed CASAC's advice by considering a 2% growth loss target as part of a range of growth loss targets and determined that the studies underlying CASAC's low-end recommendation were insufficiently reliable to base the secondary standard on that low level of tree growth loss. *See* 80 Fed. Reg. at 65,394.

The Environmental Petitioners passingly disparage EPA's assessment of the studies associated with CASAC's 2% growth loss target, but that argument is equally unavailing. EPA reasonably explained why it thought those studies were unreliable, and its "evaluation of 'scientific data within its technical expertise'" is entitled significant deference. *See Miss. Comm'n on Envtl. Quality v. EPA*, 790 F.3d 138, 150, 155-56 (D.C. Cir. 2015) (quoting *City of Waukesha v. EPA*, 320 F.3d 228, 247 (D.C. Cir. 2003)). For instance, in support of its advice that EPA consider limiting median annual tree growth loss to 2%, CASAC highlighted a study purporting to show that stands of aspen that experienced ozone-induced biomass loss of 2% annually had cumulative biomass loss of 21% over seven years, suggesting that even relatively minor

annual growth loss can lead to significant loss over longer periods of time. J.A. 537. But CASAC had misread the study. As EPA explained, the aspen in that study in fact experienced more than 20% biomass loss annually, suggesting that their cumulative biomass loss was not much worse than their loss in any single year. 80 Fed. Reg. at 65,394.

EPA also clarified that the only other report CASAC relied on for its 2% target recommendation provided no explicit rationale for selecting that level and did not identify any new data in support of its recommendations. *See id.* at 65,394-95 & n.200. While it is true that EPA has cited that same report favorably in the past, *see, e.g.*, National Ambient Air Quality Standards for Ozone, 75 Fed. Reg. 2,938, 3,025 (Jan. 19, 2010), that alone does not make EPA's current assessment arbitrary. EPA must simply provide a "reasoned explanation" for its departure from its past position—which it has done. *See Encino Motorcars, LLC v. Navarro*, 136 S. Ct. 2117, 2125-26 (2016); *see also Mississippi*, 744 F.3d at 1351.

ii. *EPA did not adequately explain its decision to use a three-year average of the W126 index as the benchmark.*

The Environmental Petitioners raise two challenges pertaining to the W126 index, both as a benchmark and as a form and averaging time. First, they argue that EPA impermissibly departed from CASAC's advice by setting the secondary standard level using a three-year average W126 benchmark without lowering the level to protect against single-year exposures associated with median annual tree growth loss of 6%, which CASAC had advised was "unacceptably high." J.A. 518. They also contend that EPA arbitrarily disregarded CASAC's advice to adopt the W126 index as the form and

averaging time for the secondary standard. We remand to EPA on the first issue and do not reach the second.

The Three-Year Average Benchmark. CASAC advised EPA that basing the secondary standard on a "single-year period" would provide "more protection for annual crops and for the anticipated cumulative effects on perennial species" than a three-year average. J.A. 518. It explained that EPA's proposal to use a three-year averaging period was "not supported by the available data," J.A. 536, and that if EPA chose to "base the secondary standard on a three-year averaging period," then "the level of the standard should be revised downward such that the level for the highest three-month summation in any given year of the three-year period would not exceed [its] scientifically recommended" range of single-year, W126 exposure levels, J.A. 518. This was necessary, CASAC explained, to "protect against single unusually damaging years that will be obscured in the average." J.A. 536.

EPA argues it gave effect to CASAC's recommendation by using a three-year average benchmark of 17 ppm-hrs, which, after adjusting for the cottonwood data, was "somewhat below" the 19 ppm-hrs associated with 6% annual growth loss that CASAC had advised was "unacceptably high." 80 Fed. Reg. at 65,406-07 (quoting J.A. 518). But CASAC had advised a maximum level associated with 5.2% annual biomass loss, *see* J.A. 631, and it expressly cautioned that 6% median growth loss in a *single year* was unacceptable, *see* J.A. 518. EPA's use of a benchmark that *averages out* to less than 6% biomass loss over three years does not accord with CASAC's advice. Indeed, as commenters informed EPA during the rulemaking, *see* J.A. 1836-40, EPA's own air quality data suggests that many large national parks and wilderness areas that have met EPA's chosen three-year average 17 ppm-hrs benchmark—

areas that Congress considers significant to the public welfare, *see* 42 U.S.C. §§ 7470(2), 7472(a)—have meanwhile recorded single-year W126 values at and above 19 ppm-hrs, which is associated with "unacceptably high" *annual* biomass loss of 6% and higher. *See* J.A. 1061-64; 80 Fed. Reg. at 65,391. EPA critiques that data as marred by outdated handling procedures, but the agency acknowledged that other data derived through updated procedures produced results "similar to" those showing harmful exposure spikes. J.A. 1213. Critically, EPA points us to no data or analysis (based on new or old procedures) suggesting that the chosen benchmark prevents single seasonal exposures of 19 ppm-hrs or higher. In short, EPA has not demonstrated how its chosen benchmark protects against "unusually damaging years that will be obscured in the average." J.A. 536.

EPA alternatively defends its decision to use the three-year-average benchmark as providing a focus on public welfare effects of "potentially greater" significance than effects "associated with a single year" of exposure. 80 Fed. Reg. at 65,404. This position, however, is inconsistent with EPA's other actions. In establishing the secondary standard, for example, EPA heavily relied on data showing *annual* 6% median tree growth loss at 19 ppm-hrs, *see id.* at 65,406, and acknowledged the potential for a single season of high ozone exposure to "alter biomass allocation and plant reproduction in seasons subsequent to [that season's] exposure," thereby leading to "a negative impact on species regeneration in subsequent years," *id.* at 65,371-72; *see also* J.A. 740-41. EPA additionally recognized that "ozone effects in plants are cumulative," *id.* at 65,373 (quoting EPA, *Integrated Science Assessment* 2-44 (2013)), meaning that the adverse vegetative effects from single, high-ozone years are not offset by subsequent low-ozone years. EPA has identified no contrary

evidence in the record demonstrating why these single-year effects matter less than a three-year average.

We therefore remand this issue for EPA to either lower the standard to protect against unusually damaging cumulative seasonal exposures that will be obscured in its three-year average, or explain its conclusion that the unadjusted average is an appropriate benchmark notwithstanding CASAC's contrary advice. Alternatively, EPA could adopt the single-year W126 exposure index as the form and averaging time, which would presumably moot any problems with the way it translated that index to use as a benchmark.

The Form and Averaging Time. CASAC also recommended that EPA use the single-year W126 index as the form and averaging time for the secondary standard. J.A. 518. EPA instead chose to retain the existing form and averaging time—the three-year average of the fourth-highest daily maximum eight-hour concentration. Adopting the W126 index as the form and averaging time was unnecessary, EPA explained, because the ozone exposure levels associated with the existing form and averaging time and a three-year average of the W126 index are "highly correlated," especially at lower levels, and "future control programs designed to help meet a primary [ozone] standard based on the" current form and averaging time should "provide similar improvements in terms of the 3-year average of the annual W126 metric." J.A. 1253; *see also* 80 Fed Reg. at 65,400-01, 408-09.

The Environmental Petitioners argue that EPA did not justify its decision not to adopt the W126 index as the form and averaging time. We lack any basis to assess the reasonableness of EPA's actions, however, because a critical piece of the puzzle is missing. To review: EPA chose not to use the W126 index as the form and averaging time because it found that

ozone exposure levels associated with the existing form and averaging time are "highly correlated" to a three-year average of the W126 index. But, as discussed, EPA never explained why it is reasonable to focus on a three-year average of the W126 index in the first place. Therefore, we cannot assess the relevance of the claim that the two are "highly correlated." EPA's reconsideration on remand of the three-year averaging issue should supply us with the information necessary to resolve this question, or, if EPA chooses to follow CASAC's advice to lower the standard to control for unusually high single years, potentially moot the Environmental Petitioners' concern that the current form tolerates even three-year average W126 levels higher than 17 ppm-hrs during periods when a 0.07 ppm, 8-hour level is met. Accordingly, we decline to reach this question.

iii. *EPA arbitrarily failed to identify a level of air quality requisite to protect against adverse effects from visible leaf injury.*

The Environmental Petitioners also fault EPA for deciding not to specify a level of air quality to protect against adverse welfare effects from ozone-induced visible leaf injury. Because EPA failed to offer a reasoned explanation, we remand for it to reconsider.

EPA has found that the "strongest evidence for effects from [ozone] exposure on vegetation is from controlled exposure studies, which 'have clearly shown that exposure to [ozone] is causally linked to visible foliar injury.'" 80 Fed. Reg. at 65,370 (quoting EPA, *Integrated Science Assessment* 1-15). Relying on that evidence, CASAC advised EPA of its "scientific judgment" that "a level of 10 ppm-hrs is required to reduce foliar injury." J.A. 538. EPA nonetheless concluded that there were too many "uncertainties and complexities" in

the evidence to specify a level of air quality to protect against leaf injury. *See* 80 Fed. Reg. at 65,407-08. But the mere invocation of "substantial uncertainty" is not a justification for the agency's failure to fulfill its statutory mandate. *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 52 (1983) (internal quotation marks omitted). EPA "must explain the evidence which is available, and must offer a 'rational connection between the facts found and the choice made.'" *Id.* (quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962)). Where CASAC has "reached a scientific conclusion that adverse [welfare] effects [are] likely to occur," EPA must "explain why the evidence on which CASAC relied cannot support the degree of confidence CASAC placed in it." *Mississippi*, 744 F.3d at 1357; *see also Am. Farm Bureau Fed'n v. EPA*, 559 F.3d 512, 529-30 (D.C. Cir. 2009). We defer to EPA's judgment that the available evidence is too uncertain only when the agency reasonably explains its decision, *see State Farm*, 463 U.S. at 51-53, and EPA has failed to carry that burden here.

None of the identified uncertainties justifies EPA's decision not to set a standard to protect against visible leaf injury. For instance, EPA argues that it lacked criteria for assessing the welfare effects of visible leaf injury, but that does not square with its conclusion in the Integrated Science Assessment (compiling all available scientific criteria) that visible leaf injury "has been well characterized and documented over several decades." J.A. 985-86. EPA had at its fingertips a wealth of new data regarding visible leaf injury, including new controlled exposure studies, multiyear field surveys, and biomonitoring data of ozone-induced visible leaf injury on public lands. J.A. 749. Using that data, EPA analyzed how visible leaf injury affects "ecosystem services" like aesthetic value and recreation on "Class I" lands—lands that "have particular public welfare significance." J.A. 749-50,

1036-44; *see also* 42 U.S.C. §§ 7470(2), 7472(a). CASAC pointed out that those same ecosystem services are relevant in identifying "damage that is adverse to public welfare." J.A. 532-33.

CASAC concluded, based on the same data available to EPA, that "a level of 10 ppm-hrs is required to reduce foliar injury." J.A. 538. EPA counters that "decreases in leaf injury [also occur] with decreasing ozone exposures across a range of values well above 10 ppm-hrs," and that CASAC recommended a range of ozone levels that included values above 10 ppm-hrs. *See* EPA Br. 89; 80 Fed. Reg. at 65,395-96. Be that as it may, EPA has not explained why, unlike CASAC, it was unable to choose a level at all. Indeed, "[b]ecause the EPA failed to identify any target level, we need not decide whether it was reasonable for the agency to reject the target recommended by . . . CASAC." *Am. Farm Bureau*, 559 F.3d at 530.

EPA objects that it only found that visible leaf injury has the "*potential* to be adverse to the public welfare," and that the Clean Air Act does not require EPA "to identify a precise, quantified level of public welfare protection for every potentially adverse public welfare impact" it considers when revising the secondary standard. EPA Br. 87-88 (first quoting 80 Fed. Reg. at 65,388). But EPA has failed to justify its inaction where CASAC unequivocally found that "damage to resource use from foliar injury" was an "adverse welfare effect." J.A. 518. In light of CASAC's "scientific conclusion that adverse [welfare] effects were likely to occur" from visible leaf injury, EPA's inaction in the face of such effects is "unacceptable." *Mississippi*, 744 F.3d at 1357. Nor was it sufficient for EPA simply to conclude that the standard set to protect against tree growth loss sufficed because it provided "additional" protection against leaf injury. 80 Fed. Reg. at

65,407-08. Nothing in the record suggests that tree growth loss is a surrogate for leaf injury. EPA's assurance that the standard set to protect against tree growth loss will provide "incidental[]" protection against visible leaf injury "cannot save its decision." *Am. Farm Bureau*, 559 F.3d at 529-30.

Other purported uncertainties do not support EPA's inaction. For instance, EPA asserts that the Administrator "lacked evidence that would allow her to measure the relationship between leaf injury and other vegetation effects that she might find adverse," EPA Br. 87, but EPA and CASAC both determined that visible leaf injury itself can "impact the public welfare" by harming "aesthetic value and outdoor recreation" in public lands, 80 Fed. Reg. at 65,379; J.A. 533. Visible leaf injury impairs a variety of outdoor activities, including "scenic viewing, wildlife watching, hiking, and camping, that are of significance to the public welfare" and generate "millions of dollars in economic value" annually. 80 Fed. Reg. at 65,381; J.A. 749. Much of the documented visible leaf injury is in Class I areas, *see* 80 Fed. Reg. at 65,378, the preservation and enjoyment of which is a "clear public interest," *id.* at 65,377 (quoting 73 Fed. Reg. at 16,496). Those interests are manifest whether or not the relationship between leaf injury and other vegetative effects has been well characterized.

This case is a far cry from *Center for Biological Diversity v. EPA*, where we upheld EPA's determination that the available data was too uncertain to support setting a standard for acid rain precursors. 749 F.3d 1079 (D.C. Cir. 2014). In the administrative record in that case, EPA "explained in great detail" why the scientific uncertainties were so "unusually profound" that EPA "could not form" a reasoned judgment as to a requisite level of protection. *Id.* at 1088, 1090-91. CASAC concurred with that assessment. *Id.* at 1086 n.11. Here, in

contrast, CASAC expressed its scientific judgment that a target level of 10 ppm-hrs was "required to reduce" leaf injury. J.A. 538. EPA's failure to explain why it could not accept data that CASAC deemed informative falls short of reasoned decisionmaking.

B. Industry Petitioners' Challenge

The Industry Petitioners glancingly claim that EPA failed to explain why, when faced with the same scientific evidence that was available in 2008, it revised the secondary standard downward. As we have explained in reference to the primary standard, it is a "conceptual error" to assume that "EPA is somehow bound by" a prior standard in a subsequent review. *Mississippi*, 844 F.3d at 1344. What is more, EPA did in fact rely on new scientific evidence, including more than 400 new studies and various new analyses of existing data, which "strengthen[ed] [its] confidence" that the 2008 secondary standard was no longer as demanding as was "requisite" to protect the public welfare. *See* 80 Fed. Reg. at 65,369-70, 65,384. "[A]dditional certainty . . . that the line marked by the term 'requisite' has shifted" is a reasonable—if not paradigmatic—basis for EPA to revise its prior standards. *Mississippi*, 844 F.3d at 1344.

IV. Cross-Cutting NAAQS Challenges

We now turn to the arguments of State and Industry Petitioners that EPA failed to take into account all the factors required by law when setting the primary and secondary standards. First, they fault EPA for not considering the "overall adverse economic, social, and energy impacts" of the revised NAAQS. Second, they argue that the Clean Air Act requires EPA to consider the impact of background ozone on the ability of states to attain the revised NAAQS. And, lastly, they argue that EPA's interpretation of the Act, which excluded

consideration of background ozone, leaves no "intelligible principle" by which to set NAAQS, creating a constitutional nondelegation issue. None of these arguments has merit.

A. Adverse Impacts

According to section 109(b) of the Clean Air Act, EPA must set the NAAQS at a level "requisite to protect the public health" and "the public welfare." 42 U.S.C. § 7409(b). The NAAQS should be revised periodically "as may be appropriate." *Id.* § 7409(d)(1). Industry Petitioners invoke the term "appropriate" and claim that "an evaluation of 'appropriateness' must take into account the adverse socioeconomic and energy impacts" of the revised NAAQS. Indus. Pet'rs Br. 33. To bolster this argument, they point to *Michigan v. EPA*, which held that the phrase "appropriate and necessary" in section 112(n) of the Act—governing power plants' hazardous air pollution—"requires at least some attention to cost" because "'appropriate' is 'the classic broad and all-encompassing term that naturally and traditionally includes consideration of all the relevant factors.'" 135 S. Ct. at 2707 (quoting *White Stallion Energy Ctr., LLC v. EPA*, 748 F.3d 1222, 1266 (D.C. Cir. 2014) (Kavanaugh, J., concurring in part and dissenting in part)).

In *Whitman*, the Supreme Court considered a similar argument regarding NAAQS-setting, with challengers asserting that the words "requisite" and "adequate" in section 109(b)(1) meant that EPA must consider the economic costs of implementing revised NAAQS. 531 U.S. at 468. The *Whitman* Court rejected this reading, finding that the plain text of the Act "unambiguously bars cost considerations from the NAAQS-setting process." *Id.* at 471. The text of the Act refers only to the "public health," and though it uses the terms "requisite" and "adequate," the *Whitman* Court found it "implausible that

Congress would give to the EPA through these modest words the power to determine whether implementation costs should moderate national air quality standards," especially given that other Clean Air Act provisions "explicitly permit[] or require[] economic costs to be taken into account in implementing [other] air quality standards." *Id.* at 467-68.

According to *Whitman,* the Act commands EPA to follow a specific process when setting primary NAAQS: "[I]dentify the maximum airborne concentration of a pollutant that the public health can tolerate, decrease the concentration to provide an 'adequate' margin of safety, and set the standard at that level." *Id.* at 465. Industry Petitioners argue that this account of the NAAQS-setting process is incomplete, and that consideration of other "adverse economic, social, and energy impacts" is required. But at bottom this is the same argument rejected in *Whitman*, with the "costs" of the revised and more stringent NAAQS merely reframed as "impacts." In listing those impacts, Industry Petitioners emphasize that stricter standards could reduce gross domestic product, drive up energy costs, "stymie economic growth by forcing the early retirement of facilities unable to implement controls, contributing to job losses[,] discourag[e] existing businesses from expanding in nonattainment regions[,] and driv[e] away potential new investments," Indus. Pet'rs Br. 35, but these "impacts" are no different than the "economic costs" that the petitioners in *Whitman* worried "might produce health losses sufficient to offset the health gains achieved in cleaning the air—for example, by closing down whole industries and thereby impoverishing the workers and consumers dependent upon those industries," 531 U.S. at 466. *Whitman* forbids EPA from taking these considerations into account, however denominated.

As for Petitioners' reliance on *Michigan* and the Act's use of the word "appropriate," that argument fails twice over. We have already rejected the idea that "appropriate" in section 109(d) requires consideration of economic costs. *Am. Trucking Ass'ns, Inc. v. EPA*, 175 F.3d 1027, 1040-41 (D.C. Cir. 1999). Further, *Michigan* involved a different provision of the Clean Air Act, and the Court was careful to emphasize that its reading of "appropriate" was dependent on the statutory context, explaining that "[t]here are undoubtedly settings in which the phrase 'appropriate and necessary' does not encompass cost." 135 S. Ct. at 2707. Indeed, *Michigan* explicitly distinguished section 112(n) from section 109(b)(1), explaining yet again that the criteria for setting NAAQS "do[] not encompass cost." *Id.* at 2709.

Industry Petitioners also point to section 109(d)(2)(C) of the Act, which requires CASAC to advise EPA "of any adverse public health, welfare, social, economic, or energy effects which may result from various strategies for attainment and maintenance" of revised NAAQS. 42 U.S.C. § 7409(d)(2)(C). According to Petitioners, the fact that CASAC is required to supply information to EPA about the "social, economic, or energy effects" of the revised NAAQS implies that EPA is obliged to consider that information in setting the NAAQS. That argument, however, was also raised and rejected in *Whitman*, where the Supreme Court concluded that this provision was intended to "enable the [EPA] to assist the States in carrying out their statutory role as primary *implementers* of the NAAQS," but had "no bearing upon whether cost considerations are to be taken into account in *formulating* the [NAAQS]." 531 U.S. at 470-71 (second emphasis added).

Petitioners' remaining arguments rely heavily on Justice Breyer's concurrence in *Whitman*, in which he urged that the Act "does not require the EPA to eliminate every health risk,

however slight, at any economic cost, however great, to the point of hurtling industry over the brink of ruin, or even forcing deindustrialization." *Id.* at 494 (Breyer, J., concurring in part and concurring in the judgment) (internal quotation marks omitted). But the concurrence does not govern our decision, and in any event, Justice Breyer agreed with the majority that economic costs could not be considered in setting NAAQS. *Id.* at 490.

B. Background Ozone

Under the Clean Air Act, "background ozone" is ozone "that would exist in the absence of any man-made emissions inside the U.S." 80 Fed. Reg. at 65,436. This includes ozone generated by both natural sources anywhere (*e.g.*, a wildfire) and foreign man-made sources (*e.g.*, a factory in Mexico). *See id.* According to the Industry and State Petitioners, EPA failed to take into account background ozone when setting the new NAAQS. As a result, certain areas of the country with high levels of background ozone fail right off the bat to meet the new standards, which is unlawful, Petitioners argue, because the Act requires EPA to set NAAQS that are attainable. Therefore, they contend EPA's failure to consider background ozone when revising the NAAQS was arbitrary and capricious.

The text of the Act forecloses this argument. Section 109(b) directs EPA to set NAAQS "requisite to protect the public health" and "the public welfare." 42 U.S.C. § 7409(b). Accepting Petitioners' argument would mean that, if the level of background ozone in any part of the country exceeds the level of ozone that is "requisite to protect the public health," EPA must set the NAAQS at the higher, unhealthy level. The statutory text leaves no room for this hidden caveat: "[W]hen Congress directs an agency to consider only certain factors in reaching an administrative decision, the agency is not free to

trespass beyond the bounds of its statutory authority by taking other factors into account." *Lead Indus.*, 647 F.2d at 1150.

Petitioners argue that states cannot be required to do the impossible, and the presence of background ozone will make it impossible to achieve attainment. But Congress recognized the possibility that some states could not achieve attainment because of the presence of background ozone and, rather than watering down the nationally applicable standards, allowed EPA to relax enforcement on a case-by-case basis. When ozone exceedances are caused by events beyond a state's control, three enforcement exceptions in the Act allow the state some leeway as a practical matter: A showing of an "Exceptional Event" may allow a state to avoid a nonattainment designation. *See* 42 U.S.C. § 7619(b) (defining "exceptional event" as one caused by "human activity that is unlikely to recur at a particular location" or "a natural event," and that "affects air quality" but is "not reasonably controllable or preventable"). And a state that meets the requirements of either the "International Transport" or "Rural Transport" provision may avoid having its state implementation plan (SIP) rejected due to the exceedance. *See id.* §§ 7509a(a)-(b) (directing EPA to approve a SIP if attainment is not met due to "emissions emanating from outside of the United States"), 7511a(h) (excluding nonattainment regions that themselves "do not make a significant contribution" to ozone levels, so long as they are not within or next to a "Metropolitan Statistical Area"). These provisions make little sense under Petitioners' reading of the Act. And even if, as the states claim, it is more difficult to meet the terms of these exceptions than EPA asserts, State Pet'rs Br. 34-44, the fact remains that Congress decided that EPA should account for background ozone during enforcement, not when setting standards.

We rejected a version of Petitioners' argument in *American Petroleum Institute v. Costle*, 665 F.2d 1176 (D.C. Cir. 1981). There, the City of Houston urged us to find that EPA's primary ozone standard was arbitrary because "natural factors ma[de] attainment impossible" for that City. *Id.* at 1185. We emphasized that "Congress [was] aware that some regions [were] having difficulty in meeting the national standard," and had responded not by requiring EPA to ease the NAAQS but by developing a distinct program for nonattainment areas that gives states resources to bring those areas into compliance while also protecting the public health and welfare. *Id.* at 1185-86. Industry Petitioners argue that *Costle*, a case about one city, is not binding when "*numerous areas* of the country cannot attain the NAAQS due to background levels" of ozone. Indus. Pet'rs Br. 26-27 (emphasis added). But neither our precedent nor the Act allows for such a distinction. Indeed, in *Costle*, we rejected the argument that EPA had ignored comments related to the issue of whether "attainment of the proposed standards would be precluded in *most areas* of the nation by natural background levels of ozone." 665 F.2d at 1190 (emphasis added) (internal quotation marks omitted). Simply put, "the question of attainability is not relevant to the setting of ambient air quality standards under the Clean Air Act." *Id.*

State Petitioners argue that *Costle* is distinguishable because the petitioner there was not a state, and several parts of the Act place the burden to attain NAAQS on states rather than cities. Indus. Pet'rs Br. 25-26 (citing 42 U.S.C. §§ 7407(a), 7410(a)(2)(C)); State Pet'rs Br. 32-33 (citing 42 U.S.C. § 7407(a)). True, if Houston cannot attain NAAQS due to background ozone, the Act places the burden on Texas, not the City, to identify a plan to bring the area into attainment. But *Costle* was not limited to its particular facts—it relied instead on the premise that "[a]ttainability and technological feasibility

are not relevant considerations in the promulgation of [NAAQS]," 665 F.2d at 1185, a premise that does not change whether it is a state or city arguing that the NAAQS are unattainable. Congress intended NAAQS to be *national* ambient air quality standards, and EPA is not required to "tailor national regulations to fit each region or locale." *Id.* Because the Clean Air Act prohibits EPA from adjusting for background ozone in setting the NAAQS, EPA did not act unlawfully or arbitrarily and capriciously in setting the NAAQS without regard for background ozone.

C. Nondelegation

Finally, State Petitioners argue that EPA's interpretation of the Clean Air Act runs afoul of the Constitution's limit on the authority of Congress to delegate lawmaking power to an agency. "Congress generally cannot delegate its legislative power to another Branch" unless it provides an "intelligible principle" for the agency to follow in exercising that delegated power. *Mistretta v. United States*, 488 U.S. 361, 372 (1989) (second quoting *J.W. Hampton, Jr., & Co. v. United States*, 276 U.S. 394, 409 (1928)). We refer to this as the nondelegation doctrine. *Id.*

State Petitioners do not argue that the Act lacks an intelligible principle. Nor could they, as the Supreme Court held in *Whitman* that Congress provided one when it directed EPA to set NAAQS "requisite to protect public health"—meaning "sufficient, but not more than necessary." 531 U.S. at 473-74 (internal quotation marks omitted). Instead, Petitioners claim that EPA's *interpretation* of the Act has *created* a nondelegation problem by "ignor[ing] the 'intelligible' principle[] that Congress provided." State Pet'rs Br. 45. But in a nondelegation challenge, "the constitutional question is whether the *statute* has delegated legislative power to the

agency." *Whitman*, 531 U.S. at 472 (emphasis added). EPA cannot alter the text of the Clean Air Act, so EPA's interpretation of the Act cannot alter whether the Act included an intelligible principle. *Cf. id.* at 473 ("Whether the statute delegates legislative power is a question for the courts, and an agency's [interpretation] has no bearing upon the answer."). There is no nondelegation issue here.

V. Grandfathering Challenge

Finally, we address EPA's decision to allow those who completed applications for preconstruction permits before the 2015 Rule was adopted to demonstrate compliance with the previous NAAQS rather than the new, more stringent standards. *See* 80 Fed. Reg. at 65,431-35; 40 C.F.R. §§ 51.166(i)(11), 52.21(i)(12). The Environmental Petitioners argue that this "grandfathering" provision violates the Clean Air Act, which requires permit applicants to demonstrate compliance with "any" NAAQS regardless of when their application was completed. *See* Envtl. Pet'rs Br. 57-62. EPA argues that the Act is ambiguous with respect to the treatment of permit applications pending at the time that new NAAQS are adopted, and that the grandfathering provision is lawful as a reasonable interpretation of the Act. We find no such ambiguity.

Under section 165(a) of the Act, before beginning construction of any "major emitting facility," the owner or operator must demonstrate "that emissions from construction or operation of such facility will not cause, or contribute to, air pollution in excess of any . . . national ambient air quality standard." 42 U.S.C. § 7475(a). This "demonstration requirement" is part of EPA's PSD program. Generally, EPA requires permit applicants to demonstrate compliance with the NAAQS in effect at the time a permit is issued. 80 Fed. Reg.

at 65,433; EPA Br. 130. The revised ozone NAAQS were effective on December 28, 2015, so under the usual rule no permit could be granted for the construction of a major emitting facility after that date unless the operator demonstrated that the facility would not cause or contribute to ozone levels in excess of the revised NAAQS. But when EPA issued the 2015 Rule, it waived that requirement for projects that either (1) had complete permit applications as of October 1, 2015, or (2) had a draft permit or preliminary determination publicly noticed before December 28, 2015.[1] *See* 80 Fed. Reg. at 65,460 (codified at 40 C.F.R. §§ 51.166(i)(11), 52.21(i)(12)).

In the 2015 Rule, EPA asserted the need for this grandfathering provision because section 165(c) of the Act instructs EPA and state permitting authorities that "[a]ny completed permit application . . . shall be granted or denied not later than one year after the date of filing such completed application." 42 U.S.C. § 7475(c). As EPA sees it, requiring applicants with already-completed permit applications to demonstrate compliance with the newly revised NAAQS "could hinder compliance with the requirement under section 165(c) to issue a permit within one year." 80 Fed. Reg. at 65,433-34. According to EPA, the Act does not "clearly address" how to handle such a situation, therefore it was "permissible under the discretion provided by the [Act] for the EPA to craft a reasonable implementation regulation that balances competing objectives of the statutory PSD program." *Id.* at 65,433.

We evaluate EPA's interpretation of the Act under *Chevron*. "If the Act unambiguously authorizes or forecloses EPA's . . . rule, step one of the *Chevron* analysis requires that

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[1] The second type of waiver was necessary because not all agencies that issue preconstruction permits issue formal completeness determinations. *See* 80 Fed. Reg. at 65,432-33.

we follow Congress's express policy choice. If the Act is unclear on the matter, step two of *Chevron* requires that we defer to EPA's reasonable interpretation." *Sierra Club v. EPA*, 536 F.3d 673, 677 (D.C. Cir. 2008) (citing *Chevron*, 467 U.S. at 842-43). We hold, under step one of *Chevron*, that the Act unambiguously precludes EPA's interpretation of section 165(a) and vacate the grandfathering provision of the Final Rule.

The revised NAAQS were effective on December 28, 2015. As a result of the grandfathering provision, a major emitting facility that demonstrates compliance with the previous NAAQS of 0.075 ppm, but not the revised NAAQS of 0.07 ppm, can still be built even after the new NAAQS take effect, provided the project had completed its application within certain time limits. That is exactly what the plain text of the Act forbids: the "construction" of a "major emitting facility" with emissions that will "cause, or contribute to, air pollution in excess of *any* . . . [NAAQS]." 42 U.S.C. § 7475(a) (emphasis added). "Read naturally, the word 'any' has an expansive meaning, that is 'one or some indiscriminately of whatever kind.'" *United States v. Gonzalez*, 520 U.S. 1, 5 (1997) (quoting WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 97 (1976)). EPA gives no reason why, in the context of section 165(a), the word "any" should not carry its natural meaning and hence refer to the newly revised NAAQS once they have become effective.

In *New York v. EPA*, we observed that the meaning of "any" can differ if, for instance, the "Supreme Court has required heightened standards of clarity to avoid upsetting fundamental policies," or if there would be "'strange and indeterminate results' that would emerge from adopting the natural meaning of 'any'" in a statute. 443 F.3d 880, 885-86 (D.C. Cir. 2006) (quoting *Nixon v. Mo. Mun. League*, 541 U.S.

125, 132-33 (2004)). But none of those factors is present here. Indeed, NAAQS are set based on the "maximum airborne concentration of a pollutant that the public health can tolerate," *Whitman*, 531 U.S. at 465, so the "strange" result would be if the Act, focused as it is on the protection of public health, left the door open for construction projects that will cause or contribute to ozone levels higher than the "public health can tolerate." Thus, we read section 165(a) to forbid construction of any facility that cannot demonstrate compliance with "any" effective NAAQS.

There is no ambiguity created by reading section 165(a) alongside the timeliness requirement of section 165(c). EPA thought the grandfathering provision necessary to allow permitting authorities to "issue a permit within one year." 80 Fed. Reg. at 65,433-34. But the Act does not require that a permit be "*issued*" within one year. It requires only that the permitting authority "grant[] *or* den[y]" completed permit applications within one year. 42 U.S.C. § 7475(c) (emphasis added). "[N]othing in the [Act] provides for issuance of a [] permit as a matter of right." *Am. Corn Growers Ass'n v. EPA*, 291 F.3d 1, 12 (D.C. Cir. 2002) (internal quotation marks omitted). If a permit applicant has not shown that it can meet the new NAAQS, EPA or a state permitting authority can comply with the timeliness requirement of section 165(c) by denying the application.

This reading is confirmed by the structure of the Act. When amending the Act to add section 165(a)'s demonstration requirement, Congress expressly exempted projects that had begun construction prior to passage of that amendment. *See* 42 U.S.C. § 7475(a); Pub. L. No. 95-95, § 127(a), 91 Stat. 685, 735-39 (Aug. 7, 1977). The inclusion of this grandfather clause implies that Congress did not intend EPA to have some inherent grandfathering authority, and that, in the future,

NAAQS would be enforced as enacted. *See Andrus v. Glover Constr. Co.*, 446 U.S. 608, 616-17 (1980) ("Where Congress explicitly enumerates exceptions to a general prohibition, additional exceptions are not to be implied, in the absence of evidence of a contrary legislative intent."). Congress has spoken on this question, and EPA cannot displace the statutory determination simply because the agency's "preferred approach [might] be better policy." *See Engine Mfrs. Ass'n v. EPA*, 88 F.3d 1075, 1089 (D.C. Cir. 1996). Nor does it matter that EPA has evidently relied on this grandfathering authority in the past. *See, e.g.*, National Ambient Air Quality Standards for Particulate Matter, 78 Fed. Reg. 3,086, 3,258-59 (Jan. 15, 2013) (adopting grandfathering provision for revised NAAQS); Regulations for Implementing Revised Particulate Matter Standards, 52 Fed. Reg. 24,672, 24,683 (July 1, 1987) (same). "[P]revious statutory violations cannot excuse the one now before the court." *New Jersey v. EPA*, 517 F.3d 574, 583 (D.C. Cir. 2008).

The Ninth Circuit addressed a related issue in *Sierra Club v. EPA*, 762 F.3d 971 (9th Cir. 2014). EPA had failed to grant or deny a completed permit application within one year as required by section 165(c), and in the meantime the agency had lowered the relevant NAAQS. *See id.* at 974-75. After the applicant filed suit to compel issuance of the permit under the old standards, EPA initially took the position—contrary to its stance here, but consistent with our holding—that the Act prohibited it "from granting the Permit unless [the applicant] complies with the superseding standards." *Id.* at 975. Then, after a "policy review," EPA changed its mind and asserted "inherent grandfathering authority," *id.*, relying on the alleged tension that it advances here between sections 165(a) and (c), *see id.* at 978. The Ninth Circuit discerned no such tension and held that, under *Chevron* step one, EPA must "apply the

regulations in effect at the time of the permitting decision." *Id.* at 979.

After concluding that EPA had violated the plain terms of the Act, the *Sierra Club* court added in dicta that the agency could create a grandfathering exception through "formal notice and comment rulemaking." *Id.* at 982. The Ninth Circuit cited 42 U.S.C. § 7601(a), which includes a general grant of authority to the EPA Administrator to "prescribe such regulations as are necessary" to carry out the Act. EPA argues that we should follow the Ninth Circuit's dicta because EPA used formal rulemaking to grandfather these applications. But we decline to do so. Dicta is never binding on any court, *Glus v. Brooklyn E. Dist. Terminal*, 359 U.S. 231, 235 (1959), nor is it persuasive here, because it is fundamentally incorrect. A general grant of authority cannot displace the clear, specific text of the Act. *Air All. Hous. v. EPA*, 906 F.3d 1049, 1061 (D.C. Cir. 2018) ("[A]n agency may not circumvent specific statutory limits on its actions by relying on separate, general rulemaking authority."). As the *Sierra Club* court recognized, the Act requires compliance with the NAAQS that are in effect "at the time of the permitting decision." 762 F.3d at 979. EPA has no authority to change that provision of the Act, whether by ad hoc waiver or rulemaking. *See also Citizens to Save Spencer Cty. v. EPA,* 600 F.2d 844, 873 (D.C. Cir. 1979) (explaining that a general power cannot "provide the [EPA] Administrator with Carte blanche authority to promulgate any rules, on any matter relating to the [Act], in any matter that the Administrator wishes").

The grandfathering provision of the 2015 Rule, as codified at 40 C.F.R. §§ 51.166(i)(11) and 52.21(i)(12), contradicts Congress's "express policy choice" not to allow construction which will "cause or contribute to" nonattainment of "any" effective NAAQS, regardless of when they are adopted or

when a permit was completed. Accordingly, we grant the petition for review with respect to the grandfathering provision, and vacate that portion of the Rule.

* * *

In setting the secondary standard, EPA failed to justify its decision to use a three-year average benchmark without lowering the level to account for single-year spikes in ozone exposures, and it arbitrarily declined to set a level to protect against adverse welfare effects associated with visible leaf injury. EPA also impermissibly allowed sources that had completed applications for preconstruction permits before the 2015 Rule was adopted to demonstrate compliance with the previous NAAQS rather than the new, more stringent primary and secondary standards. Accordingly, we grant those portions of the Environmental Petitioners' petition, vacate the grandfathering provision, and remand to EPA for reconsideration of the secondary standard.

So ordered.

CHAMBER OF COMMERCE
OF THE
UNITED STATES OF AMERICA

NEIL L. BRADLEY
EXECUTIVE VICE PRESIDENT &
CHIEF POLICY OFFICER

1615 H STREET, NW
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August 29, 2019

Elaine Chao, Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Andrew Wheeler, Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W
Washington, DC 20460

Mary Nichols, Chair
California Air Resources Board
1001 I Street, Sacramento, CA 95814
P.O. Box 2815, Sacramento, CA 95812

Dear Secretary Chao, Administrator Wheeler, and Chair Nichols:

The U.S. Chamber of Commerce urges you to redouble efforts to identify a workable path forward on light duty vehicle fuel economy and greenhouse gas standards that provides regulatory certainty, continues progress on mileage and emissions reductions, and preserves a unified national program for vehicle sales.

This framework, known as One National Program, or ONP, has allowed for efficient regulatory compliance and a smoothly functioning marketplace under which manufacturers can sell the same vehicles across all 50 states. This significantly reduces vehicle design, supply chain, and distribution costs. As you know, however, ONP is now on the brink of potential dissolution into a patchwork of incompatible state and federal standards.

The attached Chamber report, *Divided Highway: the Importance of Uniform, Achievable Nationwide Automobile Standards*, summarizes the importance of maintaining ONP and the potentially serious disruptions to automobile markets, consumers, and the broader economy that could occur in the event of its dissolution. The ramifications of such a scenario include exacerbation of existing market uncertainties, delayed investment in and realization of safety and emissions improvements, increased consumer costs, and job losses across the auto sector, its extensive supply chain, and associated industries.

There is a growing consensus that the current standards, which require steep annual mileage improvements through model year 2025, are not reasonably achievable and must be significantly revised. It is also clear that the administration's proposal to hold standards flat beginning in

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model year 2020 is insufficient—continued progress on fuel economy and emissions reductions can be achieved without undue harm to the economy, and predictable year-over-year efficiency improvements are key to enabling the U.S. to maintain environmental and manufacturing leadership. The Chamber supports robust efforts to continue such fuel economy gains, recognizing that they must proceed at a more modest pace due to factors in the changing market dynamics that were not envisioned in 2012 when the current rules were put in place.

It is not too late to avoid the potentially dire consequences described in the Chamber's report. A workable compromise that continues to improve fuel economy and reduce emissions while recognizing market realities is not just possible, it is crucial. One National Program must remain in effect. For this to happen, political leaders on both sides must recognize the importance of such a compromise, put politics aside, and deliver a practical and achievable middle ground solution that avoids the impending chaos and uncertainty.

We know this will not be easy, but on behalf of the more than three million businesses represented in our federation of members, state and local chambers, and industry associations, we stand ready to work with you on this issue of crucial importance.

Sincerely,

Neil Bradley

GLOBAL ENERGY INSTITUTE
U.S. CHAMBER OF COMMERCE

DIVIDED HIGHWAY

The Importance of Uniform, Achievable Nationwide Automobile Standards

INTRODUCTION

In April 1975, President Gerald Ford delivered a major speech on regulatory reform at the annual meeting of the U.S. Chamber of Commerce. President Ford's pitch to the business community was not deregulation, but smarter regulation that recognizes the complex factors affecting costs and benefits—and ultimately, American consumers. He made a persuasive case that regulatory agencies need to do a better job of considering the practical impacts of federal regulations on families and businesses:

> *"The question is…whether, in making changes in our regulations, would they make more sense in terms of costs added and benefits gained. When I talk about costs, I am not just talking about cold figures in a bookkeeping ledger. I am talking about what you pay in the marketplace--in the supermarket, in the clothing store, in the ladies boutique. Ultimately, all such costs are paid by you, the producers, and your wives, the consumers.*
>
> *All too often, the Federal Government promulgates new rules and regulations which raise costs and consumer prices at the same time, to achieve small or somewhat limited social benefits. In these cases we must either revise proposed rules and regulations to lower their costs, or we must not adopt them in the first place. Moreover, we must examine the whole range of existing rules and regulations to determine whether modifications could lower costs without significantly sacrificing their objectives."*[1]

President Ford's speech came at a time when the Arab Oil Embargo was still fresh in everyone's mind. A key element of his agenda discussed at the Chamber that day was Ford's call for comprehensive energy policy legislation to address America's growing dependence on foreign oil, and the price and supply shocks that accompanied it. Eight months later, Congress passed, and Ford signed, the Energy Policy and Conservation Act of 1975 (EPCA), the nation's first comprehensive energy legislation. The act imposed a ban on the export of crude oil, established the Strategic Petroleum Reserve (SPR), and authorized the Department of Transportation to establish the nation's first vehicle fuel economy targets.

Fast forward nearly half a century, and the severe energy scarcity that threatened the economic and national security position of the United States and led to enactment of EPCA has given way to an era of energy abundance. As a result,

> *Unfortunately, due to a multitude of factors, One National Program is now on the brink of potential dissolution into a patchwork of incompatible state and federal standards.*

the U.S. is now producing record amounts of crude oil (and the most recent government forecast suggests even larger production out to 2050), exporting record amounts of oil, and tapping SPR for budgetary instead of national security reasons. Affordable fuel prices and consumer preferences for larger vehicles also have changed the vehicle mix, making it more difficult for auto manufacturers to comply with increasingly stringent Corporate Average Fuel Economy (CAFE) standards established under EPCA.

Originally a program designed primarily to improve energy security starting in the 1970s, the CAFE program was merged with other federal and state efforts aimed at reducing greenhouse gas (GHG) emissions. California set separate GHG standards for automobiles that were to be phased-in starting in 2009, which 13 other states and the District of Columbia had also adopted. Also in 2009, EPA had completed actions to establish the prerequisite for implementing GHG standards for automobiles. The emergence of these separate GHG regulatory authorities impacting automobiles presented a complex challenge due to their distinct statutory objectives and heavily overlapping impacts on automobile markets. Recognizing these interrelationships, policymakers in 2010 harmonized the fuel economy standards between the Department of Transportation's CAFE standards, EPA's GHG regulations, and state GHG regulations led by California.

This harmonization of state and federal standards, known as One National Program (ONP), initially succeeded in uniting disparate interests and objectives into sound and effective regulatory policy. The ONP has allowed for a more efficient compliance process and reduced costs under which automobile manufacturers can sell a single national fleet of new vehicles across every state in U.S. that meets the state and federal standards. This significantly reduces vehicle design, supply chain, and distribution costs. Unfortunately, due to a multitude of factors, ONP is now on the brink of potential dissolution into a patchwork of incompatible state and federal standards.

STRONGER ENERGY: CLEANER, STRONGER TRANSPORTATION

At the time of the original CAFE standards in 1975, passenger vehicles averaged a paltry 13.5 miles per gallon (mpg). Ten years later, this figure had risen to over 17 mpg. After a period of stagnation through the mid-2000s, in which vehicles added features, grew larger, and increased power, fuel economy again began rising slowly but steadily. Today it stands at 22.4 mpg (Figure 1). While the mileage improvements over the last decade may appear modest, it is important to recognize that they have occurred during a time in which consumer preferences have shifted heavily toward larger and more capable vehicles. This remarkable progress—making vehicles larger, safer, and more fuel efficient—is due thanks to technological advances in engine and propulsion design, materials, operating systems, aerodynamics, and off-cycle systems such as improved air conditioning efficiency.

Perhaps even more remarkable than fuel economy gains, however, is the dramatic reduction in emissions of air pollutants from vehicle exhausts during this time. Since 1970, total national emissions of volatile organic compounds, carbon monoxide, and sulfur dioxide from vehicles have fallen by 90%, while emissions of nitrogen oxides—a key contributor to ozone formation—have declined by 74% (note: these statistics include heavy-duty vehicles as well).[2] Moreover, when accounting for new vehicles only, emissions rates of carbon monoxide, nitrogen oxides, and non-methane organics decreased over 99%.[3] This illustrates the importance of continued fleet turnover to environmental gains. Perhaps even more impressive, these emissions reductions have been achieved alongside substantial growth in the U.S. population and economy that have contributed to a near tripling of vehicle miles traveled (Figure 2).

Figure 1. Fuel Economy Trends, 1970 – 2016.

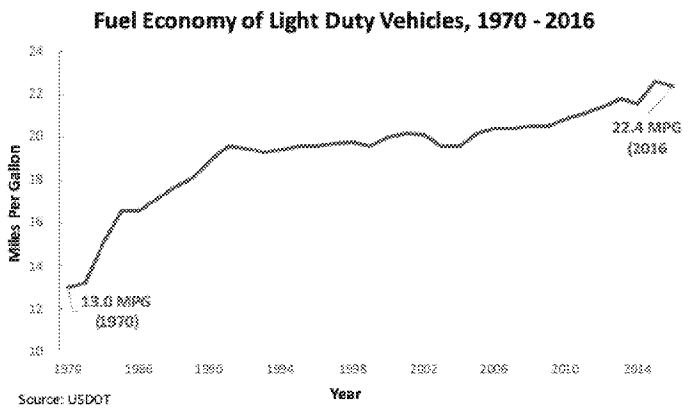
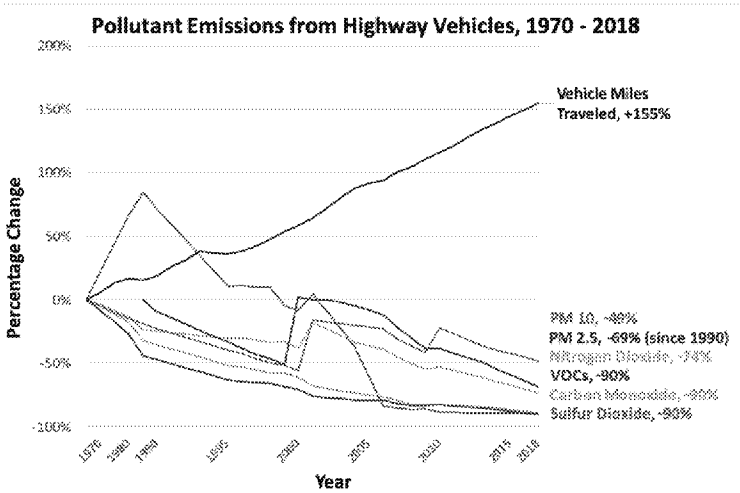


Figure 2. Pollutant Emissions from Highway Vehicles, 1970 – 2018.



These advances are a direct result of decades of planning, investment and partnership between federal, state, and private sector stakeholders. This technological focus and cooperative regulatory spirit is the essence of Global Energy Institute's (GEI) Cleaner, Stronger initiative, and a major reason why America's air quality is now among the cleanest in the world.

This progress can and should continue, informed by a sensible framework that takes into account costs, technological achievability, and the practical market impacts of any regulatory program. Decades of history have proven that automakers are capable of achieving steady progress on fuel economy that does not sacrifice other consumer priorities such as safety and affordability. While continued progress has become increasingly challenging, there is confidence that gains can be made in the near-term. To this end, we believe the Trump Administration's proposal to keep fuel economy GHG standards flat is misguided and insufficient. However, for reasons described in this report, it is important to recognize that going too far, too fast—as the 2012 fuel economy and GHG standards rulemaking did—could harm not only the U.S. auto sector, but American consumers and the broader U.S. economy.

For this reason, it is imperative that all sides work together to identify a flexible, achievable, middle-ground path to continued fuel economy gains and preservation of ONP. The following sections summarize the circumstances that led to the current impasse, why such a compromise is needed, and the potential harms likely to result in the absence of one.

UNEXPECTED DIVERGENCE: REGULATORY STANDARDS, TECHNOLOGY AND MARKETS

At the time it was finalized in 2012, the joint EPA/DOT fuel economy/GHG rulemaking was considered optimistic and aggressive, but potentially achievable based on market and technological forecasts at that time. The rule called for average real world fuel economy of new vehicles to achieve a 40 mpg average by model year 2025—nearly a 50% increase over model year 2016. However, a number of factors changed since the issuance of the 2012 rulemaking that make a mid-course correction necessary.

One important factor is a significant change to projected fuel costs, which in turn increases customer payback periods for certain advanced technologies and hybrids. When the rule was finalized, the federal government was predicting a far different market environment. For example, the final rule projected steadily rising gas prices—averaging $3.68, $3.77, and $3.82 per gallon in 2016, 2017, and 2018, respectively.[4] In large part due to the shale revolution and America's newfound energy renaissance, actual gas prices during those years averaged just $2.58—31% lower than forecast.

This price differential is likely to persist. The chart in Figure 3 shows the difference in the price of gasoline projected for the years 2018 through 2030 made by the Energy information Administration (EIA) in 2013—the first year the 2012 CAFE rule was included—and in 2019. Over this forecast period, the price of a gallon of gasoline is expected to average about 19% less than was projected just six years ago. This unanticipated fuel affordability, together with shifting consumer priorities, contributed to equally inaccurate auto market forecasts.

Figure 3. Fuel price forecast changes, 2013 – 2019.

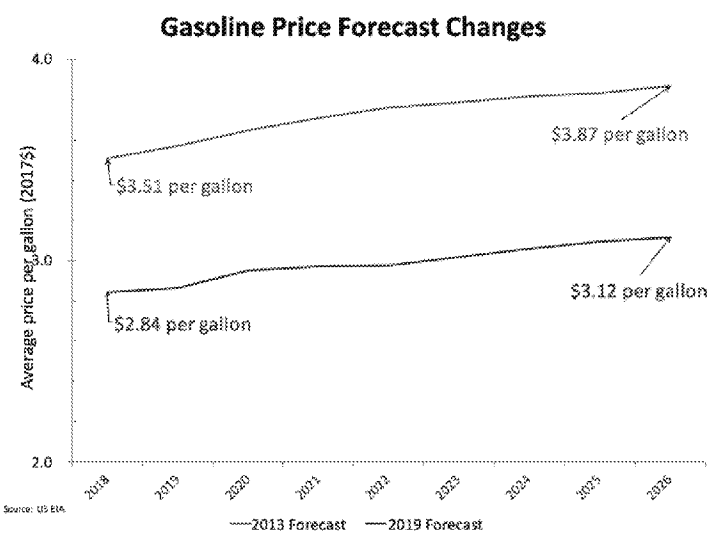
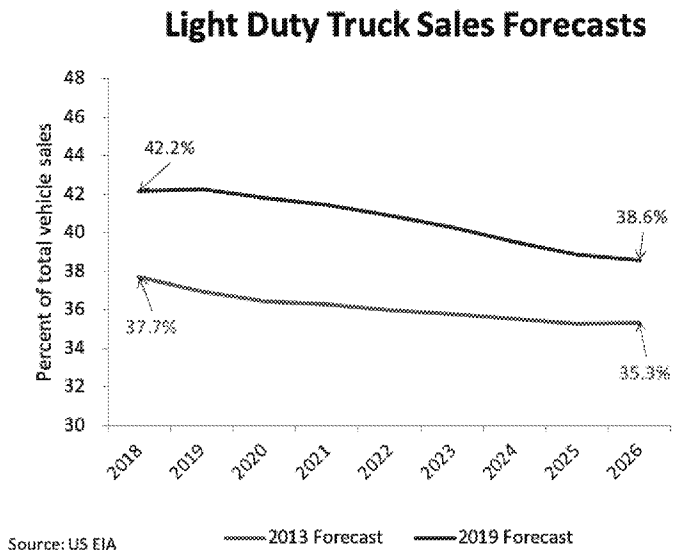


Figure 4. Light duty truck sales forecasts, 2013 - 2019.



In addition to lower fuel prices, 2012 government forecasts expected (relatively fuel efficient) new cars to outsell (relatively fuel inefficient) light trucks by approximately 2 to 1 from 2016 to 2018.[5] In a few short years, these forecasts were shown to be highly inaccurate. In fact, industry data show the actual ratio was closer to 50/50, and that, in 2018, car sales dipped to a 60-year low, and were outsold by light trucks for the first time ever.[6] If past is prologue, these trends are likely to persist. Figure 4 shows the percentage of sales of conventional light duty trucks (i.e., pick-ups and SUVs) projected by EIA in 2013 and again in 2019. EIA now expects that conventional light duty trucks will account for an average 10.7% larger share (or 3.8 percentage points) of vehicle sales over the 2018 to 2030 period. As a result of this trend and other factors, the corresponding mileage per gallon is now forecast to be about 2.5% less than was being forecast in 2013. The changing consumer preferences and market dynamics reflected in these forecast illustrates that achieving the 2012 standard is getting more difficult, not less.

Moreover, the most fuel efficient vehicle categories—hybrids, plug-in hybrids, and fully electric vehicles (EVs)—collectively comprised less than 4% of new vehicle sales

in 2018.[7] These disappointing figures are certainly not due to a lack of marketplace options. Consumers now have a plethora of highly efficient vehicles to choose from. Between 2012 and 2018, the number of vehicle models capable of achieving 40 MPG or more quadrupled (from 20 to 80), while the number of EV models grew from just 12 to 58.[8] These figures highlight a key challenge inherent in fuel economy standards: compliance is determined based on the products that consumers buy, not what automakers send to dealer showrooms. Clearly, factors other than vehicle mileage are driving consumer behavior, such as safety, performance, family needs, and more.

This does not mean that progress on fuel economy has stopped—it continues to improve, just at a slower than anticipated rate. This slowdown has exacerbated the gap between real-world fuel economy and the 2012 rules, which built in the steepest annual increases into the later years of the MY2012-2025 standards.

Together, these optimistic forecasts of technological progress and market preferences combined with pessimistic forecasts on fuel prices to make the already aggressive standards set in 2012 become practically unworkable and out of reach. This does not mean that progress on fuel economy has stopped—it continues to improve, just at a slower than anticipated rate. This slowdown has exacerbated the gap between real-world fuel economy and the 2012 rules, which built in the steepest annual increases into the later years of the MY2012-2025 standards.

This leaves automakers with no direct technological path to achieve the standards, except perhaps via cross-subsidization in which electric vehicles are sold at a substantial loss while the cost of lower mileage vehicles is raised to dampen their sales and ease financial losses. Such a scenario was surely not intended by Congress in either EPCA or the Clean Air Act (CCA), and would clearly harm auto consumers and manufacturers alike.

Anticipating the potential for such a scenario, the Obama Administration appropriately incorporated an important checkpoint mechanism into the 2012 rule designed to evaluate progress toward original targets and modify their stringency if necessary. This “mid-term evaluation” (MTE) was originally planned to last approximately two years and be completed in April 2018. However, in just a 45 day period between November 2016 and January 2017, EPA proposed and then immediately finalized an MTE determination recommending no changes to the standards. This extremely unusual and controversial process included a comment period of just 21 days, followed by a final determination that responded to more than 100,000 public comments in just nine business days.

In early 2017, EPA re-opened the MTE rulemaking and conducted a more thorough review, which was completed in April 2018. This review found that the 2012 standards were based on outdated information, and that more recent data suggested that they were too stringent. The EPA thus concluded that the standards are not appropriate and should be revised, setting the stage for the current proposal that is under consideration. Most automakers agreed with the need for revisions to the program in light of the aforementioned market and technological dynamics. However, led by California, numerous states have objected, arguing that the 2012 standards can be achieved through aggressive deployment of electric vehicles.

This leaves automakers with no direct technological path to achieve the standards, except perhaps via cross-subsidization in which electric vehicles are sold at a substantial loss while the cost of lower mileage vehicles is raised to dampen their sales and ease financial losses.

WHERE THINGS STAND

In August 2018, EPA and the National Highway Traffic Safety Administration (NHTSA) released proposed changes to the CAFE/GHG program. The rule, officially titled the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule, would halt progress on fuel economy and GHG emissions reductions by holding standards flat for Model Years 2021-2026. The agencies' central argument in favor of not tightening standards is to increase safety and affordability. The proposal's underlying regulatory analysis projects that, compared to the existing rule, SAFE would increase the safety of the fleet by increasing fleet turnover, and lower the cost of owning a new car by $2,340.

While the Chamber agrees with EPA's and NHTSA's conclusion reached in the 2018 mid-term review that the 2012 standards are no longer reasonably achievable, it also opposes the agencies' proposal to hold standards flat for the foreseeable future. It is clear that continued progress on fuel economy and emissions reductions can be achieved without undue harm to the economy. Indeed, continuous and predictable year-over-year efficiency improvements are key to enabling the U.S. to maintain environmental and manufacturing leadership. The Chamber supports robust efforts to continue such fuel economy gains, recognizing that they must proceed at a more modest pace that factors in the changing market dynamics that were not envisioned in 2012, as well as the need to maintain the fleet turnover necessary for safety and emissions improvements to be broadly realized.

The proposed rule includes another key provision that is potentially even more impactful: it would rescind a special waiver granted by the EPA to the state of California under CCA Section 209 to set its own, more stringent standards (known as Low-Emission Vehicle) LEV standards. EPA's objective in rescinding this waiver is to preserve ONP and avoid a severe market disruption that would accompany a bifurcated market. In the absence of waiver rescission, California could maintain the more stringent 2012 standards in spite of the current federal effort to reform them. It is important to note that such a scenario may not simply result in one standard for California residents and another in the rest of the country. Using authority under Section 177 of the CAA, 13 other states have chosen to adopt California's tighter LEV standards as well.[9] However, EPA's proposal asserts that Section 177 applies only to traditional criteria pollutants and thus excludes greenhouse gases, meaning that waiver states would lose their authority to adopt tighter greenhouse gas standards.

Complicating the matter further, California and numerous other states have also established a separate Zero Emission Vehicles (ZEV) program that requires major manufacturers to produce a certain number of plug-in EVs (or attain a proportionate number of credits). This ZEV program was not incorporated into the 2012 harmonized rulemaking and therefore adds an additional layer of regulatory uncertainty and confusion into any forthcoming dispute between California and the federal government.

In June 2019, a group of 17 auto manufacturers wrote to President Trump calling for a compromise to be reached that would preserve good auto jobs and keep new vehicles affordable for more Americans through a final rule with "the necessary structure and compliance tools to achieve annual fuel economy improvements midway between the existing standards and the preferred path outlined by your Administration last summer."[10] Shortly thereafter, the state of California and four automakers announced an alternative framework that would maintain the key features of the 2012 standard, but push back its target achievement date from 2025 to 2026.[11] Importantly, the agreement reiterated the need to maintain ONP, stating "we recognize the importance of compromise and we all agree that a framework maintaining a national solution is the preferred path forward." However, California issued a statement accompanying the agreement threatening to "move forward with our current standards" if the White House does not agree to its framework.

As a practical matter, any scenario that results in two sets of standards—whether via continuation of California's waiver authority while NHTSA and EPA modify federal standards, or via waiver repeal accompanied by state defiance of the NHTSA/EPA revisions—is sure to result in chaos and confusion throughout the country. It is also sure to result in a storm of complex litigation that will take years to resolve, injecting even more uncertainty into markets and disrupting efforts to plan, invest, and deliver continued fuel economy and emissions gains.

CAUTION AHEAD: POTENTIAL RAMIFICATIONS OF DISSOLUTION OF ONE NATIONAL PROGRAM

Accordingly, it is imperative that EPA and California resume good faith negotiations and work together to preserve ONP with standards that continue progress on emissions and fuel economy. Failure to achieve a workable solution is likely to trigger significant market dislocation at the expense of American consumers, the auto industry and its employees and suppliers, as well as the broader U.S. economy. The collateral damage has potential to be significant if not severe, and will include a number of aspects, including:

Uncertainty

By far, the greatest concern resulting from dissolution of ONP is the immediate and substantial uncertainty that would accompany it. Inevitable and unpredictable litigation surrounding such circumstances would likely take years to resolve. During this time, manufacturers dependent on multi-year lead times for planning and investment of various models and mixes would be left to do little more than guess at potential outcomes of the dispute. Additionally, auto dealers could see product restrictions impact their ability to meet consumer demand for certain types of vehicles.

Overly stringent standards can raise vehicle costs, remove access to other features that consumers demand, and lower affordability for price sensitive customers.

Environmental Tradeoffs

While perhaps counterintuitive, there are important environmental tradeoffs that may accompany overly stringent fuel economy standards. A key underappreciated factor in reducing vehicle emissions and improving air quality is ensuring continued fleet turnover. In recent years, the rate of fleet turnover has slowed, in part due to the increased costs for new vehicles. This slower turnover results in a greater proportion of older, less fuel-efficient vehicles on U.S. roads. Overly stringent standards can raise vehicle costs, remove access to other attributes that consumers demand, and lower affordability for price sensitive customers. Ultimately, this results in a greater percentage of consumers choosing to either drive older, less safe, and less efficient vehicles longer, or purchase used vehicles instead of new ones.

The SAFE proposal placed great emphasis on this point and asserts that such circumstances also delay improvements in safety and other vehicle attributes that are common in newer cars:

> *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.*[12]

We agree with the agencies' concern. But as stated previously, the SAFE proposal to hold current standards flat due to these concerns is also short-sighted. Clearly, a middle-ground "sweet spot" exists where continued progress can be achieved that does not result in unintended consequences that undermine environmental, safety, and economic goals. While each mile-per-gallon of progress is more challenging than the last, numerous vehicle technologies hold promise for continued improvement. With sufficient lead time and flexibility, technologically feasible standards that deliver on this promise can be crafted.

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Emissions Leakage

A scenario in which the bifurcated market described earlier develops and persists is also likely to undermine environmental goals. This is due to high rates of emissions leakage from California and other "177 states" to the rest of the country. Under such a scenario, reductions achieved in California the "177 states" would simply allow the federal standard followed by all other states to be met through a sales mix of less fuel efficient vehicles. An important academic paper by Stanford and University of Pennsylvania economists studied this leakage, finding that its impact could almost entirely undercut gains from stricter standards:[13]

> *One overlooked factor is the potential for significant interactions between the state initiatives and existing federal corporate average fuel economy (CAFE) standards. Consider an auto manufacturer that, prior to the imposition of the Pavley [i.e., California and "CCA 177 states"] limits, was just meeting the U.S. CAFE standard. Now it must meet the (tougher) Pavley requirement through its sales of cars registered in the adopting states. In meeting the tougher Pavley requirements, its overall U.S. average fuel economy now exceeds the national requirement: the national constraint no longer binds. This means that the manufacturer is now able to change the composition of its sales outside of the Pavley states, selling more large cars with lower fuel-economy. Indeed, if all manufacturers were initially constrained by the national CAFE standard, and there were no offsetting beneficial technological spillovers, the Pavley requirements would lead to "emissions leakage" of 100% at the margin: the reductions within the Pavley states would be completely offset by emissions increases outside of those states!*

The paper goes on to forecast that actual leakage would be somewhat lower (65%) due to technological spillovers resulting from mandates in the 177 states. Regardless, it is likely that efforts by those states to impose tighter standards will be heavily offset due to this phenomenon. Moreover, consumers in some states will have a more limited choice of vehicles in some states versus other states, with the California standard essentially shifting availability of larger cars and trucks away from Californians, while non-177 states indirectly subsidize higher fuel economy sales in California.

Opportunity costs

While regulatory policies such as CAFE can and should be used to incentivize private sector technology investments, overly stringent standards that result in reduced revenues and greater capital constraints could have the opposite effect. As economist Julian Morris wrote on behalf of the George Washington University Regulatory Studies Center:[14]

> *[T]he requirement to invest in fuel economy improvements may lead manufacturers to reduce their investments in some other kinds of vehicle improvements, either due to capital constraints or in order to keep down the final purchase price of vehicles, or both. Examples of such foregone investment might include safety enhancements, improvements in comfort, and investments in the development of connected and autonomous vehicles…Another related effect of CAFE standards that is practically impossible to estimate is the consequence of resources diverted away from the development of innovative technologies, such as autonomation. Such technologies offer potentially enormous benefits, ranging from reductions in collisions to improved productivity.*

Broader Economic Impacts

The automobile industry is an enormously important economic sector, historically contributing 3.0 – 3.5 percent of overall U.S. gross domestic product (GDP) and directly employing an estimated 1.5 million people in the design, manufacturing, sales, and service of motor vehicles.[15] Additionally, the industry is a very large consumer of materials and services from other sectors, from machinery and computing to advertising, finance, and more. Together, these direct and indirect activities amount to a net employment contribution in the U.S. economy of more than 7 million jobs, and state and federal tax revenue generation of $206 billion.[16]

It is important to recognize that the geographic distribution of these jobs—particularly with respect to manufacturing—are generally concentrated in the Midwest and Southeast regions of the country (Figure 5).[18] These states' economies are disproportionately vulnerable to regulatory disruption, especially compared to California and Section 177 states that are home to relatively little manufacturing jobs.

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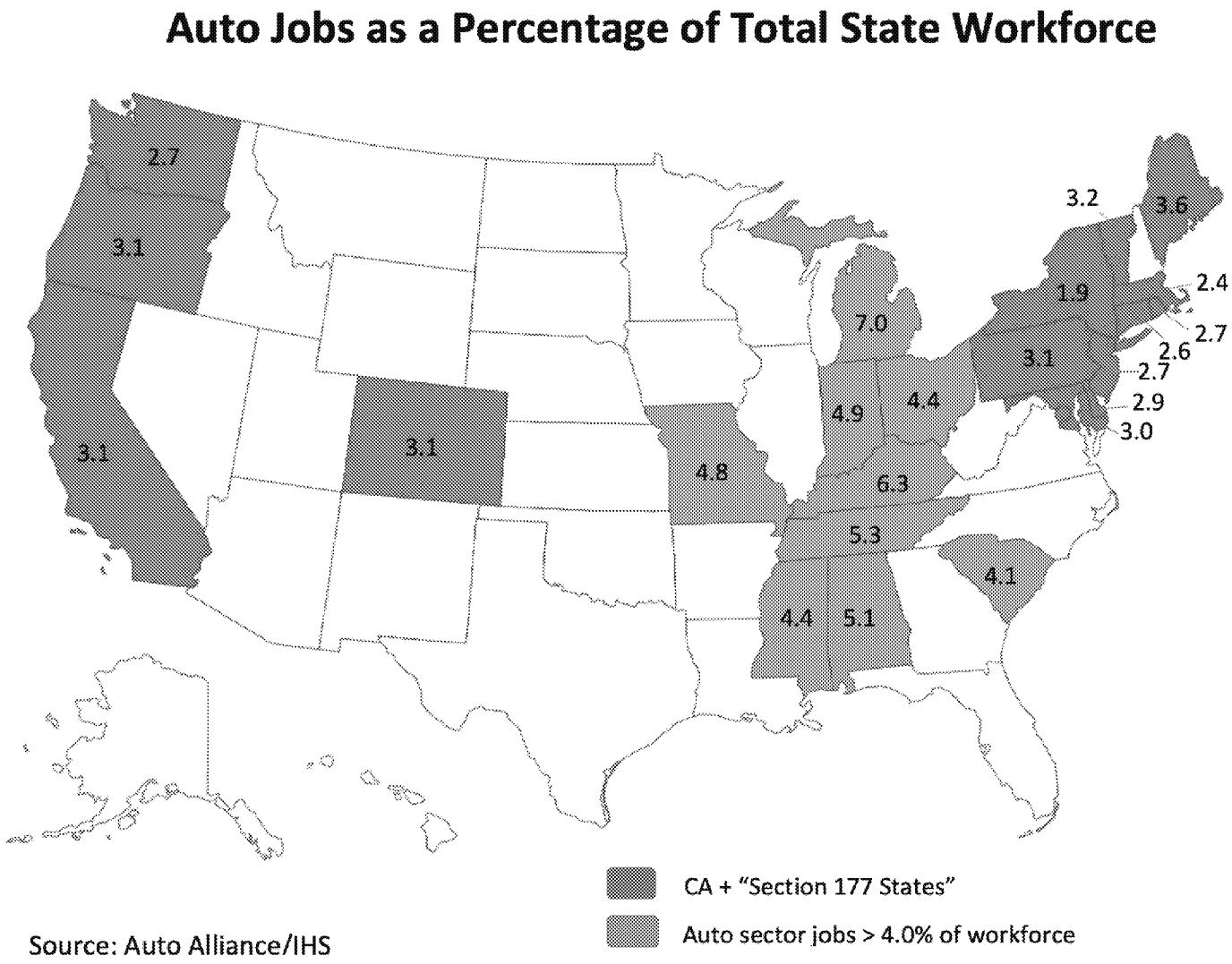
Moreover, the uncertainty and potential harm that could result if ONP dissolves is only one of numerous headwinds faced by the auto sector writ large. The finalization of the SAFE rule comes during a period of great uncertainty and fragility in the sector. Market experts estimate that, in the first half of 2019, auto sales declined 2.2% year-over-year, and that this pace will accelerate to 3.4% in the second half.[17] Risks cited include President Trump's tariffs and trade war, ongoing union negotiations, and questions about the broader economy in the U.S. and China.

Trade and tariff issues are particularly troublesome. A recent study by the Center for Automotive Research (CAR) concluded that "the cumulative effect of the Section 232 steel and aluminum tariffs, Section 301 China tariffs, USMCA, and the potential 25 percent Section 232 tariff on imported autos and auto parts could lead to a 1.3 million drop in U.S. light vehicle sales, 366,900 fewer U.S. jobs, and $30.4 billion lower U.S. economic output."[19] CAR estimates that the cumulative effect of these policies could cause new car prices to rise by $2,750 on average, and that "higher automotive parts prices will drive up the price of vehicle maintenance and repair, so even holding on to an existing vehicle will become more expensive."

It goes without saying that the exacerbation of existing uncertainties, increased costs, and general confusion that would accompany dissolution of ONP is likely to result in further ripple effects that reach well beyond the auto sector itself and ultimately threaten to harm the broader U.S. economy.

Figure 5. Auto Jobs as a Percentage of Total State Workforce.



Source: Auto Alliance/IHS

THE PATH FORWARD

Thanks to sound implementation of laws such as EPCA, agencies such as EPA and NHTSA, and the dramatic changes in our energy fortunes and our technological capabilities in the subsequent decades, America's position on energy and the environment is better than it has ever been. The energy security motivations that drove passage of EPCA have largely been addressed, while continued emissions reductions have made America's air among the cleanest in the world. In short, we are cleaner and stronger today than we were yesterday, and we will be cleaner and stronger tomorrow than we are today. However, our work is not finished. New challenges such as climate change demand growing attention, and developing sound energy and environmental policy while balancing the complex web of federal, state, business, consumer, and economic interests is no small feat.

The theme of the U.S. Chamber meeting at which President Ford spoke on regulatory reform and energy policy in 1975 was "America's Future—Our Critical Choices." Ford counseled that regulators must look beyond "cold figures in a bookkeeping ledger" and seek to understand the real-world impacts of regulations from the perspective of American businesses, employees, and consumers. The importance of this advice has proven to be timeless, and failure to heed it as we debate the critical choices that will mark the next phase of fuel economy and vehicle GHG standards could derail our ability to build upon past successes.

It is not too late to avoid the potentially dire consequences described in this report. A workable compromise that continues to improve fuel economy, reduce emissions while recognizing market realities is not just possible, it is crucial. One National Program must remain in effect. While negotiations between EPA and California dissolved earlier this year, both sides have indicated a willingness to resume discussions, leaving hope for a middle ground solution that could avoid the impending chaos and uncertainty. For this to happen, political leaders on both sides must recognize the importance of such a compromise not just to the auto sector, its extensive supply chain, associated industries or the more than 7 million related jobs it supports, but to the entire U.S. economy and the American consumer that it depends on. Accordingly, we call on federal, state, and private sector stakeholders to put politics aside, return to the negotiating table, and deliver for the American people.

In short, we are cleaner and stronger today than we were yesterday, and we will be cleaner and stronger tomorrow than we are today. However, our work is not finished.

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SOURCES

[1] President Gerald R. Ford's Remarks at the Annual Meeting of the U.S. Chamber of Commerce. April 28, 1975, available at https://www.fordlibrarymuseum.gov/library/speeches/750220.asp

[2] Source: EPA Air Pollutant Emissions Trends, available at *https://www.epa.gov/air-emissions-inventories/air-pollutant-emissions-trends-data*

[3] Federal Register Vol. 79, No. 81

[4] Based on 2012 EIA Annual Energy Outlook

[5] 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, FR Vol. 76, No. 231.

[6] Automotive News, July 2018 *https://www.autonews.com/article/20180702/RETAIL01/180709977/car-sales-on-pace-to-hit-60-year-low*

[7] Ward's Automotive, 2019 data

[8] FuelEconomy.gov (mileage based on highway driving)

[9] "Section 177 states" that have adopted California's standards include Colorado, Connecticut, Delaware, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Pennsylvania, Rhode Island, Vermont, Washington, and Washington, D.C.

[10] *http://media.freep.com/uploads/digital/Trump-GHG-CAFE-Letter-June-6-2019.pdf*

[11] California Air Resources Board, July 25, 2019. *https://ww2.arb.ca.gov/news/california-and-major-automakers-reach-groundbreaking-framework-agreement-clean-emission*

[12] Federal Register, Vol 83, page 49344, available at https://www.federalregister.gov/documents/2018/10/01/2018-21195/light-duty-vehicle-ghg-program-technical-amendments.

[13] Unintended consequences from nested state and federal regulations: The case of the Pavley greenhouse-gas-per-mile limits, Journal of Environmental Economics and Management, 63 (2012) 187–207, Lawrence H. Goulder, Mark R. Jacobsen, Arthur A. van Benthem,

[14] *https://regulatorystudies.columbian.gwu.edu/sites/g/files/zaxdzs1866/f/downloads/GW%20Reg%20Studies%20-%20SAFE%20Vehicles%20Rule%20-%20Public%20Interest%20Comment%20-%20Julian%20Morris.pdf*

[15] Center for Automotive Research, Contribution of the Automotive Industry to the Economies of All Fifty States and the United States, available at *http://www.cargroup.org/wp-content/uploads/2017/02/Contribution-of-the-Automotive-Industry-to-the-Economies-of-All-Fifty-States-and-the-United-States2015.pdf*

[16] ibid.

[17] Based on auto Alliance/IHS analysis, available at *https://autoalliance.org/in-your-state*

[18] Cox Automotive, June 2019. *https://www.coxautoinc.com/market-insights/2019-mid-year-review/*

[19] Center for Automotive Research, Consumer and Economic Impacts of U.S. Automotive Trade Policies

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Washington, DC 20062-2000

Message

From: Woods, Clint [woods.clint@epa.gov]
Sent: 8/6/2019 2:23:24 PM
To: Idsal, Anne [idsal.anne@epa.gov]; Harlow, David [harlow.david@epa.gov]
Subject: internal draft deliberative
Attachments: INTERNAL DRAFT DELIBERATIVE CA BACKGROUND.docx

CA background

Message

From: Dunham, Sarah [Dunham.Sarah@epa.gov]
Sent: 8/14/2019 12:05:07 PM
To: Idsal, Anne [idsal.anne@epa.gov]; Woods, Clint [woods.clint@epa.gov]
Subject: Fwd: Draft SAFE FRM Preamble Text for Program Flexibilities
Attachments: FRM Section X.C_EPA Flexibilities_v2.docx; ATT00001.htm

This is a he first batch from last week of EPA's draft preamble. I'll send the second batch shortly.

Begin forwarded message:

From: "Olechiw, Michael" <olechiw.michael@epa.gov>
Date: August 5, 2019 at 4:01:02 PM EDT
To: OAR Briefings <OAR_Briefings@epa.gov>
Cc: "Dunham, Sarah" <Dunham.Sarah@epa.gov>, "Charmley, William" <charmley.william@epa.gov>, "Hengst, Benjamin" <Hengst.Benjamin@epa.gov>
Subject: Draft SAFE FRM Preamble Text for Program Flexibilities

Deliberative Process / Ex. 5

Please let me know if you have any questions or comments.

Regards,

Mike Olechiw

Message

From: Dunham, Sarah [Dunham.Sarah@epa.gov]
Sent: 8/20/2019 8:24:36 PM
To: Idsal, Anne [idsal.anne@epa.gov]; Woods, Clint [woods.clint@epa.gov]; Harlow, David [harlow.david@epa.gov]
Subject: EPA Responses to NHTSA's Edits on the EPA drafted SAFE Flexibilities Preamble
Attachments: EPA response_NHTSA Edits FRM Section X.C_EPA Flexibilities_to OTAQ OD Dunham for review_08-20-2019.docx

Anne, Clint, David-

Ex. 5 - Deliberative Process

Ex. 5 - Deliberative Process

Thanks,
Sarah

From: "Woods, Clint" <woods.clint@epa.gov>
Date: August 16, 2019 at 2:54:32 PM EDT
To: "Idsal, Anne" <idsal.anne@epa.gov>, "Dunham, Sarah" <Dunham.Sarah@epa.gov>, "Campbell, Ann" <Campbell.Ann@epa.gov>, "Harlow, David" <harlow.david@epa.gov>, "Schwab, Justin" <Schwab.Justin@epa.gov>
Subject: Fwd: Preamble Updates

FYI - Told then we would review and incorporate, as appropriate, in subsequent updates

Begin forwarded message:

From: "Morrison, Jonathan (NHTSA)" <Jonathan.Morrison@dot.gov>
Date: August 16, 2019 at 2:34:42 PM EDT
To: "Woods, Clint" <woods.clint@epa.gov>
Subject: RE: Preamble Updates

Please see minor edits we discussed. Thanks!

From: Woods, Clint [mailto:woods.clint@epa.gov]
Sent: Friday, August 16, 2019 10:28 AM
To: Morrison, Jonathan (NHTSA) <Jonathan.Morrison@dot.gov>; Tamm, James (NHTSA) <james.tamm@dot.gov>
Cc: Idsal, Anne <idsal.anne@epa.gov>; Dunham, Sarah <Dunham.Sarah@epa.gov>; Bolen, Brittany <bolen.brittany@epa.gov>; Campbell, Ann <Campbell.Ann@epa.gov>; Harlow, David <harlow.david@epa.gov>
Subject: Preamble Updates

Jonathan and Jim,

Ex. 5 - Deliberative Process

Thanks!

Clint Woods
Deputy Assistant Administrator
Office of Air and Radiation, U.S. EPA
202.564.6562

Message

From: Woods, Clint [woods.clint@epa.gov]
Sent: 9/17/2019 10:59:50 PM
To: Idsal, Anne [idsal.anne@epa.gov]; Harlow, David [harlow.david@epa.gov]; Leopold, Matt (OGC) [Leopold.Matt@epa.gov]; Bolen, Brittany [bolen.brittany@epa.gov]
CC: Schwab, Justin [Schwab.Justin@epa.gov]
Subject: Fwd: DRAFT DELIBERATIVE - PRIVILEGED AND CONFIDENTIAL RE: final for true-up
Attachments: Edits to FINAL EPA MASTER 09172016 PM SAFE STEP ONE.docx; ATT00001.htm

Begin forwarded message:

From: "Morrison, Jonathan (NHTSA)" <Jonathan.Morrison@dot.gov>
Date: September 17, 2019 at 6:54:03 PM EDT
To: "Schwab, Justin" <Schwab.Justin@epa.gov>
Cc: "Woods, Clint" <woods.clint@epa.gov>
Subject: DRAFT DELIBERATIVE - PRIVILEGED AND CONFIDENTIAL RE: final for true-up

---

From: Schwab, Justin [mailto:Schwab.Justin@epa.gov]
Sent: Tuesday, September 17, 2019 4:43 PM
To: Morrison, Jonathan (NHTSA) <Jonathan.Morrison@dot.gov>
Cc: Woods, Clint <woods.clint@epa.gov>
Subject: final for true-up

Message

From: Woods, Clint [woods.clint@epa.gov]
Sent: 9/19/2019 5:07:40 PM
To: Benevento, Douglas [benevento.douglas@epa.gov]; Idsal, Anne [idsal.anne@epa.gov]; Schwab, Justin [Schwab.Justin@epa.gov]; Leopold, Matt (OGC) [Leopold.Matt@epa.gov]; Harlow, David [harlow.david@epa.gov]; Dominguez, Alexander [dominguez.alexander@epa.gov]
Subject: Updates to SIP Letter
Attachments: SIP LETTER EDIT 09192019 io.docx

Attached- Thanks!

Message

From: Morrison, Jonathan (NHTSA) [Jonathan.Morrison@dot.gov]
Sent: 8/9/2019 9:34:36 PM
To: Dunham, Sarah [Dunham.Sarah@epa.gov]
CC: Idsal, Anne [idsal.anne@epa.gov]; Woods, Clint [woods.clint@epa.gov]; Schwab, Justin [Schwab.Justin@epa.gov]; King, Heidi (NHTSA) [heidi.king@dot.gov]; Owens, James (OST) [James.Owens@dot.gov]; Jim Tamm [james.tamm@dot.gov]; Rutledge, Ross (NHTSA) [ross.rutledge1@dot.gov]; Mullins, Timothy (OST) [Timothy.Mullins@dot.gov]
Subject: DRAFT DELIBERATIVE - PRIVILEGED AND CONFIDENTIAL
Attachments

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

Sincerely,

Jonathan Morrison
Chief Counsel
Department of Transportation
National Highway Traffic Safety Administration
1200 New Jersey Avenue SE., Washington, DC 20590
Office: 202-366-9511

Message

From: Woods, Clint [woods.clint@epa.gov]
Sent: 9/18/2019 10:11:40 PM
To: Benevento, Douglas [benevento.douglas@epa.gov]; Idsal, Anne [idsal.anne@epa.gov]; Schiermeyer, Corry [schiermeyer.corry@epa.gov]
CC: Schwab, Justin [Schwab.Justin@epa.gov]; Harlow, David [harlow.david@epa.gov]
Subject: RE: CA SIP Letter
Attachments: SIP LETTER EDIT 09182019 io.docx

Ex. 5 Deliberative Process (DP)

From: Benevento, Douglas <benevento.douglas@epa.gov>
Sent: Wednesday, September 18, 2019 1:55 PM
To: Idsal, Anne <idsal.anne@epa.gov>; Woods, Clint <woods.clint@epa.gov>; Schiermeyer, Corry <schiermeyer.corry@epa.gov>
Subject: RE: CA SIP Letter

Let's talk today. We should prepare this letter so it can be sent next Tuesday.

From: Benevento, Douglas
Sent: Wednesday, September 18, 2019 7:39 AM
To: Idsal, Anne <idsal.anne@epa.gov>; Woods, Clint <woods.Clint@epa.gov>; Schiermeyer, Corry <schiermeyer.corry@epa.gov>
Subject: CA SIP Letter

I made some edits to the letter. Please review and let me know your thoughts.

Message

From: Woods, Clint [woods.clint@epa.gov]
Sent: 9/20/2019 7:14:54 PM
To: Idsal, Anne [idsal.anne@epa.gov]
Subject: Fwd: Air Letter and Release
Attachments: 09-20-2019 - DRAFT RELEASE - Air Letter to CARB.docx; ATT00001.htm; SIP LETTER EDIT 09192019 io v3.docx; ATT00002.htm

I thought we were doing strategic outreach, not a release?

Begin forwarded message:

> **From:** "Benevento, Douglas" <benevento.douglas@epa.gov>
> **Date:** September 20, 2019 at 3:13:45 PM EDT
> **To:** "Jackson, Ryan" <jackson.ryan@epa.gov>, "McFaul, Jessica" <mcfaul.jessica@epa.gov>, "Woods, Clint" <woods.clint@epa.gov>, "Idsal, Anne" <idsal.anne@epa.gov>, "Schiermeyer, Corry" <schiermeyer.corry@epa.gov>
> **Subject: Air Letter and Release**
>
> Please review and provide final comments. We probably need to have this finalized in the next hour and a half. Please send any edits to Jessica for her to coordinate. Thanks

Message

From: Cyran, Carissa [Cyran.Carissa@epa.gov]
Sent: 8/15/2019 9:56:42 PM
To: Woods, Clint [woods.clint@epa.gov]; Idsal, Anne [idsal.anne@epa.gov]
CC: Campbell, Ann [Campbell.Ann@epa.gov]; Dominguez, Alexander [dominguez.alexander@epa.gov]; Harlow, David [harlow.david@epa.gov]; Shoaff, John [Shoaff.John@epa.gov]
Subject: RE: OAR Fact Sheets for Administrator's Hearing on September 19
Attachments: safe update - new.docx; SAFE Congressional Letter Timeline last update 8.15.19 2 pm.docx

Great, thank you Clint and Anne. I was just about to send a response.

I just received the SAFE-CA fact sheet that was requested today by the Administrator. I've attached the fact sheet as well as the summary document of the letters on the issue since Bill's hearing. Please note that we don't have a lot of talking points because the Agency has not issued any press releases/statements or publicly discussed the issue.

Ex. 5 Deliberative Process (DP)

From: Woods, Clint <woods.clint@epa.gov>
Sent: Thursday, August 15, 2019 5:55 PM
To: Idsal, Anne <idsal.anne@epa.gov>
Cc: Cyran, Carissa <Cyran.Carissa@epa.gov>; Campbell, Ann <Campbell.Ann@epa.gov>; Dominguez, Alexander <dominguez.alexander@epa.gov>; Harlow, David <harlow.david@epa.gov>; Shoaff, John <Shoaff.John@epa.gov>
Subject: Re: OAR Fact Sheets for Administrator's Hearing on September 19

Agreed - I'm stuck in with the Administrator now, but did we get a short one pager for the CARB / 4 automakers deal? Thanks so much!

On Aug 15, 2019, at 5:47 PM, Idsal, Anne <idsal.anne@epa.gov> wrote:

> Good evening Carissa,
>
> These look good on my end.
>
> Best,
> Anne
>
> Anne L. Idsal
> U.S. Environmental Protection Agency - Office of Air and Radiation
> Washington, DC
>
> On Aug 15, 2019, at 3:42 PM, Cyran, Carissa <Cyran.Carissa@epa.gov> wrote:

Ex. 5 Deliberative Process (DP)

Ex. 5 Deliberative Process (DP)

I will drop off hard copies of the EtO fact sheets.

From: Cyran, Carissa
Sent: Wednesday, August 14, 2019 6:21 PM
To: Idsal, Anne <idsal.anne@epa.gov>; Campbell, Ann <Campbell.Ann@epa.gov>; Woods, Clint <woods.Clint@epa.gov>
Cc: Dominguez, Alexander <dominguez.alexander@epa.gov>; Harlow, David <harlow.david@epa.gov>; Shoaff, John <Shoaff.John@epa.gov>
Subject: OAR Fact Sheets for Administrator's Hearing on September 19

Hello,

Ex. 5 Deliberative Process (DP)

Please let me know if you would like any of the fact sheets printed.

Thank you,

Carissa

Carissa Cyran
Office of Air and Radiation
U.S. Environmental Protection Agency
Phone: (202) 564-5437

<OAR-9 Ethylene Oxide 8.15.docx>

<OAR-9a Ethylene Oxide in IL table 8.15.docx>

<OAR-2 Affordable Clean Energy Rule.docx>

<OAR-13 MATS Clean.docx>

<OAR-12 Glider Kits Clean .docx>

<OAR-31 SAFE-CAFE Clean .docx>

Message

From: Cyran, Carissa [Cyran.Carissa@epa.gov]
Sent: 8/14/2019 10:53:27 PM
To: Idsal, Anne [idsal.anne@epa.gov]; Campbell, Ann [Campbell.Ann@epa.gov]; Woods, Clint [woods.clint@epa.gov]
CC: Dominguez, Alexander [dominguez.alexander@epa.gov]; Harlow, David [harlow.david@epa.gov]; Shoaff, John [Shoaff.John@epa.gov]
Subject: OAR Fact Sheets for Administrator's Hearing on September 19 - Due to OCIR on Tuesday, August 20
Attachments: OAR-1 2018 Fourth National Climate Assessment Clean.docx; OAR-3 Wildfires clean.docx; OAR-6 CSAPR and Good Neighbor SIPs Clean.docx; OAR-10 Exceptional Events clean.docx; OAR-11 Fee-Based Energy Star Program clean.docx; OAR-14 Methane Clean.docx; OAR-16 NAAQS -Setting Status and Designations Clean.docx; OAR-15 NAAQS Attainment Clean.docx; OAR-17 New Source Review Clean.docx; OAR-18 Once In. Always In clean.docx; OAR-19 Kigali and HFCs August Clean.docx; OAR-21 Reduce Risks From Indoor Air Clean.docx; OAR-22 Quick-Start Turbines Clean.docx; OAR-23 Radiation Protection Radiological Emergency Response Clean.docx; OAR-24 Regional Haze Clean.docx; OAR-32 CAA 126 Clean.docx; OAR-34 STAG Clean.docx; OAR-35 Targeted Airshed Grants Clean.docx; OAR-36 Wood Heaters Clean.docx; Antibacksliding study - New.docx; OAR-4 Aircraft GHG Clean .docx; OAR-5 Trucks Initiative Clean .docx; OAR-7 DERA grants Clean.docx; OAR-20 Parity for Natural Gas Vehicles with Electric Vehicles Clean.docx; OAR-25 RFS general overview clean.docx; OAR-26 RFS-Biomass-Based Diesel Clean.docx; OAR-27 RFS-E15 and RIN Market Reform Clean.docx; OAR-28 RFS-Reallocation of RINs Clean.docx; OAR-29 RFS-Reset Rule Clean.docx; OAR-30 RFS-Small Refinery Exemptions Clean .docx

Hello,

Here is the 2nd email that includes all the fact sheets that need to be reviewed by COB Tuesday, August 20th. Please note that the Anti-backsliding fact sheet is new and will need IO approval to be added.

Let me know if you would like any of these fact sheets printed for your review.

Thank you,

Carissa

Carissa Cyran
Office of Air and Radiation
U.S. Environmental Protection Agency
Phone: (202) 564-5437

Message

From: Woods, Clint [woods.clint@epa.gov]
Sent: 9/20/2019 2:41:54 PM
To: Morrison, Jonathan (NHTSA) [Jonathan.Morrison@dot.gov]; Jim Tamm [james.tamm@dot.gov]; Rutledge, Ross (NHTSA) [ross.rutledge1@dot.gov]
CC: Idsal, Anne [idsal.anne@epa.gov]; Schwab, Justin [Schwab.Justin@epa.gov]; Harlow, David [harlow.david@epa.gov]; Dominguez, Alexander [dominguez.alexander@epa.gov]; Dunham, Sarah [Dunham.Sarah@epa.gov]; Cook, Leila [cook.leila@epa.gov]; Hengst, Benjamin [Hengst.Benjamin@epa.gov]
Subject: SAFE Status List & SAFE preamble on Health Effects with NAAQS addition
Attachments: EPA SAFE FRM preamble_Health Effects with NAAQS placeholder_09-16-19.docx; Status of NHTSA Requests to EPA for SAFE_091619 io additions.docx

Jonathan, Ross, and Jim,

Ex. 5 Deliberative Process (DP)

Clint

Message

From: Woods, Clint [woods.clint@epa.gov]
Sent: 8/6/2019 7:46:33 PM
To: Idsal, Anne [idsal.anne@epa.gov]; Harlow, David [harlow.david@epa.gov]
CC: Schwab, Justin [Schwab.Justin@epa.gov]
Subject: NHTSA Follow Up
Attachments: Comment Categories 2022-20265 CAFE 190729 to EPA, OTAQ comments Aug 1.docx; ATT00001.htm; Summary of AA Wehrum's Direction on SAFE Flexibilities.pptx; ATT00002.htm; Agenda_LD GHG BiWeekly with OAR AA Idsal_08-06-2019, Final.docx; ATT00003.htm

Morrison will plan to send you two their next batch of material (including some RIA and preamble elements) later tmrw or Thursday, 24 hours before they share with OIRA. If our 31-page program flexibilities preamble text (with placeholders on sensitive items) is in good shape later this week, told him we would try to follow suit soon after.

Ex. 5 Deliberative Process (DP)

Begin forwarded message:

From: "Charmley, William" <charmley.william@epa.gov>
Date: August 6, 2019 at 3:16:12 PM EDT
To: OAR Briefings <OAR_Briefings@epa.gov>
Cc: OTAQ Materials <OTAQMaterials@epa.gov>, "Simon, Karl" <Simon.Karl@epa.gov>, "Olechiw, Michael" <olechiw.michael@epa.gov>, "Bolon, Kevin" <Bolon.Kevin@epa.gov>, "Lieske, Christopher" <lieske.christopher@epa.gov>, "Orlin, David" <Orlin.David@epa.gov>, "Buchsbaum, Seth" <buchsbaum.seth@epa.gov>, "Kataoka, Mark" <Kataoka.Mark@epa.gov>
Subject: Material for the 2pm Light-duty GHG SAFE rule meeting with AA Idsal attached

Attached is the material for Wednesday's Light-duty SAFE Final Rule meeting with AA Idsal.

Attached is the Agenda, and two supporting documents.
Thanks
Bill

Message

From: Harlow, David [harlow.david@epa.gov]
Sent: 8/6/2019 3:00:09 PM
To: Woods, Clint [woods.clint@epa.gov]; Benevento, Douglas [benevento.douglas@epa.gov]
CC: Idsal, Anne [idsal.anne@epa.gov]
Subject: RE: CA Air Quality Background

Doug,

I looked over the last couple of sections in particular. Apart from adding this missing parenthesis, I thought it looked really good.

Ex. 5 Deliberative Process (DP)

David S. Harlow
Senior Counsel
Immediate Office of the Acting Assistant Administrator
Office of Air and Radiation, USEPA
WJC-N Room 5409K
1200 Pennsylvania Avenue NW
Washington, DC 20460
202-564-1233
Harlow.David@epa.gov

From: Woods, Clint <woods.clint@epa.gov>
Sent: Tuesday, August 6, 2019 10:53 AM
To: Benevento, Douglas <benevento.douglas@epa.gov>
Cc: Idsal, Anne <idsal.anne@epa.gov>; Harlow, David <harlow.david@epa.gov>
Subject: CA Air Quality Background

DRAFT INTERNAL DELIBERATIVE – NOT FOR RELEASE

Doug,

Attached is OAR's California backgrounder. David Harlow may be sending along a few tweaks but wanted to get you a copy in the meantime.

Thanks!

Clint Woods
Deputy Assistant Administrator
Office of Air and Radiation, U.S. EPA
202.564.6562

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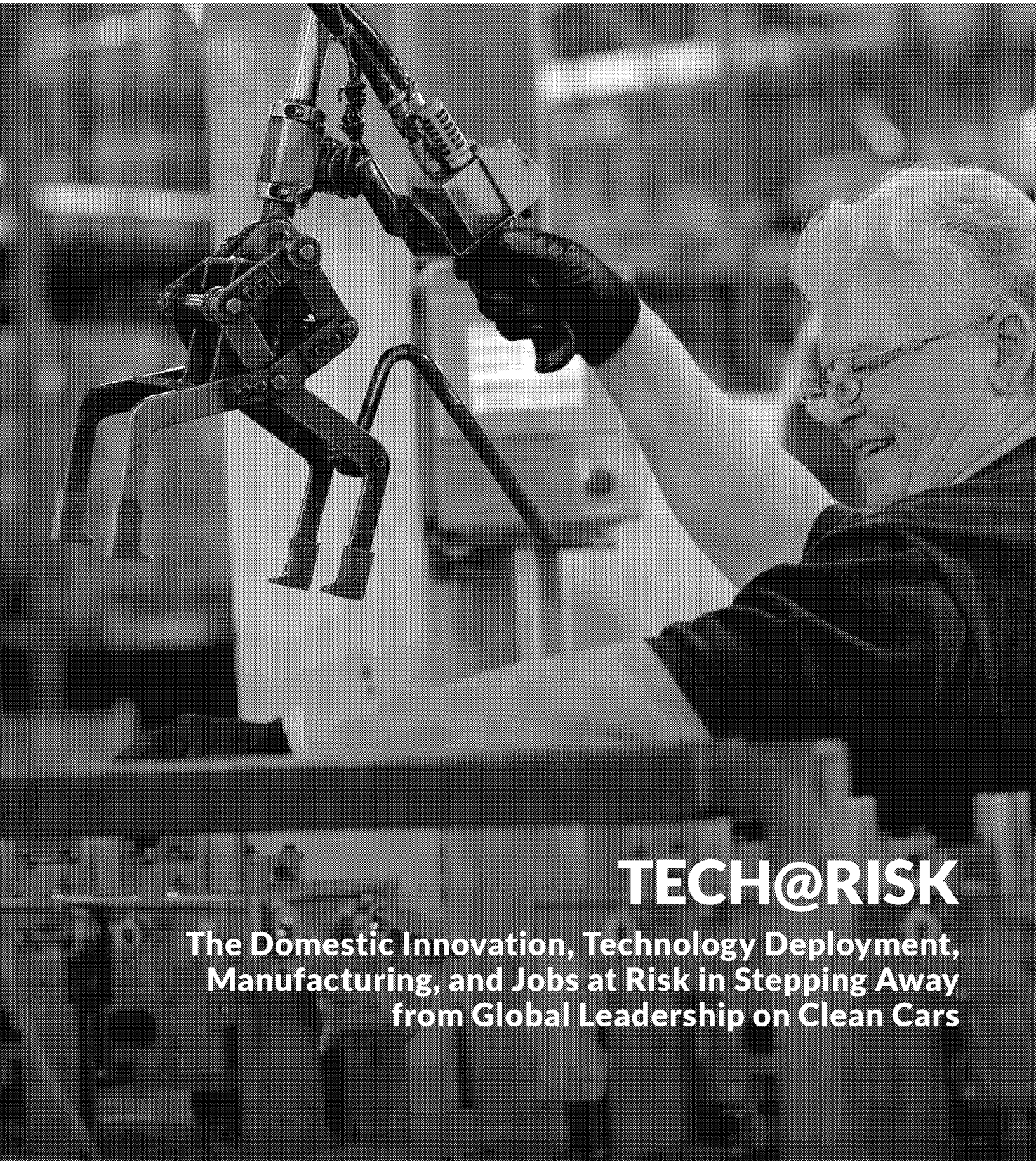
BLUEGREEN ALLIANCE



TECH@RISK

The Domestic Innovation, Technology Deployment, Manufacturing, and Jobs at Risk in Stepping Away from Global Leadership on Clean Cars

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BLUEGREEN ALLIANCE

The BlueGreen Alliance **unites America's largest labor unions and its most influential environmental organizations** to solve today's environmental challenges in ways that create and maintain quality jobs and build a stronger, fairer economy.

Authors:

Zoe Lipman
Mia Veltri

Analysis:

Dave Cooke, Union of Concerned Scientists
Zoe Lipman, BlueGreen Alliance
Roxanne Johnson, BlueGreen Alliance
Michelle Manson, BlueGreen Alliance

Acknowledgments:

The BlueGreen Alliance would also like to thank Luke Tonachel at the Natural Resources Defense Council and Steve Beers at the United Autoworkers for their technical review. Thanks to Eric Steen and Abby Harvey at the BlueGreen Alliance for their assistance in editing and production, and to the BlueGreen Alliance's partners for their support and review.

Design by Winking Fish. • Cover Photo by Sam Varnl-Hagen/Ford Motor Co.

Errors remain the responsibility of the authors.

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EXECUTIVE SUMMARY

Policy matters.

Between 2007 and 2016, the United States' commitment to a new generation of fuel economy improvement and greenhouse gas (GHG) emissions reduction in the massive passenger vehicle sector helped transform manufacturing in America. Automakers didn't just rebuild from a recession, they rebuilt to produce vehicles that were far cleaner, more efficient, and more globally competitive, while simultaneously maintaining the performance, safety, and design innovation that customers demand. Doing so spurred more rapid retooling of automaker facilities and required enhanced purchase of advanced technology from thousands of suppliers. In past research and reports the BlueGreen Alliance has identified the suppliers of this technology across the nation.

Since 2017, however, the administration has proposed—and is expected shortly to finalize—standards that dramatically reduce requirements for continued efficiency improvements in passenger cars, SUVs, and trucks and undermine states' ability to spur additional demand for advanced vehicles. The administration's own analysis of their proposal finds that halting the advance of standards at 2020 levels would cut demand for advanced clean and efficient automotive technology, components, and materials by approximately $30 billion a year and result in 60,000 fewer jobs in the auto industry.

In this report, we unpack these topline statistics and look in detail at the impact of less stringent standards on demand for clean vehicle technologies and the companies that build them. We look both at today's vehicle technology manufacturing jobs that may be impacted if standards are weakened, and estimate the impact on future jobs and job growth in the industry. Our analysis vividly illustrates that—regardless of the modeling approach used—flatlining the standards in 2020 dramatically slows adoption of advanced technologies in almost every vehicle subsystem and cuts demand for products made by hundreds of manufacturers and hundreds of thousands of workers all across the country.

The threat appears particularly acute for those that make the most advanced technologies and materials, but a rollback threatens jobs and investment across the industry. These immediate impacts understate the longer-term impact of losing the competitive technology edge to other nations. Stepping back from leadership on efficiency and emissions reductions in the global vehicle sector means both U.S. jobs lost making the advanced engines, transmissions, components, and materials that consumers count on to deliver fuel savings in popular SUVs, cars, and trucks today, and jobs and business opportunities lost in building the domestic supply chain in emerging and electric vehicle technology for today and tomorrow. **Our analysis finds between 89,000 and 202,000 of tomorrow's jobs would be lost or foregone as a result of the rollback.**

Our analysis vividly illustrates that—regardless of the modeling approach used—flatlining the standards in 2020 significantly slows adoption of advanced technologies in almost every vehicle subsystem and cuts demand for products made by hundreds of manufacturers and hundreds of thousands of workers all across the country.

At a time when nations worldwide are moving aggressively to capture the jobs and economic benefits of rapidly changing vehicle technology, the U.S. too must use all the tools at its disposal to lead in technology innovation, investment, manufacturing, and good job creation.

To secure jobs and manufacturing growth in the highly competitive global automotive industry the U.S. will need to complement strong vehicle standards with smart trade, tax, and manufacturing policies. But making policy decisions now that actively disincentivize innovation and investment in advanced vehicle technology in America—such as choosing to rollback industry leading clean vehicle standards—puts the United States at a profound disadvantage and will cost manufacturing and jobs today and tomorrow.

It is not yet too late to take a smarter path.

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I. INTRODUCTION: A HISTORY OF BUILDING CLEANER VEHICLES AND AMERICAN JOBS

In 2007, the passage of a major bipartisan energy bill—the Energy Independence and Security Act of 2007 (EISA)—set in motion a new generation of fuel economy rulemaking, and was the first significant forward movement on vehicle efficiency in the United States since the 1970's oil crisis. In accordance with EISA, federal rulemakings in 2010 and 2012 put in place a schedule for fuel economy improvement through 2025 and codified a groundbreaking approach, often referred to as the "One National Program," under which the U.S. Environmental Protection Agency (EPA), U.S. Department of Transportation (DOT), and the California Air Resources Board (which had also set standards for 2009-2016), develop and promulgate coordinated standards across their separate regulatory obligations.[1] This process was designed to ensure long-term certainty, consistency, and clarity for the industry. It enabled automakers and suppliers to develop and build a single fleet that meets federal vehicle fuel economy and GHG rules—and state vehicle emission standards—at once. Under these policies, the nation has seen a decade of dramatic improvement in vehicle efficiency, emissions reductions, and oil and consumer cost savings.[2]

In addition, the drafters of EISA also included explicit measures to help promote domestic manufacturing of cleaner and more fuel-efficient vehicles and technology. They recognized that a new generation of stronger standards would spur a new generation of innovation and investment in both technology and manufacturing, but that—given a simultaneous crisis in U.S. manufacturing—there was no guarantee that these investments would be made in the United States. Workers in the automotive sector continue to be impacted by incentives embedded in trade policy, for example, that have encouraged offshoring and other declines in manufacturing over the past several decades. Recent reinvestment in the United States to meet leading standards and build a new generation of more fuel-efficient vehicles has demonstrated progress in the opposite direction.

A strong, certain, and globally leading regulatory framework has ensured the market certainty needed for long-term investment in advanced vehicle technology manufacturing in the United States. This framework—alongside loan and tax support to facilitate manufacturing investments—has underpinned a revival in domestic automotive innovation and a significant recovery in automotive manufacturing and jobs. The industry's profitability and competitiveness globally have also been transformed.[3] As of 2018, jobs brought back in motor vehicle and parts manufacturing accounted for more than 35 percent of all net manufacturing sector jobs restored since the recession.[4] The auto industry has added more than 730,000 direct jobs since mid-2009, nearly 340,000 of these in manufacturing. This represents 54 percent growth since the recession low point in 2009.[5]

However, the challenges to U.S. leadership in vehicle technology and manufacturing are by no means over. China and the European Union (EU) have set ambitious goals to meet even stronger fuel economy and GHG standards over the next decade. China and others have demonstrated their commitment to pursuing global technology leadership.[6] Degradation of standards here in the United States would create a disadvantage for U.S. companies in a rapidly advancing global marketplace. Unfortunately, exactly at this time of economic challenge, the administration has proposed to step away from policy leadership. This puts American competitiveness, manufacturing, and jobs at risk.

Over the past decade the industry has invested towards an anticipated strong, increasing vehicle GHG and fuel economy trajectory through 2025. This report looks in detail at the potential impacts of a rollback on the advanced automotive supply chain.

In the sections that follow, we briefly review the mechanics of how clean vehicle standards work to increase jobs and the footprint of the clean vehicle manufacturing supply chain in the United States today. Using two different approaches to predicting how automakers would achieve the previously promulgated 2025 fuel economy and GHG goals, we then analyze and discuss the impacts of a rollback on demand for specific technologies, and how that would affect the companies and workers who make them.

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II. VEHICLE STANDARDS, MANUFACTURING, AND JOBS TODAY

Since 2010, there have been numerous studies predicting the impact of increasing fuel economy and GHG standards on jobs and manufacturing. These economic models consistently find that the standards are expected to increase jobs through two mechanisms. First, when consumers and businesses drive more fuel-efficient vehicles, they save significant fuel and money, which they spend throughout the economy. This boost in consumer spending increases jobs throughout the economy.

Second, the standards spur investment in new and added innovative technology within the auto industry. Added or enhanced technology on every vehicle means added labor hours—and thus more jobs—to develop and build that technology. Whether standards increase U.S. manufacturing jobs a little or a lot depends on the extent to which those investments in technology and manufacturing are made in the United States. In either case, job growth is still significant—especially within the industry.[7]

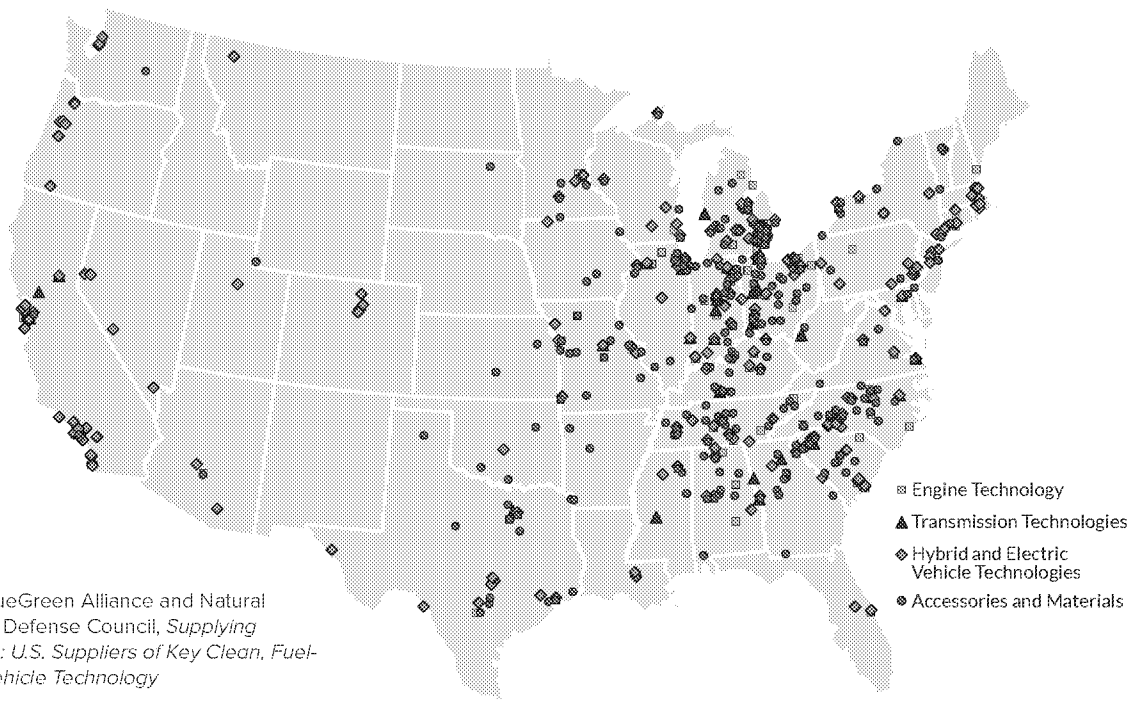
The most recent study of this nature looking just at the latest round of standards from 2017-2025 found the existing standards would create 100,000 more jobs in 2025 and 250,000 more jobs in 2035 throughout the economy.[8]

Real-World Deployment

In addition, since 2011, a number of researchers have tracked the real-world deployment and manufacturing of clean vehicle technology, and have seen the innovation, investment, manufacturing, and job growth predicted in economic models play out across the industry.

Today, the United States is a global leader in engineering and manufacturing advanced vehicle technologies. Strong long-term fuel economy and GHG standards have spurred innovation and job growth and strengthened the manufacturing sector as a whole. Domestic motor vehicle and parts manufacturing is the nation's largest manufacturing sector, directly employing 1 million workers today[9], with employment at auto suppliers up 19 percent since 2012.[10] In 2017, a BlueGreen Alliance and NRDC study found 288,000 American workers—in 1,200 factories and engineering facilities in 48 states—building the specific technologies that improve vehicle fuel efficiency.[11] These facilities are producing some of the world's most innovative automotive technologies for an ever more competitive global marketplace.

Figure 1: Suppliers Of Fuel-Efficient Vehicle Technology – More Than 1200 Facilities Nationwide



Source: BlueGreen Alliance and Natural Resources Defense Council, *Supplying Ingenuity II: U.S. Suppliers of Key Clean, Fuel-Efficient Vehicle Technology*

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Similarly, the *2018 U.S. Energy and Employment Report*, which directly surveys automotive industry employers, found that 23 percent of automotive suppliers stated that 100 percent of their revenue came from technology that improves fuel efficiency.[12] This is 6 percent higher than the previous year's report.[13]

The current standards have created market certainty necessary for both automakers and suppliers to feel confident in longer-term investments in emerging technologies. Many suppliers have already planned for, and invested in, production and development of technologies designed for automakers to meet the standards through 2025.[14]

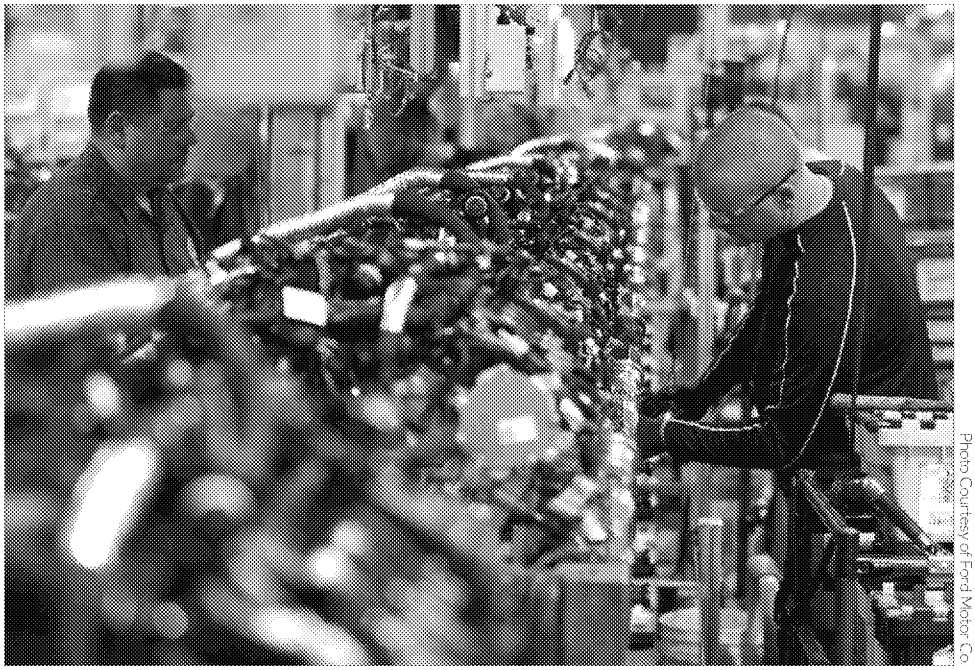

Photo Courtesy of Ford Motor Co.

Anchoring the growth of the supplier industry, U.S. automakers have also invested robustly over the past decade, both in added vehicle technology and in their facilities directly. Looking just at assembly plants, and automaker-owned engine, transmission, and stamping facilities, a 2018 BlueGreen Alliance report found that automakers have invested $76 billion in facilities across the country, completing 258 investments at 100 factories since 2008, with a further 42 investments at 37 facilities promised or underway through 2020.[15] Similarly, according to the Center for Automotive Research, between 2009 and 2017 automakers announced $119.5 billion in investments in North America. Two-thirds of that investment—$87.6 billion—has been or is planned to be invested in the United States.[16] While a portion of this investment is business as usual, much represents added or enhanced investment to meet globally leading standards.

III. PROPOSED ROLLBACK THREATENS INDUSTRY GAINS

In August of 2018, the EPA and the National Highway Traffic Safety Administration (NHTSA) released a notice of proposed rulemaking (NPRM) to significantly relax the car and truck efficiency and emission standards. In the proposed rule—entitled "The Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks"—the agencies put forward varying options for the rollback of the current standards, with the preferred option freezing the standards at 2020 levels.

In the NPRM, **the agencies own analysis shows the new rule would result in billions less annually in technology investment and, as a result, approximately 50,000 to 60,000 fewer American manufacturing jobs.**[17] Figures 2a and 2b show the agencies' analysis of the impacts of the rollback (of both the NHTSA–administered fuel economy standards, and the EPA-administered vehicle GHG standards, respectively) on technology spending and labor hours in every year.

Unfortunately, these estimates significantly underestimate the likely negative impacts of the proposed rule on jobs and the economy. They do not include any jobs lost elsewhere in the economy as consumers lose gas savings, nor do they reflect the other harms to U.S. competitiveness and jobs should lagging standards and uncertainty drive innovation and investment abroad.

In addition, the proposal threatens to dissolve the partnership between the federal and state agencies, throwing coordination, certainty, and U.S. technology leadership under the One National Program into disarray.

NHTSA's jobs analysis uses a similar approach to that used by economic modelers looking at direct impacts to the industry. The agencies project significantly lower spending on technology and translate that into reduced industry revenues. They then associate a number of jobs at automakers and suppliers with every dollar of revenue.

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A number of studies have been undertaken confirming the direction of these results. The Motor & Equipment Manufacturers Association (MEMA) contracted with IHS Markit to model the impacts of a regulatory rollback and found, "the agencies' preferred alternative 1 of zero percent increases year-on-year through 2026 would result in a loss of 67,000 direct automotive industry jobs" with a "full impact" of "500,000 direct, indirect, and induced jobs by 2025, in comparison to the employment levels supported by the augural standards."[18] Similarly, in September 2018, Synapse released an analysis that found the proposed—much weaker—rule would support 60,000 fewer job-years in 2025, and more than 125,000 fewer jobs years in 2035. The Synapse models also indicate that flat lining of the standards in 2020 will reduce GDP and eliminate many of the anticipated economic benefits generated under the augural standards.[19]

In the following sections, we review the effect of the rollback in more detail and examine the specific impacts of weakening the standards on technology deployment, manufacturing, and employment in the United States. We compare the technologies that would have been deployed by automakers under the current standards if implemented through 2025 in contrast with their deployment under the agencies' proposed rule that would halt required fuel economy and GHG improvement in 2020. We then connect these technologies with the American manufacturing facilities that build them.

Figure 2A: Rollback of Fuel Economy Standards: Agency Estimate of Impacts on Technology Cost and Labor Hours

Spending on Technology (Technology Costs) and Beyond MY 2016 (in billions)				
	Standards		Change	
	Baseline (Under current "augural" standards through 2025)	Proposed (Under "preferred option" freezing standards in 2020)	Difference in $B	Percentage change in technology spending
2017	$4 Billion	$2 Billion	–$2 Billion	-41%
2018	11	5	-6	-53%
2019	16	7	-10	-58%
2020	25	10	-15	-59%
2021	35	11	-24	-68%
2022	40	12	-28	-70%
2023	43	12	-30	-71%
2024	44	12	-32	-72%
2025	46	12	-34	-73%
2026	48	13	-35	-73%
2027	47	13	-34	-73%
2028	47	13	-34	-72%
2029	46	13	-33	-72%
2030	45	13	-33	-72%
Cumulative undiscounted reduction in technology spending 2017-2030			**-350 Billion**	

Domestic Labor Hours (1000s of Job Years)			
Standards		Change	
Baseline (Current "augural" standards)	Proposed (Preferred option)	Difference in job-years	Percentage change in domestic labor hours
1170 (1,170,000)	1170	0	0%
1210	1200	-10 (-10,000)	-1%
1240	1220	-20	-1%
1260	1240	-30	-2%
1290	1240	-50	-4%
1300	1250	-50	-4%
1310	1250	-60	-4%
1310	1250	-50	-4%
1310	1250	-50	-4%
1310	1260	-60	-4%
1310	1260	-50	-4%
1320	1260	-60	-4%
1320	1260	-60	-4%
1320	1270	-60	-4%
Industry supports 50–60,000 fewer jobs starting in 2021			

Adapted from NPRM Table VII-5, Federal Register page 43265

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Figure 2B: Rollback of Vehicle GHG Standards: Agency Estimate of Impacts on Technology Cost and Labor Hours

Spending on Technology (Technology Costs) Beyond MY 2016 (in billions)					Domestic Labor Hours (1000s of Job-Years)			
	Standards		Change		Standards		Change	
	Baseline (Under existing standards thru 2025)	Proposed (Under "preferred option" freezing standards in 2020)	Difference in $B	Percent change in technology spending	Baseline (Existing standards)	Proposed (Preferred option)	Difference in job-years	Percent change in domestic labor hours
2017	3	2	-1	-48%	1170	1170	0	0%
2018	9	4	-6	-61%	1210	1200	-10	-1%
2019	15	5	-10	-64%	1230	1220	-20	-1%
2020	21	7	-14	-68%	1260	1230	-20	-2%
2021	30	8	-21	-71%	1280	1240	-40	-3%
2022	34	9	-25	-74%	1290	1240	-40	-3%
2023	38	9	-29	-76%	1290	1250	-50	-4%
2024	40	9	-31	-78%	1290	1250	-50	-4%
2025	42	9	-33	-79%	1300	1250	-50	-4%
2026	46	9	-37	-80%	1310	1250	-50	-4%
2027	48	9	-39	-81%	1310	1260	-60	-4%
2028	50	9	-40	-81%	1320	1260	-60	-5%
2029	50	9	-41	-82%	1320	1260	-60	-5%
2030	50	9	-40	-81%	1330	1260	-60	-5%
Cumulative undiscounted reduction in technology spending 2017-2030			**-367**	**Billion**	**Industry supports 50 - 60,000 fewer jobs starting in 2021**			

Adapted from NPRM Table VII-26, Federal Register page 43291

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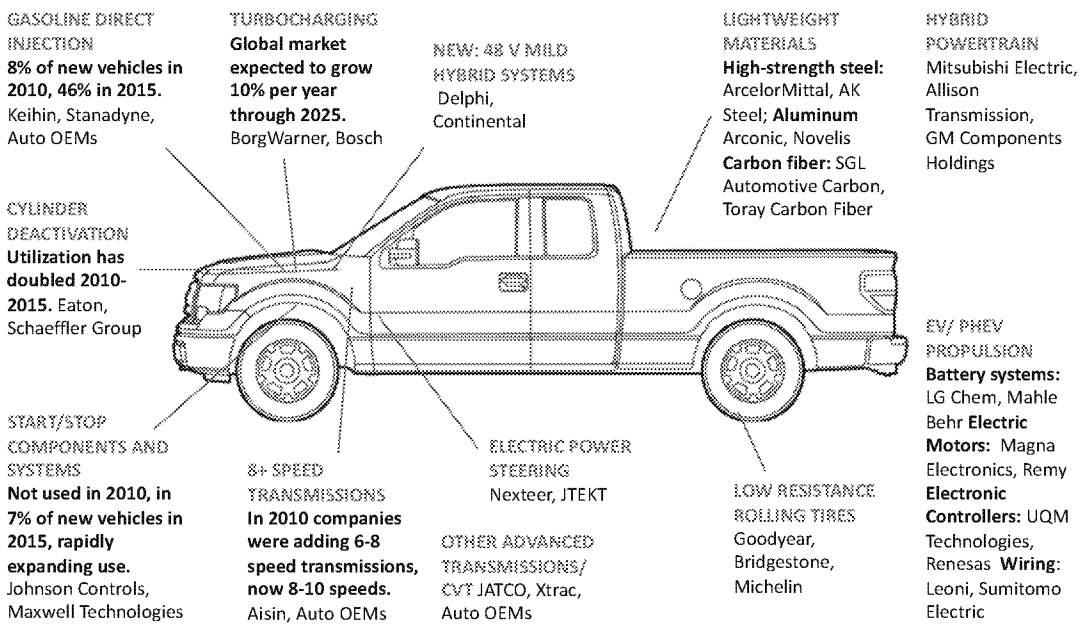
IV. THE IMPACT OF A ROLLBACK ON TECHNOLOGY DEPLOYMENT, MANUFACTURING, AND JOBS

Achieving higher fuel economy and cutting GHG emissions requires innovation across a variety of vehicle systems. In fact, there are many possible ways for different automakers that make different types of cars, SUVs, and trucks to meet any given fuel economy target.

The diagram below (Figure 3) provides an example of the kinds of technologies that could be used by a manufacturer of pickup trucks, for example, to improve fuel economy and cut emissions. To achieve different levels of emissions reduction, a manufacturer might choose to use just one or several of the technologies. And different manufacturers might use different groups of technologies to achieve the same result. For example, between 2010 and 2016, Ford chose to utilize a more efficient engine design and a much lighter aluminum body to achieve fuel economy improvements in the F150 pickup. At the same time, GM chose more modest lightweighting, and added mild hybrid assist to the advanced engine in its Silverado pickup[21]. For both automakers the innovations enabled the company to meet fuel economy targets and provide improvements to vehicle performance. Over the past decade, we've seen how strong and smartly structured standards have encouraged innovation across all types of vehicles and across a wide range of technologies.

In order to calculate the impact of a rollback on individual technologies, we utilize the same computer models that the agencies use to assess the feasibility and cost of proposed vehicle standards. These models simulate the entire fleet of new vehicles in America and predict the lowest cost technological pathways for every automaker (given their particular mix of vehicles) to achieve compliance with fuel economy and GHG standards in every year. When the estimates for every vehicle are rolled together, the model provides an estimate of how much of each fuel efficiency-related technology is used throughout the fleet. The model allows us to see the difference between technologies

Figure 3: Examples of Vehicle Components That Improve Fuel-Efficiency and Cut Emissions



Note: Many additional US manufacturers produce each of these technologies. Indicators of growth are drawn from agency, industry and press reports.

Source: BlueGreen Alliance and Natural Resources Defense Council.
Supplying Ingenuity II: U.S. Suppliers of Key Clean, Fuel-Efficient Vehicle Technology

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that would be used to meet the current standards that continue to increase thru 2025 and by contrast how much more or less technology would be used in the case of the agencies' preferred alternative in which standards stop increasing in 2020.

Different Models Tell Different Stories

The models that the agencies use to create a picture of the automotive sector rely on extensive industry data that automakers report, and decades of research by the agencies, technical experts, and others about advanced technology innovation, deployment, and costs in the sector. At the same time, however, the models can reflect very different assumptions about how the technology will be deployed. NHTSA uses the "CAFE Compliance and Effects Model", known as the "Volpe Model," to estimate the outcomes of changes to the rule. NHTSA's 2018 Volpe modeling for the NPRM has been criticized by many experts for changes to approach relative to previous modeling done by NHTSA and EPA to support the 2016 Technical Assessment Report and the previous midterm review of the standards.

In order to look at manufacturing and jobs impacts under both approaches we compare the results from two different runs of the Volpe model—the one used by NHTSA in the current NPRM, and one that utilizes assumptions that more closely simulate those used by the agencies in 2016 for the joint draft technical assessment report (TAR).[22, 23] Major differences between the models include the inclusion or exclusion of state Zero-Emission Vehicle requirements, assessments of the complexity and availability of cylinder deactivation and transmissions, differences in assumptions around the cost and effectiveness of these same technologies, assumptions around whether automakers will increase or decrease the performance of vehicles, and the use of different baseline vehicle fleets.

In both cases we look at what technology would be deployed under the existing or "augural" standards as compared to a rollback scenario where required fuel economy improvements halt in 2020. We then compare those results with our data on the manufacturing facilities across America that build these technologies.

In reality, each automaker chooses how they will comply with standards. They could choose either of these pathways or still others that were not modeled by the agencies. But in either approach, we find a rollback means much less technology deployed.

What We Found

The Volpe model tracks technologies critical to fuel economy improvement in major technology categories. Not all technologies' use increases as standards rise, some less advanced technologies (e.g. 6-speed automatic transmissions) would be replaced by newer technology (e.g. 8- and 10- speed transmissions) and thus decline. In the case of a rollback, investments in these less advanced technologies continue, while investment in the new technology is reduced or halted. Overall, however, in line with industry findings of far lower technology spending, we find significant growth foregone. A rollback means much less technology deployed and less future demand for the companies that build them.

The charts in the following sections show what percentage of the vehicle fleet would use key technologies under each deployment model if standards increase through 2026, versus if they are flatlined in 2020. The charts show impact on key technologies in each major vehicle system, the companies which make those technologies in our data, and their location nationwide.

Our analysis vividly shows that regardless of the modeling approach used, flatlining the standards in 2020 significantly slows adoption of advanced technologies in almost every vehicle subsystem, and cuts demand for products made by hundreds of manufacturers and hundreds of thousands of workers all across the country.

Today, approximately 326,000 Americans work nationwide in the facilities that manufacture the technologies we review in this report. But these companies and facilities are not uniform. Many of these companies have already invested in R&D and plant and equipment and have hired or plan to hire new staff to meet the demand for new technology anticipated under the existing and augural standards. Others had planned to invest or expand in the near future. Some will face stranded spending or assets should there be major changes to the existing and augural standards, while others may not see expected growth. Some of the companies in our data make just one or a few of these technologies, and whether demand increases or decreases for specific technologies is likely to have profound effects. Others make multiple technologies, including some that may increase while others decline.

In our analysis we associate each technology, and the degree to which it is anticipated to increase or decline, with the manufacturing facilities that make those technologies and an estimate of their exposure to changes in demand for fuel efficiency related technologies.

> Our analysis vividly illustrates that—regardless of the modeling approach used—flatlining the standards in 2020 significantly slows adoption of advanced technologies in almost every vehicle subsystem and cuts demand for products made by hundreds of manufacturers and hundreds of thousands of workers all across the country.

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Figure 4: Estimated Impacts of Fuel Economy Standards and Rollback by Type of Vehicle Technology

	Number of Companies Potentially Impacted	Number Of U.S. Manufacturing Facilities Potentially Impacted	Employment At These Facilities Today	Projected Future Job Growth Under Existing Standards	Number Of Future U.S. Vehicle Technology Manufacturing Jobs Lost Or Foregone Under Weaker Standards
Engines and engine components	42	97	149,000	+16,000 to +71,000	-16,000 to -71,000
Transmission technology[24]	16	32	25,000	0 to -1000	0 to +1000
Hybrid and electric technology	170	213	69,000	+26,000 to +91,000	-26,000 to -91,000
Accessories and mass reduction	85	235	83,000	+41,000 to +48,000	-41,000 to -48,000
TOTAL			**326,000**	**+89,000 to +202,000**	**-89,000 to -202,000**

When we calculate the impact of changes in demand for the specific technologies identified on the share of workers at each type of company likely to be highly vulnerable to technology shift, **we find between 89,000 and 202,000 of tomorrow's jobs lost or foregone as a result of the rollback.**

A summary of our results by major vehicle technology type are found in Figure 4, above.

Again, these jobs estimates only reflect the nearest-term impacts of loss of future investment in advanced vehicle technology due to relaxing vehicle standards. They do not include impacts that might result from changes to the competitiveness of the industry, or to location of production overall, as technology changes globally.

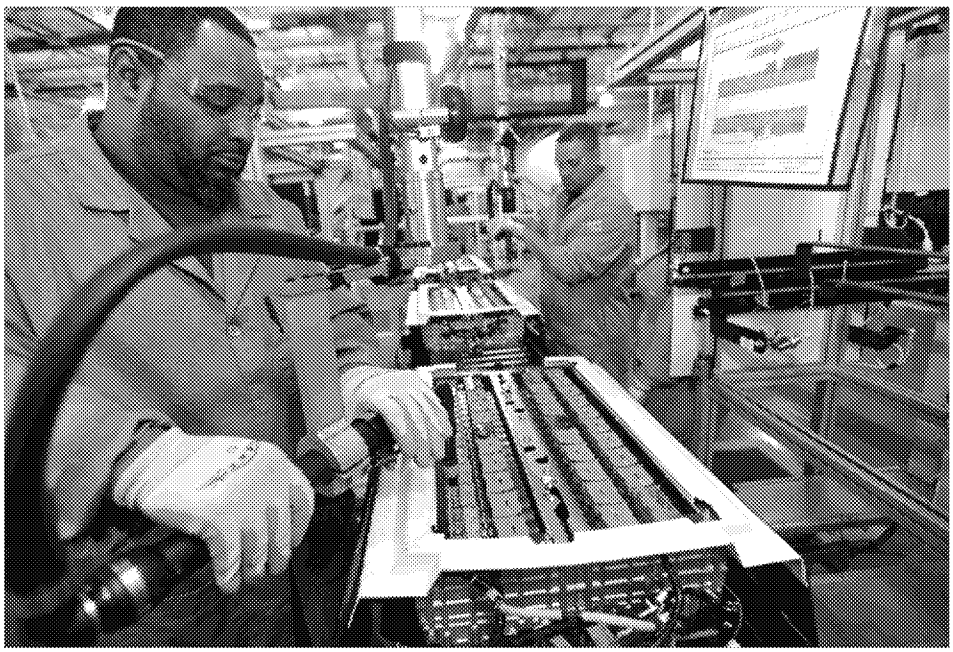

Photo Courtesy of Ford Motor Co.

Detailed Results

Figures 5–8 on the pages that follow show the impact of changes to the existing/augural standard on major vehicle subsystems and technology.

When we calculate the impact of changes in demand for the specific technologies identified on the share of workers at each type of company likely to be highly vulnerable to technology shift, we find between 89,000 and 202,000 of tomorrow's jobs lost or foregone as a result of the rollback.

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Engine Technology

As shown in Figure 5a, very few engine technologies in any modeling scenario are required to be deployed uniformly across the fleet, indicating that manufacturers have a diverse assortment of powertrain options to meet any future standards. However, it is clear when comparing the 2020 and 2025 modeling results that there is a dramatic drop-off in investment in more expensive and complex technologies. For example, 24-bar turbocharged-downsized (TDS) engines see a 20-30 percent penetration when meeting the 2025 standards, but that drops below 10 percent when the standards are held at 2020 levels, with that leading to more penetration of the less advanced 18-bar TDS engines. There is also a dramatic drop in stoichiometric gasoline direct injection, from near ubiquity when meeting the 2025 standards (80-90 percent) to levels barely above the current fleet penetration if standards are held at 2020 levels (see Figure 9).

Figure 5a: Engine Technology Deployment in the New Vehicle Fleet in 2032 Under Existing/Augural Standards That Increase Through 2025, and Under the Agencies' "Preferred Option" Freezing Standards at 2020 Levels

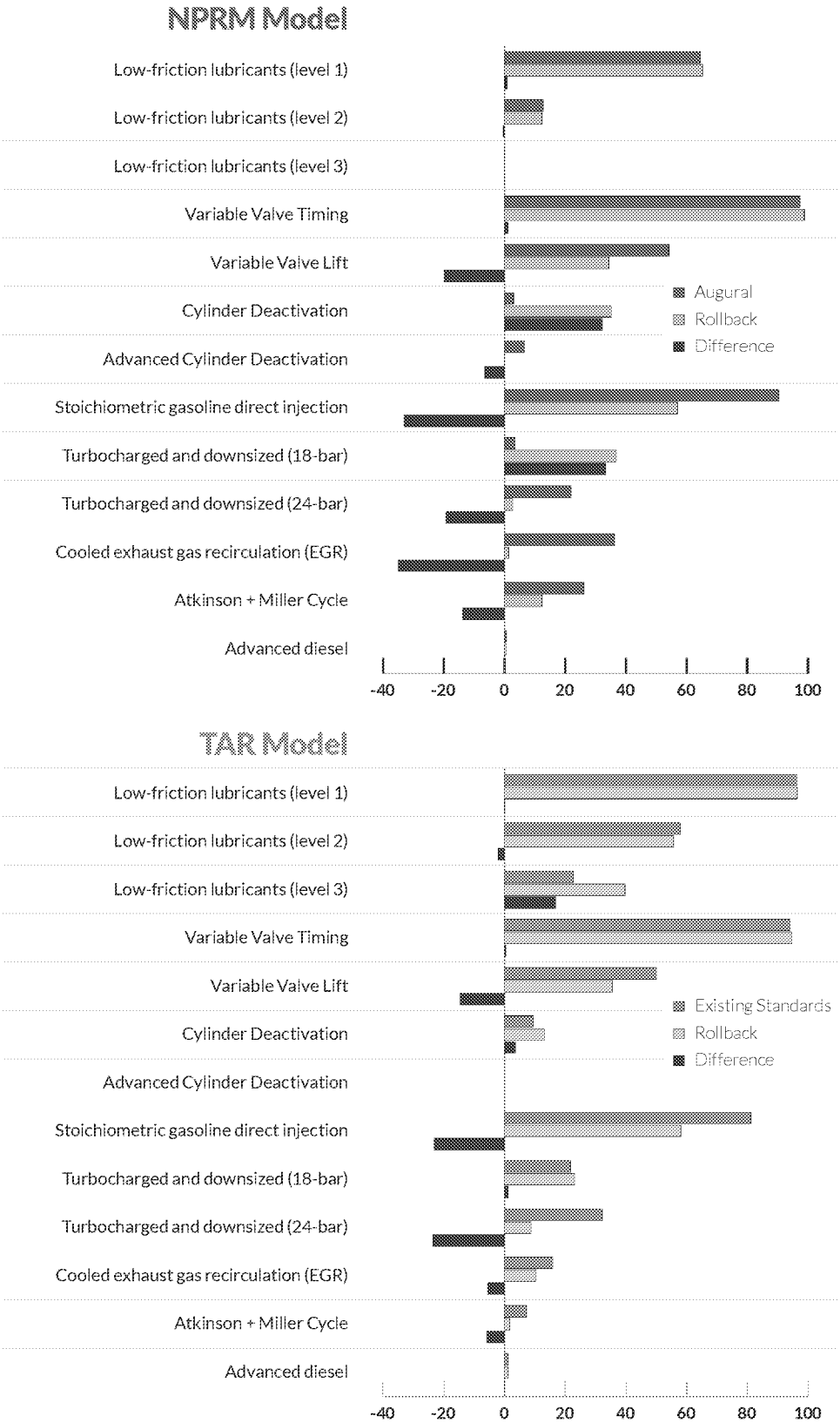

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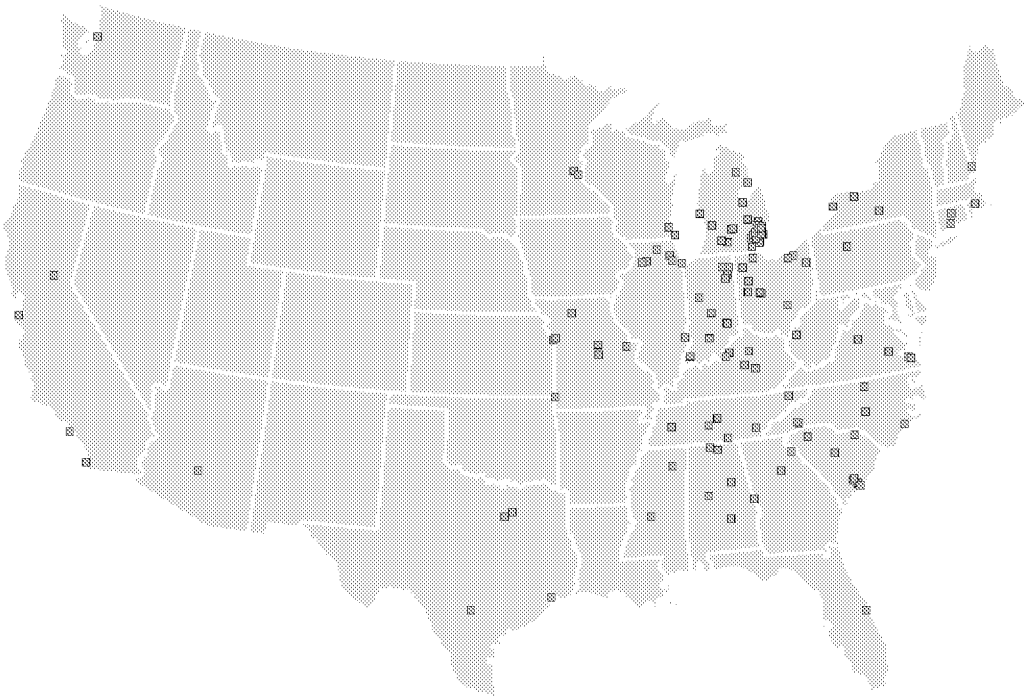
Figure 5b: Selected Companies Manufacturing Engines and Engine Technologies in the U.S. and Their Location



Our data shows 42 companies manufacturing advanced engine technology at 97 locations in the United States.

These facilities employ approximately 149,000 American workers.

Our analysis suggests that 16,000 to 71,000 future jobs in this sector could be lost or foregone should the nation move away from the ongoing fuel economy and GHG increases in the existing/ augural standards.

Achates Power
American Axle & Manufacturing
Autocam Corporation
BMW Manufacturing Co
Borg Warner
Borg Warner Morse TEC
Bosch
Continental Automotive
ContiTech Thermopol
Cooper Standard
Cummins Turbo Technologies
Dana Incorporated
Delphi Technologies
Denso Manufacturing
Eaton
EFI Automotive
FCA (Fiat Chrysler Automobiles) US LLC
Ford Motor Company
General Motors
Hitachi Automotive Systems Americas, Inc.
Honda of America Manufacturing
Honeywell Transportation Systems
Hyundai Motor Manufacturing
Keihin
Kia Motors
Magneti Marelli USA
Modine Manufacturing
Nissan North America
Praxair Surface Technologies
PurePower Technologies
Ricardo
Rotomaster
Schaeffler Group USA
Senior Flexonics
Stanadyne
Subaru
TE Connectivity
TI Automotive
Toyota Motor Manufacturing
Tula Technology
Valeo
Volvo Car: U.S. Operations

The companies listed here may also manufacture other advanced clean or fuel-efficient technologies. In addition, our dataset is not comprehensive. It is likely that additional companies and facilities manufacture these technologies in the United States.

This analysis is an estimate of the impact of regulatory changes on sub-sectors of the industry. It does not predict impacts on any specific company or location.

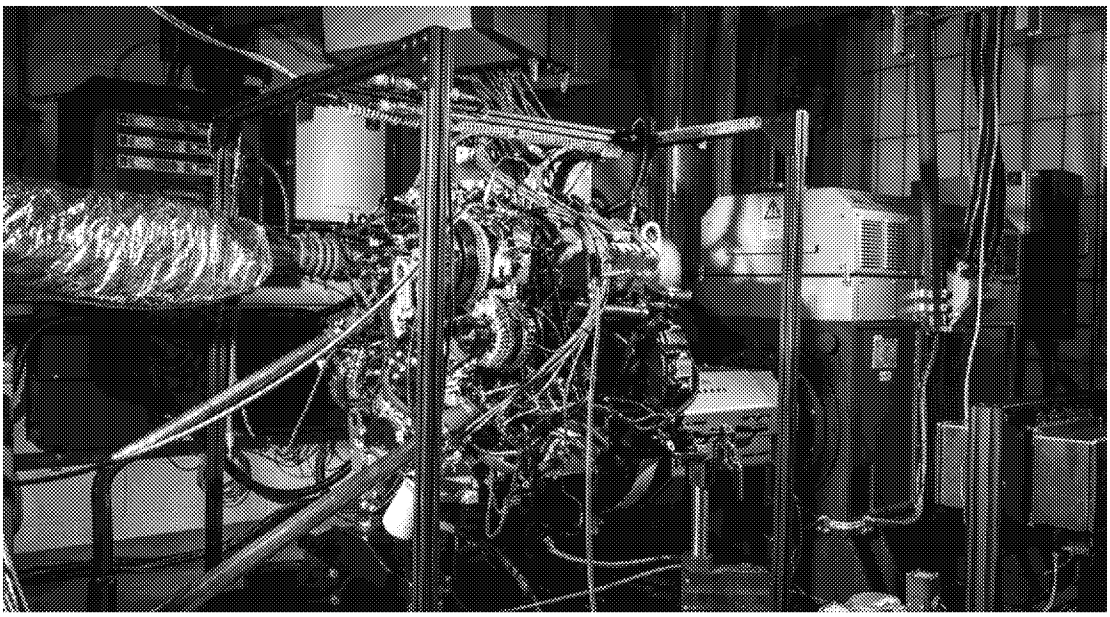


Photo Courtesy Achates Power

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Transmission Technologies

As was the case for engines, Figure 6a shows that there is a broad array of transmission technologies that can be deployed to meet future vehicle standards. And again, what is observed is that a reduced standard results in greater penetration of lower-tech solutions and less deployment of more advanced technologies. This is most pronounced in the TAR modeling runs, which shows less than 10 percent penetration of the most common transmission seen today, a 6-speed automatic, while freezing standards at 2020 levels would see a fleet retaining more than 40 percent adoption, similar to today's levels. This also holds true when comparing continuously variable transmissions, which have seen growth over the past decade in response to strong standards. These trends are less pronounced in the NPRM results due to the pathway approach of the NPRM Volpe model that leads the fleet to adopt transmission technologies with less consideration of individual cost or effectiveness.[25]

Overall, shifts in the stringency of the standards result in shifts amongst transmission technologies often manufactured by the same companies, and thus in only modest impacts on employment. Under strong standards we would expect to see increased labor hours as companies deploy more advanced transmissions with greater content, and deploy more types of transmissions. Our methodology does not allow us to make this granular a distinction amongst transmission technologies, however. If it did, we might expect to see modest losses rather than gains under a rollback in this technology category.

Figure 6a: Transmission Technology Deployment in the New Vehicle Fleet in 2032 Under Existing/Augural Standards That Increase Through 2025, and Under the Agencies' "Preferred Option" Freezing Standards at 2020 Levels

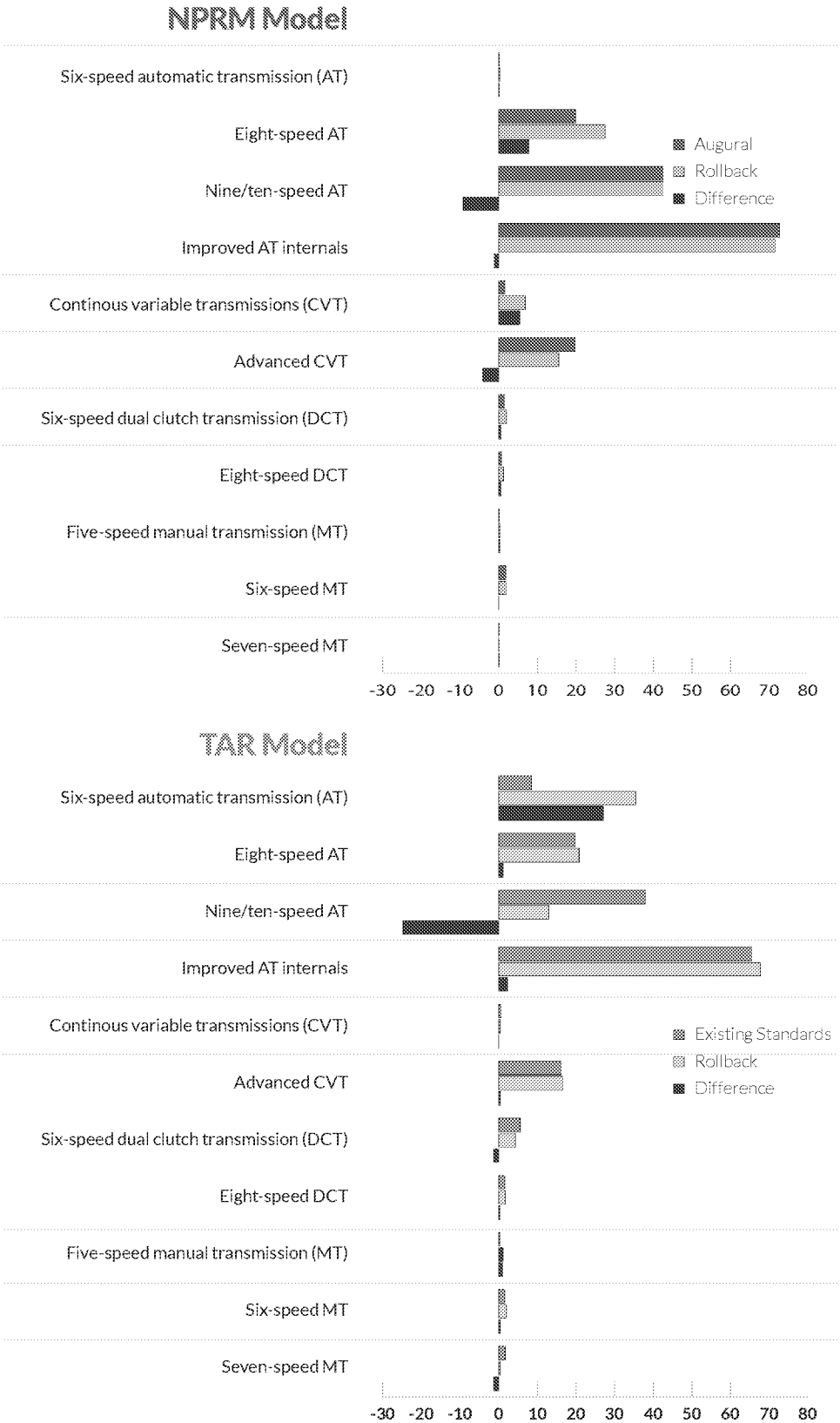

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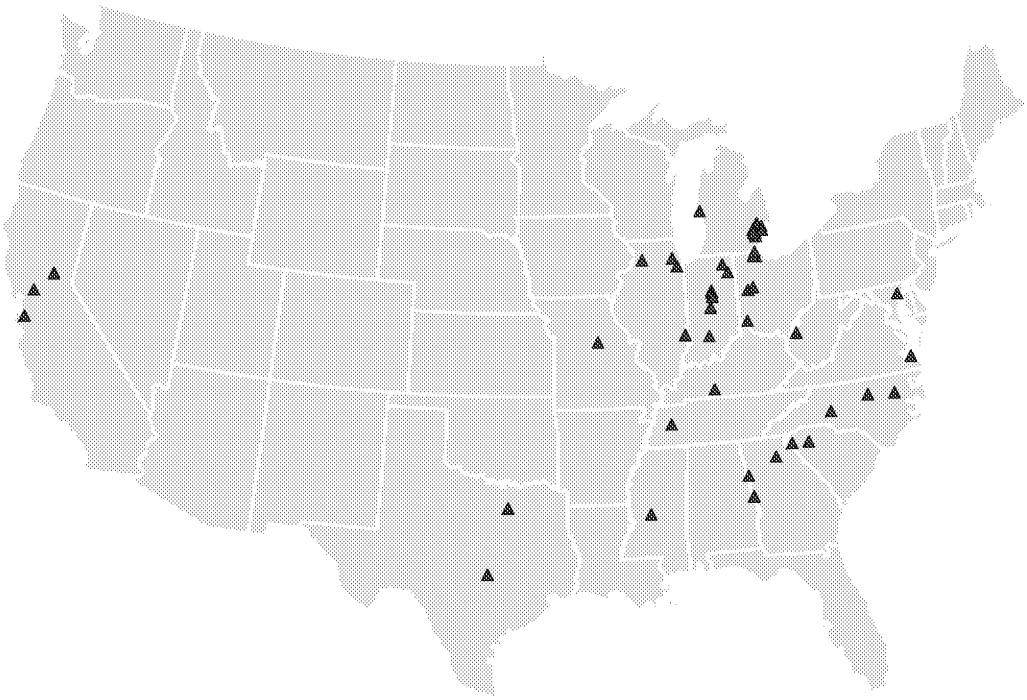
Figure 6b: Selected Companies Manufacturing Transmissions and Transmission Technologies in the U.S. and Their Location



Our data shows 16 companies are manufacturing transmission technology at 32 locations in the United States.

These facilities employ approximately 25,000 American workers.

Our analysis suggests that the sector could gain 0 to 1,000 jobs should the nation move away from the ongoing fuel economy and GHG increases in the existing/augural standards.

- Aisin World Corporation of America
- Borg Warner
- Dana Incorporated
- Efficient Drivetrains
- Fallbrook Technologies, Inc
- FCA (Fiat Chrysler Automobiles) US LLC
- Ford Motor Company
- General Motors
- Hilite International
- Honda of America Manufacturing
- Hyundai Powertech
- Keihin Carolina System Technology (KCST)
- NHK of America Suspension Components (NASCO)
- Tremec
- Xtrac
- ZF

The companies listed here may also manufacture other advanced clean or fuel-efficient technologies. In addition, our dataset is not comprehensive. It is likely that additional companies and facilities manufacture these technologies in the United States.

This analysis is an estimate of the impact of regulatory changes on sub-sectors of the industry. It does not predict impacts on any specific company or location.

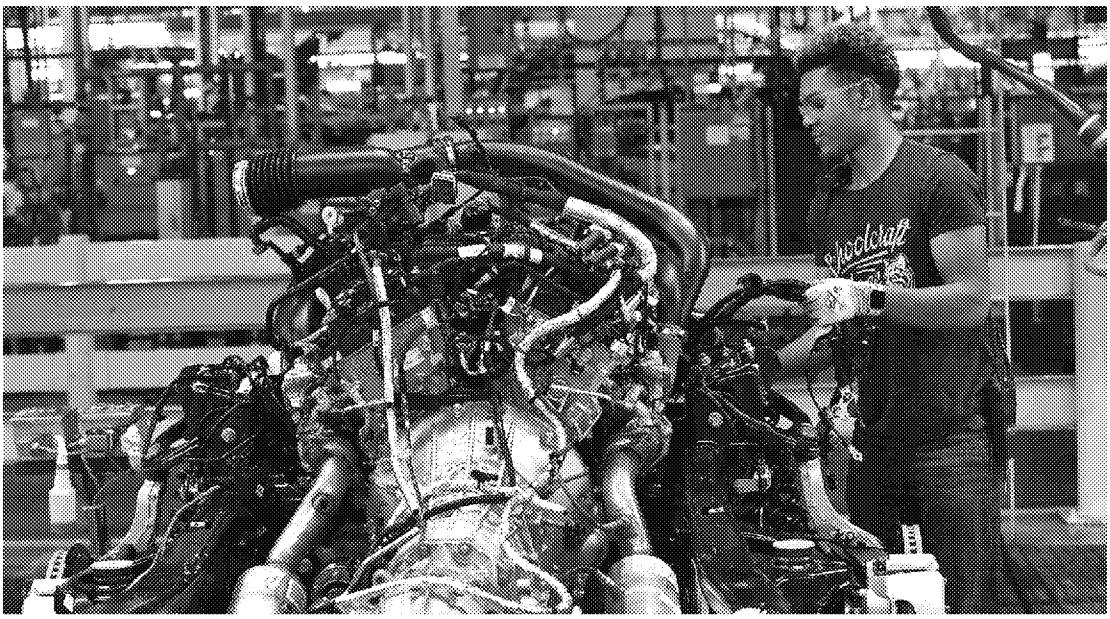


Photo by: Sam VarnHagen/Ford Motor Co.

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Hybrid and Electric Vehicle Technologies

The electrified powertrains technologies identified in Figure 7a tend to be more costly compared to other technology options, and as a consequence are likely to be one of the last to be chosen, according to the model's "effective cost" algorithm. Therefore, these technologies are some of the most susceptible to changes in the stringency of the program, which is borne out in the modeling results in Figure 7a. This is especially pronounced in the NPRM results, for which the modeling assumes more than half the vehicle fleet will need to adopt strong or mild hybridization in response to the current standards. In contrast, under a freeze at 2020 levels, virtually no mild or strong hybridization would be required, and levels of start-stop would barely budge above today's levels. However, given the rapid reduction in battery costs over the past five years, these technologies are expected to become increasingly affordable. While the TAR model does not predict that automakers would utilize nearly as high levels of hybridization to meet the standards, stepping away from standards that drive investment in these advanced technologies would, in either case, represent a major step backward in the technologies expected to be critical to the future of the industry beyond 2025.

Figure 7a: Hybrid and Electric Vehicle Technology Deployment in the New Vehicle Fleet in 2032 Under Existing/Augural Standards That Increase Through 2025, and Under the Agencies' "Preferred Option" Freezing Standards at 2020 Levels

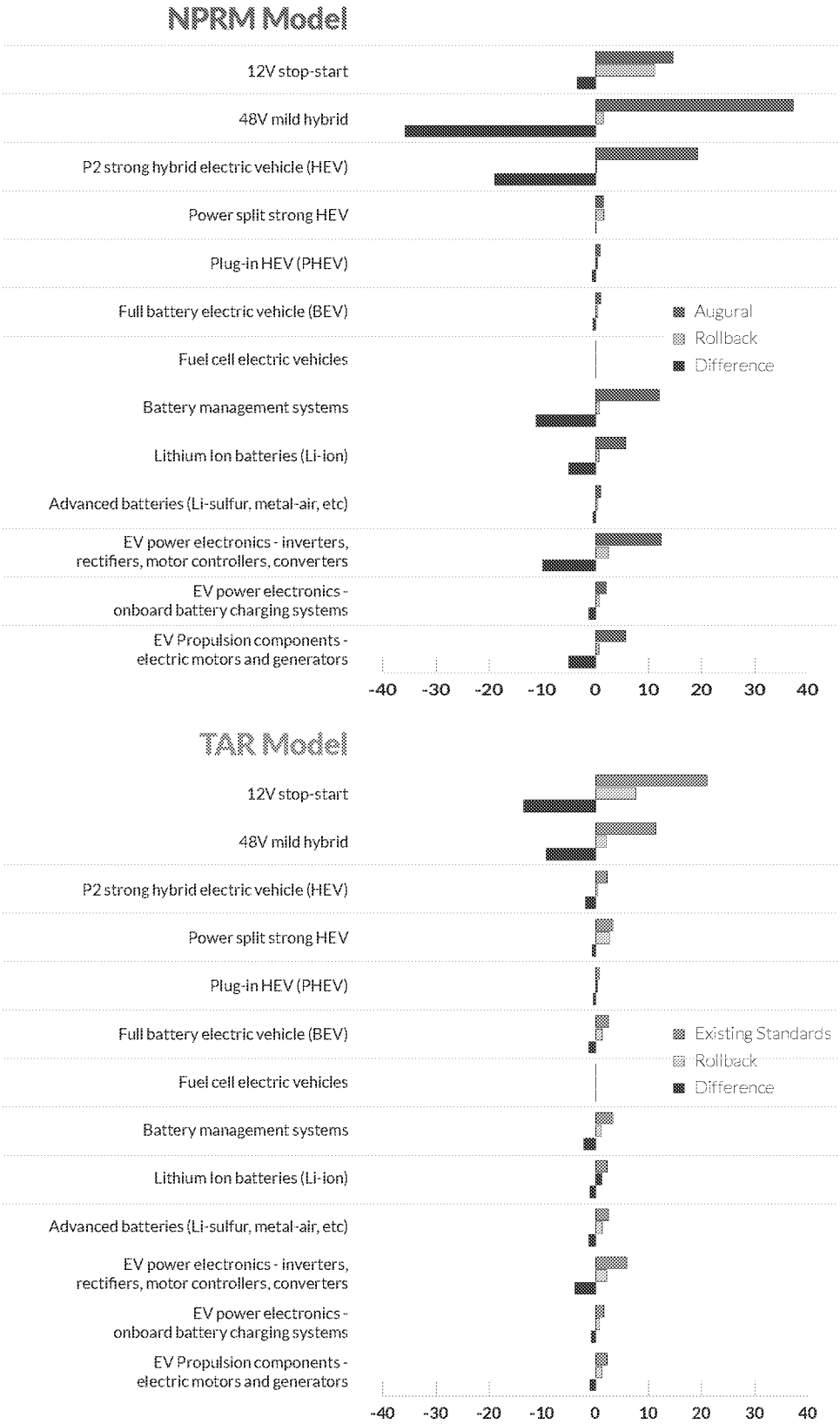

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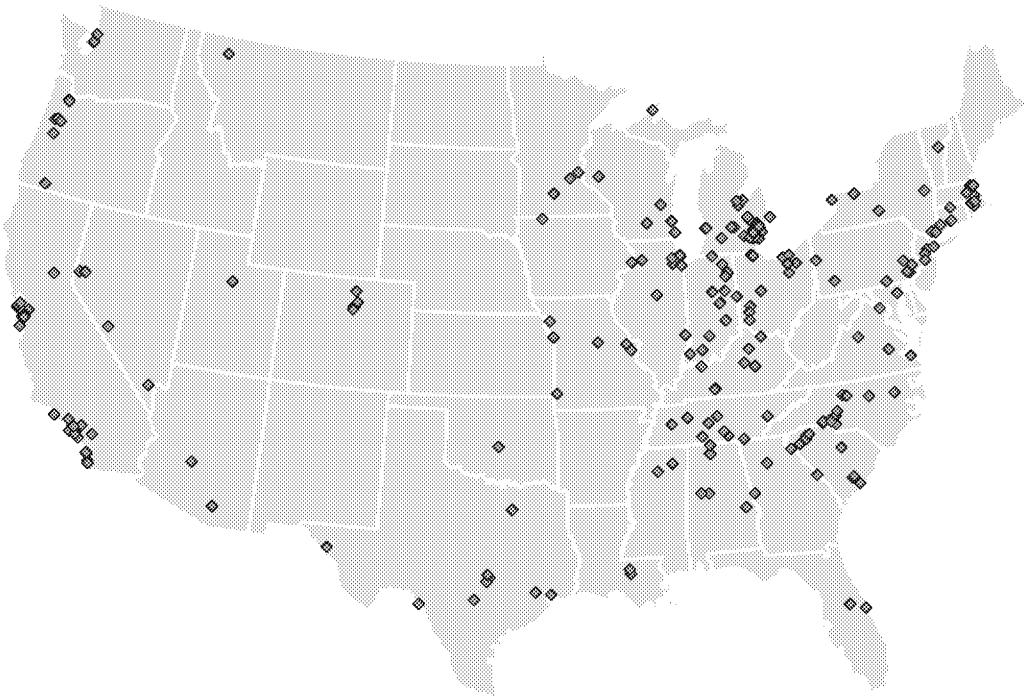
Figure 7b: Selected Companies Manufacturing Hybrid and Electric Technologies in the U.S. and Their Location



Our data shows 170 companies manufacturing hybrid and electric vehicle technology at 213 locations in the United States.

These facilities employ approximately 69,000 American workers.

Our analysis suggests that 26,000 to 91,000 future jobs in this sector could be lost or foregone should the nation move away from the ongoing fuel economy and GHG increases in the existing/ augural standards.

3M Corporation
A123 Systems
AC Propulsion
ACTIA US
ADVICS Manufacturing
Airbiquity
Albemarle
AllCell Technologies
Alta Motors
Altair Nanotechnologies
ALTe
American Lithium Energy Corporation
Amprius
Analog Devices
Andromeda Interfaces
Applied Nanotech
Arcimoto
Ardica Technologies
Atomized Products Group
Axion Power International
BASF
BASF Catalysts
BASF Toda America
Bender
Bettergy
Borg Warner
Bosch
Brammo
Cadenza Innovation
Café Electric
Caleb Technology Corporation
California Lithium Battery
CAMX Power
Celgard
Chargetek
Chasm Advanced Materials
Continental Automotive
CoorsTek Fluorochemicals
Coulometrics
Coveris Advanced Coatings
Curtis Instruments
Daikin
Dana Incorporated
Daramic
Delco Remy
Delphi Technologies
DENSO
Dexmet Corporation
Dreamweaver International
DuPont
EaglePicher Technologies
East Penn Manufacturing
Eaton Cooper Bussman
Elegus Technologies
EnerG2
Enevate
Entek
Evans Capacitor Company
Federal-Mogul Systems Protection
Ford Motor Company
Forge Nano
Freudenberg NOK
Fujitsu Electronics America
G&S Titanium
General Motors
GeneSiC Semiconductor
Gentherm
GKN Driveline
Glatfelter
Gotion
Green Gears
GS Yuasa
Hemlock Semiconductor Group
Henkel Electronics Materials
Hitachi Automotive Systems Americas
Hollingsworth and Vose
Honda of America Manufacturing
II VI Marlow
Inmatech
Innova EV
Johnson Controls
Johnson Matthey Fuel Cells
K2 Energy Solutions
Karma Automotive
KEMET Corporation
Kimball Electronics Group
Kongsberg Automotive
LG Chem Michigan
Linde Group
Livent Corporation
Lucid Motors
Magna Electronics
MAHLE Behr
Mainstream Engineering
Materion Tech Materials
Maxim Integrated Products
MaxPower
Maxwell Technologies
Mercedes-Benz US International (MBUSI)
Midtronics
Mitsubishi Electric
Myers Motors
NEI Corporation
NetGain Motors
Nissan North America
Nitto Automotive
NOHMs Technologies
Novarials
Nuvera Fuel Cells
NXP Semiconductor
Oak-Mitsui
Optodot
Panasonic
Paraclete Energy
Pellion Technologies
Pi Innovo
Planar Energy
Plug Power
Polaris Industries
PolyPlus Battery Company
Powerex
Prayon
Prieto Battery
Primet Precision
Proton Onsite
Pyrotek
QuantumScape
RAPA LP
Renesas Electronics Corporation
Rinehart Motion Systems
Rivian Automotive
Robert Bosch Battery Systems LLC
Romeo Systems
Sakti3
Samsung SDI
SBE Electronics
Seeo
Sendyne Corporation
Sensata Technologies
Sevcon
Showa Denko Carbon
Silatronix
SiNode Systems
Sion Power Corporation
Solid Power
SolidEnergy Systems
Soltex
Solvay
Soulbrain
Sumitomo Electric
TE Connectivity
Tesla Motors
Texas Mineral Resources Corporation
Texmac
TIC Automotive Systems
Toray Fluorofibers
TreadStone Technologies
Umicore Autocat USA
UQM Technologies
VIA Motors International
Voltronix
Wells Vehicle Electronics
Wildcat Discovery Technologies
Wolfspeed
XALT Energy
XG Sciences
ZAF Energy Systems
Zero Motorcycles
ZF
ZincFive

The companies listed here may also manufacture other advanced clean or fuel-efficient technologies. In addition, our dataset is not comprehensive. It is likely that additional companies and facilities manufacture these technologies in the United States.

This analysis is an estimate of the impact of regulatory changes on sub-sectors of the industry. It does not predict impacts on any specific company or location.

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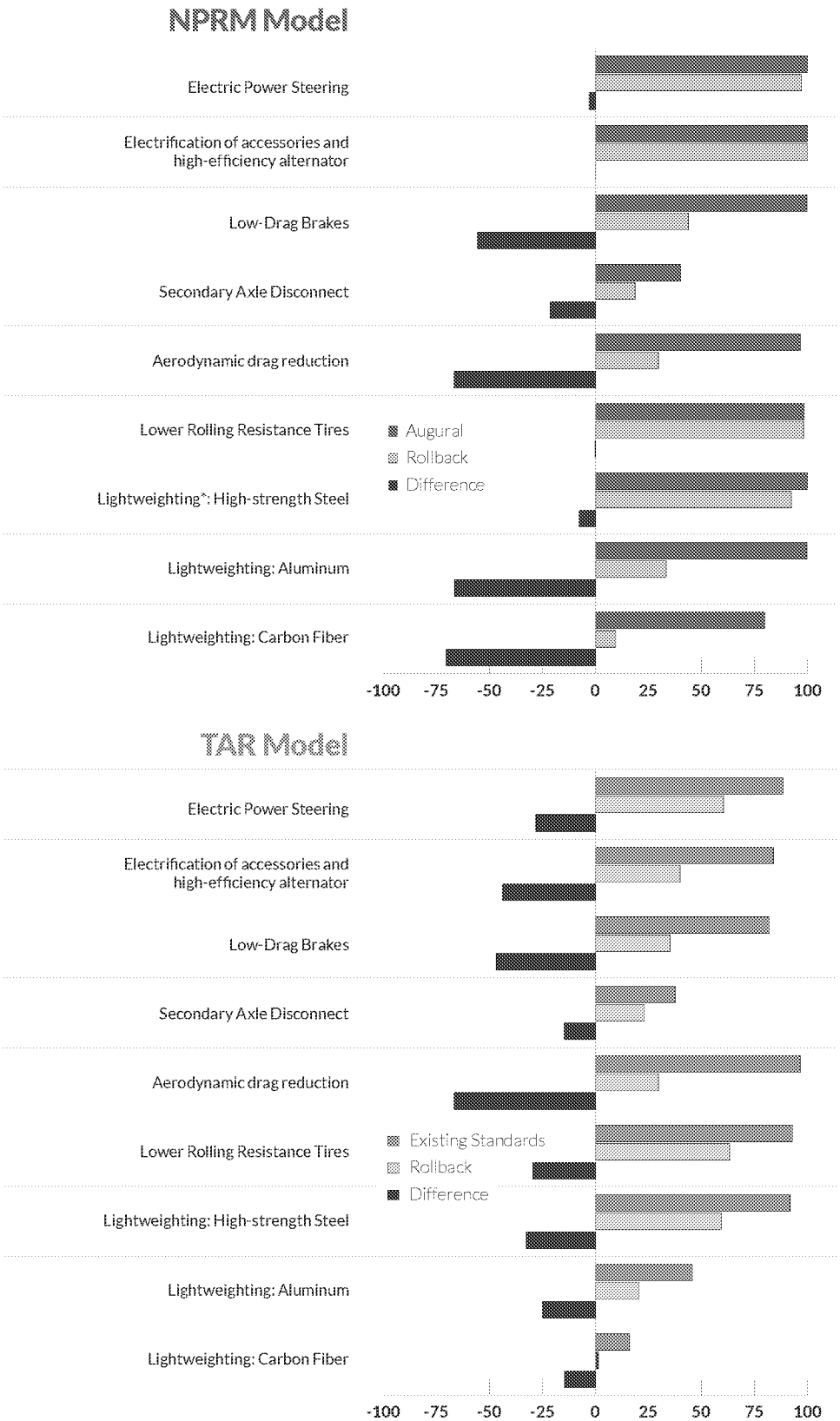
Accessories and Materials

Technologies that reduce vehicle and accessory load are at the other end of the spectrum from electrification. Many of these represent some of the most cost-effective means to improve efficiency and are strongly adopted under all scenarios. However, the most advanced technologies in this space could see large reductions in deployment as a result of a freeze at 2020 levels, including next-generation materials development for lightweighting and rolling resistance reduction, as well as advanced aerodynamics.

It is important to note that the Volpe model does not project usage of specific lightweight materials, but rather the share of vehicles achieving increasing levels of mass reduction—up to 20 percent mass reduction of the vehicle body. We have assumed that increasingly high levels of lightweighting require the use—at least in part—of high strength lightweight steel, aluminum, and carbon fiber, respectively, in line with National Academy of Sciences assumptions with respect to effectiveness and cost.[26] This data does not project the exact share or intensity of use of different materials within what are now and will continue to be multi-material vehicles.

Figure 8a: Accessory and Materials Technology Deployment in the New Vehicle Fleet in 2032 Under Existing/Augural Standards That Increase Through 2025, and Under the Agencies' "Preferred Option" Freezing Standards at 2020 Levels



*See discussion at left on allocation of lightweight materials to mass reduction categories.

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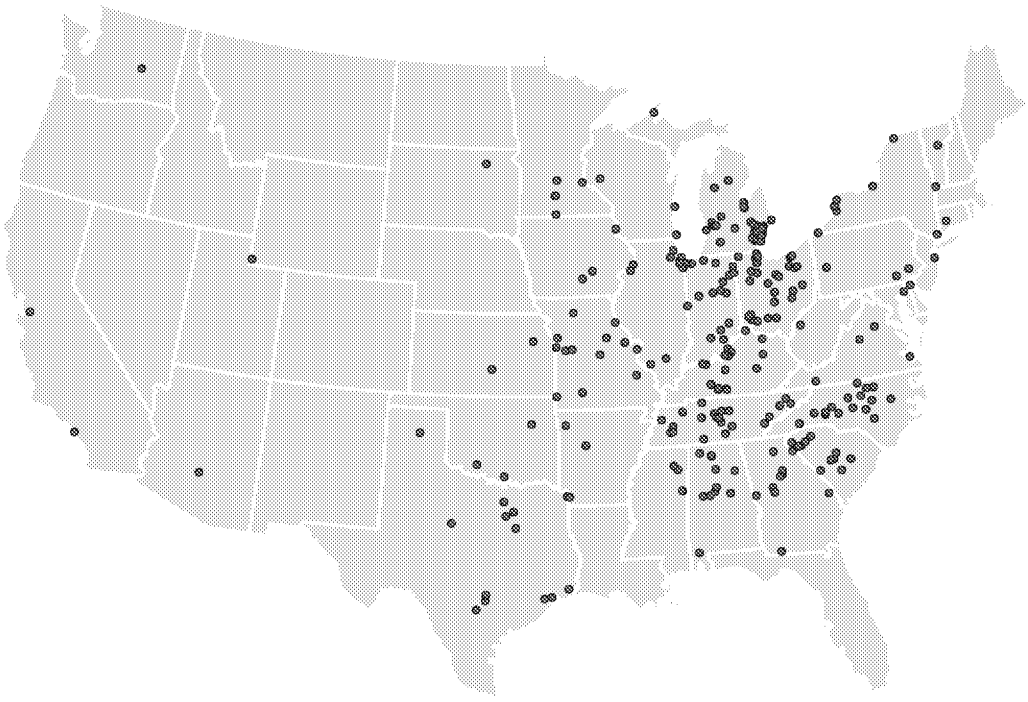
Figure 8b: Selected Companies Manufacturing Efficient Accessories and Mass-Reduction Technologies in the U.S. and Their Location



Our data shows 85 companies manufacturing fuel-efficient accessories and advanced materials at 235 locations in the United States.

These facilities employ approximately 83,000 American workers.

Our analysis suggests that 41,000 to 48,000 future jobs in this sector could be lost or foregone should the nation move away from the ongoing fuel economy and GHG increases in the existing/augural standards.

3M Corporation
A. Schulman
Accuride Corporation
ADVICS Manufacturing
Aisin Drivetrain
AK Steel
Akebono Brake Corporation
Alcoa
Aleris Rolled Products
American Axle and Manufacturing
American Showa
American Synthetic Rubber Company
ArcelorMittal
Arconic
Associated Fuel Pump Systems Corporation
Benteler Automotive
Bodine Aluminum - Toyota
Borg Warner
Bosch
Bowling Green Metalforming, a Magna company
Bridgestone Americas
Buehler Motor
Constellium
Continental
Continental Structural Plastics, Inc.
Continental Tire
Cooper Tire and Rubber Company
Corvac Composites
Covestro
Cytec Carbon Fibers
Dana Incorporated
DENSO
Dicastal North America
Eberspaecher
Electric Fan Engineering
Faurecia
Ford Motor Company
General Motors
GKN Driveline
Goodyear Tires
Hino Motors (Commercial truck division of Toyota)
Hitachi
Hitachi Metals America
JTEKT North America
Kyosan DENSO Manufacturing
Lear Corporation
Materia
Michelin North America
Modine Manufacturing
Nemak
Neuman Aluminum Impact Extrusioin
New Process Steel
Nexteer
Novelis
NSK Steering Systems America
Oliver Rubber Company
Plasan Carbon Composites
Posco Americas
Pro-Tec Coating
SGL Group
Sika Corporation
Solvay
Spartan Light Metal Products
SRG Global
Stahl Specialty
Steel Dynamics
Sumitomo Rubber USA
Superior Essex
Superior Graphite
Superior Industries
TE Connectivity
ThermoAnalytics
Topre America
Toray Carbon Fibers
Toyota Boshoko Tennessee
Truelove & Maclean (T&M)
U.S. Steel Corporation
Valeo
Von Roll U.S.A.
Wescast
Windings
Worthington Industries
ZF Chassis Systems
ZF TRW North America

The companies listed here may also manufacture other advanced clean or fuel-efficient technologies. In addition, our dataset is not comprehensive. It is likely that additional companies and facilities manufacture these technologies in the United States.

This analysis is an estimate of the impact of regulatory changes on sub-sectors of the industry. It does not predict impacts on any specific company or location.

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V. NEGATIVE IMPACT ON DOMESTIC INNOVATION AND U.S. COMPETITIVENESS IN KEY EMERGING TECHNOLOGIES

Our analysis, discussed above, shows direct negative impacts of a rollback on investment and jobs across vehicle systems. Looking at individual technologies more closely, however, our data suggests several additional ways in which a rollback could threaten the strength of the U.S. automotive sector.

The two models whose outputs we review are estimates that predict *future* deployment of technology. Meanwhile, the U.S. EPA's *Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends 1975-2017* Report (known as the annual "Trends Report") as well as the technical record for the rulemaking, document the *actual* past adoption of these technologies under the standards to date. Looking across both sets of data, we can see the broader role standards (and the rollback) play in innovation.

In Figure 9 we show the actual and predicted deployment of four important fuel economy and emissions reducing technologies between 2010 and 2025. What we see are three consistent themes:

- Even well known and available technologies—such as turbocharging, which has been used to improve performance for decades—are not widely deployed to improve fuel economy in the absence of increasing standards. And even when those technologies become fairly widely deployed (turbocharging is now used in more than 25 percent of vehicles to achieve both efficiency and performance gains) cutting standards results in sharp slowdowns in further deployment.
- Under the existing standards, automakers and suppliers have developed, manufactured, and adopted new and advanced technologies at a steady rate and would be projected to continue to do so should standards continue along the current trajectory.
- A rollback would result in a clear reduction in the pace of technology development and deployment across diverse technologies, but with particularly extreme impacts on the newest and most advanced technologies just entering the market.

Looking at advanced conventional technology, all these analyses show that there is still extensive opportunity to deploy conventional technologies within the fleet, and that a rollback would stop that trajectory far short of full deployment. For more advanced technologies, a rollback could mean the difference between developing robust domestic manufacturing capacity in the United States and ceding that investment elsewhere.

We also note that this data does not show technologies for which there is near zero deployment today, but which under strong standards were expected to grow. These emerging technologies include important enablers of increased hybrid and electric vehicle deployment—such as 48-volt power electronics—but also highly innovative conventional engine technologies, such as an opposed piston gasoline engine currently being demonstrated delivering over 35mpg in a pickup truck.[27]

Furthermore, while meeting existing standards through 2025 does not require high levels of hybrid or electric vehicle penetration, the proposal to dramatically lower 2025 targets—plus failing to set higher targets through 2030 and proposing to limit states' authority to set zero emission vehicle targets—sends a signal that the United States will not be a major player in the electric vehicle market. It discourages investments in technologies like battery cell production, which will be essential to ensuring we capture the jobs and manufacturing benefits of global shifts in vehicle technology over the next decade.

Countries around the world are racing to capture the economic benefits of producing the next generation of cleaner and more efficient vehicle technology. Stepping away from standards that provide the certainty that manufacturers need to invest in and build leading technology in the United States puts the auto sector—and particularly domestic employment in the sector—in jeopardy, in the short, medium, and long term. It is essential that the United States maintains and increases its capability to produce these technologies domestically, and that fuel economy, GHG emissions reduction, manufacturing, and trade policies all support that trajectory.

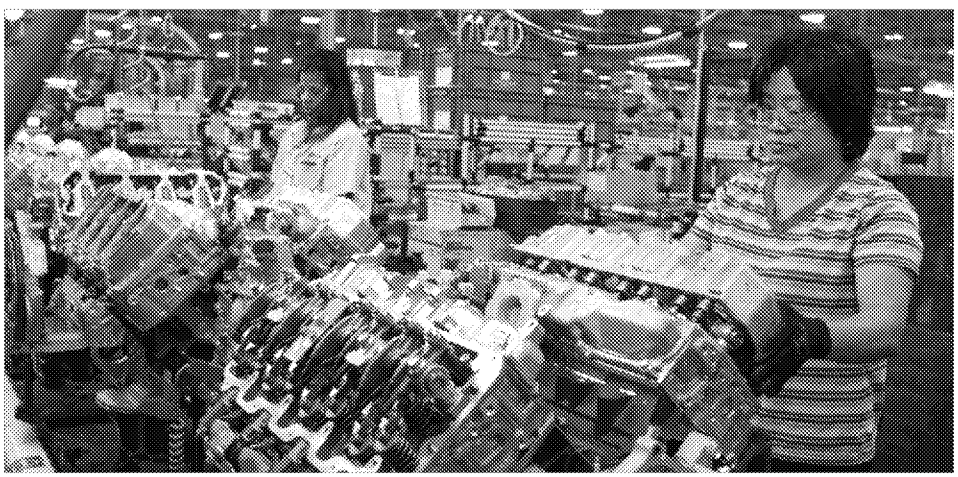

Photo Courtesy GM by Skip Peterson for DMAX

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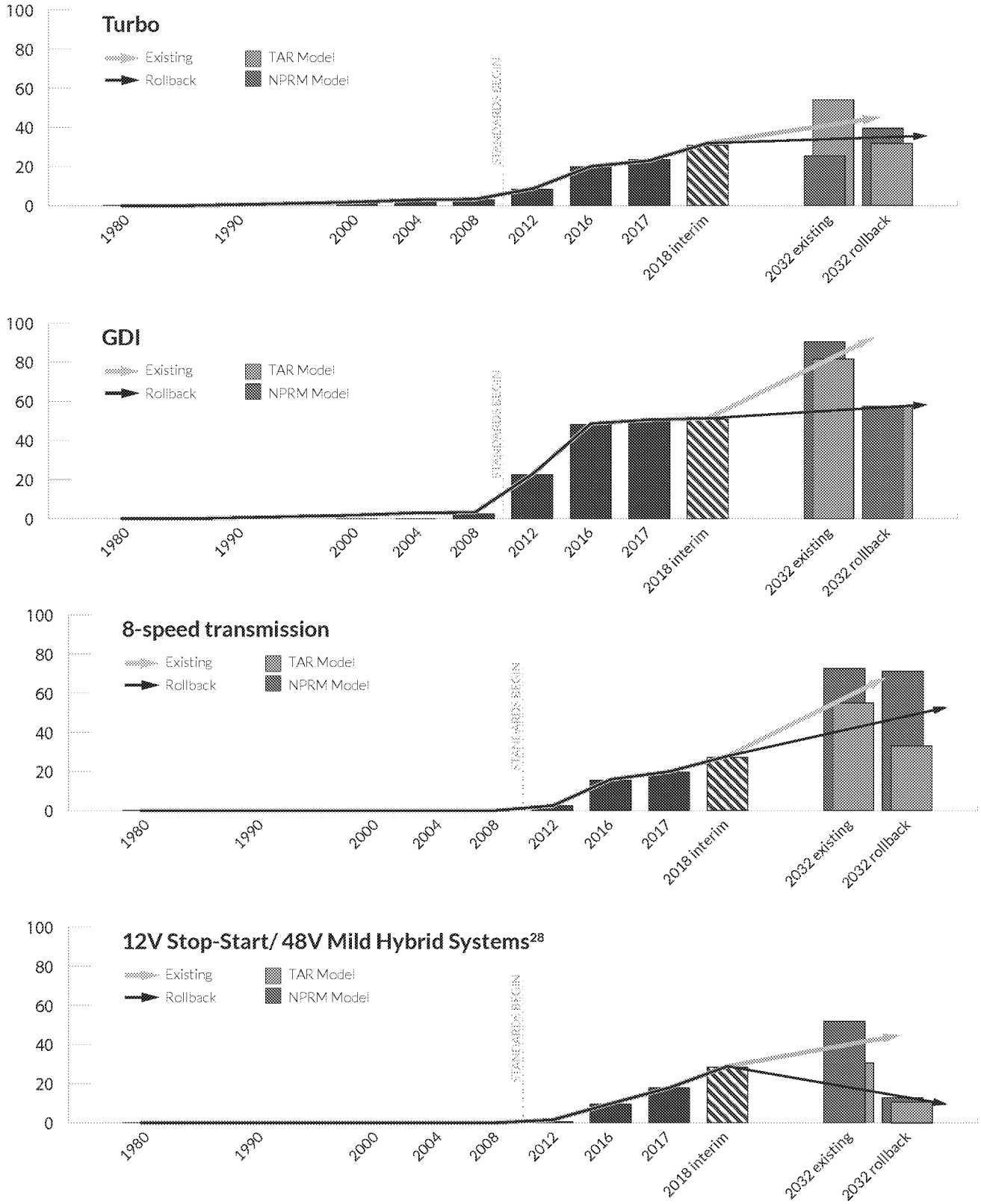
Figure 9 – Key Technologies Actual Deployment 1980-2017 and Projected Deployment Under Existing And Proposed Standards Through 2032



Source: Historic Data from 2018 EPA Automotive Trends Report.

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VI. CONCLUSION

Rolling back our nation's fuel economy and GHG standards discourages important investments in the next generation of key vehicle technologies in America. Our research modeled two different approaches to technology deployment to meet the standards, and combined those findings with data on the domestic manufacturing facilities that produce these technologies. We consistently found that flat-lining the standards in 2020 greatly slows adoption of advanced technologies made by hundreds of manufacturers and hundreds of thousands of workers across the country.

Our analysis clearly indicates that stepping away from strong standards could have a significant detrimental impact on hundreds of domestic automotive parts suppliers in the short term. Moreover, a roll back of the standards discourages important investments in the next generation of clean and advanced vehicle technologies.

The analysis shows that strong, long-term standards provide a critical framework to help ensure that advanced vehicles and technology are developed and built in the United States. Moreover, the future of the American automotive industry depends on our ongoing leadership, innovation, and competitiveness in a global marketplace. Stepping away from these standards discourages the rapid adoption of advanced technologies and puts at risk American manufacturing growth, competitiveness, and domestic jobs.

APPENDIX A: METHODOLOGY

Over the past year, both the agencies, and independent economic researchers have developed estimates of auto sector jobs impacts of weakening the standards.

Whether through an economic model such as IMPLAN/REMI—or by using industry rules of thumb connecting revenues and employment—these studies translate reduced technology spending into reduced labor hours and jobs industry wide.

In order to give a picture of the dynamics below the industry level, the BlueGreen Alliance intentionally chose a different approach. We calculated the changes in demand for specific technologies as predicted by agency models, and then estimated the impact of those market changes on the companies known to manufacture those technologies across the United States.

Our approach necessarily entails a number of simplifying assumptions. We do not purport to predict the actual impact of a rollback on any specific company or facility. Instead, our results should be viewed as a directional estimate of the impact on important segments of the automotive sector, and as a more detailed picture of the dynamics that lead to the industry wide impacts on jobs and manufacturing that others have also assessed.

It is worth noting that almost all studies—including our own—find broadly similar negative impacts on direct auto sector employment.

To identify the companies manufacturing the technologies considered in clean vehicle rulemaking we drew manufacturing facilities from the BlueGreen Alliance's "U.S. automotive manufacturing" dataset. This larger dataset includes manufacturing locations of automotive assemblers, suppliers, subcomponent, and materials suppliers and includes data on the technology manufactured, its place in the supply chain, plant location, and a variety of other data. It also includes estimates of employment by facility and estimates of "advanced technology employment"—or the share of employment related to technologies or systems that improve fuel economy. This dataset—and the employment data in particular is proprietary, but the companies, locations, and technologies can be explored online at: https://www.bgafoundation.org/programs/visualizing-the-clean-economy-autos/

To be included in the analysis for this report, companies had to manufacture at least in part for the light-duty vehicle sector and manufacture vehicles or technology in the categories considered by the agencies in the rulemaking.

To estimate the share of employment at a facility potentially at highest risk of being impacted by changes to the standards facilities' "advanced tech employment" (already only a portion of most facilities' employment) was further discounted by an estimate of the degree to which the company supplies the light-duty sector, and its exposure to changes in demand for a single type of product. This discounting is significant. It results in a total that is just under 20 percent of full employment today at those facilities.

To create our estimate of future jobs or growth foregone, we calculate the change in out-year (2032) fleetwide deployment of the technology or technologies manufactured by each facility relative to current deployment both under existing standards that continue to increase through 2025 versus those that stop increasing in 2020. We view percentage fleetwide deployment as a proxy for industry demand. We then multiply each facility's vulnerable employment by the relative change in demand as a result of rollback of the standards.

To calculate fleet-wide technology-by-technology deployment, we carried out two runs of the Volpe Model utilized by NHTSA to set the standards. In the results we call the "NPRM" case, our model and our deployment data are identical to the agency's analysis in the NPRM. In our "TAR" case we run the Volpe model utilizing assumptions that more closely replicate analysis done in the Technical Assessment Report used for the 2016 Midterm Evaluation of the standards.

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ENDNOTES

1 The White House Office of the Press Secretary, "Obama Administration Finalizes Historic 54.5 MPG Fuel Efficiency Standards," August 2012. Available Online: https://obamawhitehouse.archives.gov/the-press-office/2012/08/28/obama-administration-finalizes-historic-545-mpg-fuel-efficiency-standard.

2 Union of Concerned Scientists (UCS), *Fuel Economy and Emissions Standards for Cars and Trucks, Model Years 2017 to 2025*, June 2016. Available online: https://www.ucsusa.org/sites/default/files/attach/2016/06/Fuel-Economy-Standards-2017-2025-summary.pdf.

3 Natural Resources Defense Council (NRDC) and the BlueGreen Alliance, *Supplying Ingenuity II: U.S. Suppliers of Key Clean, Fuel-Efficient Vehicle Technologies*, June 2017. Available online: https://www.bluegreenalliance.org/wp-content/uploads/2017/05/Supplying-Ingenuity-vFINAL-low-res.pdf.

4 All employment data in this section is from the U.S. Bureau of Labor Statistics. Available online: https://www.bls.gov/iag/tgs/iagauto.htm. Analysis and calculations by BlueGreen Alliance. Accessed October 25, 2018.

5 Ibid.

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7 Center for American Progress (CAP), United Autoworkers (UAW), and NRDC, *Driving Growth: How Clean Cars and Climate Policy Can Create Jobs*, March 2010. Available online: https://www.nrdc.org/sites/default/files/drivinggrowth.pdf.

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11 NRDC and the BlueGreen Alliance, *Supplying Ingenuity II: U.S. Suppliers of Key Clean, Fuel-Efficient Vehicle Technologies*, June 2017. Available online: https://www.bluegreenalliance.org/wp-content/uploads/2017/05/Supplying-Ingenuity-vFINAL-low-res.pdf.

12 Energy Futures Initiative and National Association of State Energy Officials, *U.S. Energy and Employment Report*, May 2018. Available online: https://static1.squarespace.com/static/5a98cf80ec4eb7c5cd928c61/t/5afb0ce4575d1f3cdf9ebe36/1526402279839/2018+U.S.+Energy+and+Employment+Report.pdf.

13 U.S. Department of Energy, "U.S. Energy and Employment Report," January, 2017. Available online: https://www.energy.gov/sites/prod/files/2017/01/f34/2017%20US%20Energy%20and%20Jobs%20Report_0.pdf.

14 Statement of the MEMA before the U.S. Environmental Protection Agency (EPA) "RE: 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," September 6, 2017. Available online: https://www.mema.org/sites/default/files/resource/MEMA%20Testimony%20EPA%20MTE%20Sept%206%202017.pdf.

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18 Comments of the MEMA to NHTSA and EPA "RE: Notice of Proposed Rulemaking on the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 for Passenger Cars and Light Trucks," October 26, 2018. Available online: https://www.mema.org/sites/default/files/resource/MEMA%20CAFE%20and%20GHG%20Vehicle%20Comments%20FINAL%20with%20Appendices%20Oct%2026%202018.pdf.

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20 Under the coordinated "National Program" EPA has promulgated standards through 2025, while NHTSA has promulgated standards through 2020 and projected standards through 2025 consistent with the longer term trajectory previously agreed with EPA. NHTSA's projected standards are referred to as "augural" standards.

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22 Union of Concerned Scientists, Comments of David W. Cooke concerning the draft technical assessment report for the mid-term evaluation of model year 2022-2025 light-duty vehicle greenhouse gas emissions and fuel economy standards, Docket ID# EPA-HQ-OAR-2015-0827-4016, 2016.

23 Throughout this report, outputs labeled as "NPRM" refer to the outputs of the Volpe model released with the recent NPRM, run in compliance with the current EPA standards and the proposed CO2 standards. Outputs labeled "TAR" refer to a modified version of the Volpe model released with the agencies' joint draft TAR—the model incorporates compliance with state Zero-Emission Vehicle standards as well as minor modifications to technology assumptions which align the modeled cost outputs of this modified Volpe model to align with EPA's OMEGA runs also incorporated in the TAR (see Cooke 2016).

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24 As discussed in more detail in the transmission section below, shifts in the stringency of the standards results in shifts amongst transmission technologies often manufactured by the same companies, and thus in only modest impacts on employment (Figure 4). Our methodology does not allow us to reflect differences in the amount of content and labor hours in each type of transmission, which might negate or change the direction of these still modest jobs impacts.

25 Union of Concerned Scientists, Comments by David W. Cooke concerning the draft technical assessment report for the mid-term evaluation of model year 2022-2025 light-duty vehicle greenhouse gas emissions and fuel economy standards, Docket ID# EPA-HQ-OAR-2015-0827-4016, 2016.

26 National Research Council. Cost, Effectiveness, and Deployment of Fuel Economy Technologies for Light-Duty Vehicles, June 2015. Available online: https://doi.org/10.17226/21744.

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28 The EPA trends report does not yet track deployment of 48V systems. These systems have just begun being deployed in the U.S. fleet, and we have assumed negligible deployment in 2017 and 2018 model years.

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Message

From: Woods, Clint [woods.clint@epa.gov]
Sent: 9/17/2019 2:13:07 PM
To: Schiermeyer, Corry [schiermeyer.corry@epa.gov]; Abboud, Michael [abboud.michael@epa.gov]
CC: McFaul, Jessica [mcfaul.jessica@epa.gov]; Block, Molly [block.molly@epa.gov]; Harlow, David [harlow.david@epa.gov]; Schwab, Justin [Schwab.Justin@epa.gov]; Idsal, Anne [idsal.anne@epa.gov]; Leopold, Matt (OGC) [Leopold.Matt@epa.gov]; Woods, Andrea [Woods.Andrea@epa.gov]; Beach, Christopher [beach.christopher@epa.gov]; Dominguez, Alexander [dominguez.alexander@epa.gov]
Subject: RE: DRAFT joint press release from DOT/EPA
Attachments: dsh RLSO EDIT One National Program Rule Press Release (Sgb Draft 9.15.2019) (Clean) mb jm cw edits.docx

Small tweak in attached. Sorry if I missed version with updated quote

From: Schiermeyer, Corry <schiermeyer.corry@epa.gov>
Sent: Monday, September 16, 2019 2:27 PM
To: Abboud, Michael <abboud.michael@epa.gov>
Cc: McFaul, Jessica <mcfaul.jessica@epa.gov>; Block, Molly <block.molly@epa.gov>; Harlow, David <harlow.david@epa.gov>; Schwab, Justin <Schwab.Justin@epa.gov>; Idsal, Anne <idsal.anne@epa.gov>; Woods, Clint <woods.clint@epa.gov>; Leopold, Matt (OGC) <Leopold.Matt@epa.gov>; Woods, Andrea <Woods.Andrea@epa.gov>; Beach, Christopher <beach.christopher@epa.gov>
Subject: Re: DRAFT joint press release from DOT/EPA

Yes..

Sent from my iPhone

On Sep 16, 2019, at 2:24 PM, Abboud, Michael <abboud.michael@epa.gov> wrote:

> Are we just waiting on the quote?
>
> **From:** McFaul, Jessica <mcfaul.jessica@epa.gov>
> **Sent:** Monday, September 16, 2019 1:52 PM
> **To:** Schiermeyer, Corry <schiermeyer.corry@epa.gov>; Block, Molly <block.molly@epa.gov>; Harlow, David <harlow.david@epa.gov>; Schwab, Justin <Schwab.Justin@epa.gov>; Abboud, Michael <abboud.michael@epa.gov>; Idsal, Anne <idsal.anne@epa.gov>; Woods, Clint <woods.clint@epa.gov>; Leopold, Matt (OGC) <Leopold.Matt@epa.gov>
> **Cc:** Woods, Andrea <Woods.Andrea@epa.gov>; Beach, Christopher <beach.christopher@epa.gov>
> **Subject:** RE: DRAFT joint press release from DOT/EPA
>
> A few cleanup edits attached. Jess
>
> **From:** Schiermeyer, Corry <schiermeyer.corry@epa.gov>
> **Sent:** Monday, September 16, 2019 1:46 PM
> **To:** Block, Molly <block.molly@epa.gov>; Harlow, David <harlow.david@epa.gov>; Schwab, Justin <Schwab.Justin@epa.gov>; Abboud, Michael <abboud.michael@epa.gov>; Idsal, Anne <idsal.anne@epa.gov>; Woods, Clint <woods.clint@epa.gov>; Leopold, Matt (OGC) <Leopold.Matt@epa.gov>
> **Cc:** Woods, Andrea <Woods.Andrea@epa.gov>; Beach, Christopher <beach.christopher@epa.gov>; McFaul, Jessica <mcfaul.jessica@epa.gov>
> **Subject:** RE: DRAFT joint press release from DOT/EPA

Did anyone else have any edits? Chris has a draft quote we will insert and run by the Administrator.

From: Block, Molly <block.molly@epa.gov>
Sent: Monday, September 16, 2019 8:47 AM
To: Harlow, David <harlow.david@epa.gov>; Schwab, Justin <Schwab.Justin@epa.gov>; Abboud, Michael <abboud.michael@epa.gov>; Idsal, Anne <idsal.anne@epa.gov>; Woods, Clint <woods.clint@epa.gov>; Leopold, Matt (OGC) <Leopold.Matt@epa.gov>
Cc: Woods, Andrea <Woods.Andrea@epa.gov>; Beach, Christopher <beach.christopher@epa.gov>; McFaul, Jessica <mcfaul.jessica@epa.gov>; Schiermeyer, Corry <schiermeyer.corry@epa.gov>
Subject: RE: DRAFT joint press release from DOT/EPA

Moved the quotes up in the press release.

From: Harlow, David
Sent: Sunday, September 15, 2019 3:07 PM
To: Schwab, Justin <Schwab.Justin@epa.gov>; Abboud, Michael <abboud.michael@epa.gov>; Idsal, Anne <idsal.anne@epa.gov>; Woods, Clint <woods.clint@epa.gov>; Leopold, Matt (OGC) <Leopold.Matt@epa.gov>
Cc: Woods, Andrea <Woods.Andrea@epa.gov>; Beach, Christopher <beach.christopher@epa.gov>; Block, Molly <block.molly@epa.gov>; McFaul, Jessica <mcfaul.jessica@epa.gov>; Schiermeyer, Corry <schiermeyer.corry@epa.gov>
Subject: RE: DRAFT joint press release from DOT/EPA

A few additional suggestions, on top of Justin's edits, of which I "accepted all" in the attached RLSO, for the sake of distinguishing clarity. Take these of mine for what, if anything, you may find they're worth.

David S. Harlow
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From: Schwab, Justin <Schwab.Justin@epa.gov>
Sent: Sunday, September 15, 2019 1:14 PM
To: Abboud, Michael <abboud.michael@epa.gov>; Idsal, Anne <idsal.anne@epa.gov>; Woods, Clint <woods.clint@epa.gov>; Harlow, David <harlow.david@epa.gov>; Leopold, Matt (OGC) <Leopold.Matt@epa.gov>
Cc: Woods, Andrea <Woods.Andrea@epa.gov>; Beach, Christopher <beach.christopher@epa.gov>; Block, Molly <block.molly@epa.gov>; McFaul, Jessica <mcfaul.jessica@epa.gov>; Schiermeyer, Corry <schiermeyer.corry@epa.gov>
Subject: RE: DRAFT joint press release from DOT/EPA

Please find attached.

From: Abboud, Michael <abboud.michael@epa.gov>
Sent: Sunday, September 15, 2019 12:21 PM
To: Idsal, Anne <idsal.anne@epa.gov>; Woods, Clint <woods.clint@epa.gov>; Harlow, David <harlow.david@epa.gov>; Schwab, Justin <Schwab.Justin@epa.gov>; Leopold, Matt (OGC) <Leopold.Matt@epa.gov>
Cc: Woods, Andrea <Woods.Andrea@epa.gov>; Beach, Christopher <beach.christopher@epa.gov>; Block, Molly <block.molly@epa.gov>; McFaul, Jessica <mcfaul.jessica@epa.gov>; Schiermeyer, Corry <schiermeyer.corry@epa.gov>
Subject: FW: DRAFT joint press release from DOT/EPA

Can you OAR/OGC look and see if there are any edits/additions that need to be made?

Chris can you work on a quote for Wheeler.

Wheeler will want to see a draft of this tomorrow afternoon before the WH meeting on Tuesday morning.

From: Bradford, Stephen (OST) <stephen.bradford@dot.gov>
Sent: Sunday, September 15, 2019 12:10 PM
To: Abboud, Michael <abboud.michael@epa.gov>
Cc: Post, Andy (OST) <Andy.Post@dot.gov>
Subject: DRAFT joint press release from DOT/EPA

The attached is a deliberative and pre-decisional draft not for release—

Mike; we should move the quotes up and I'll have edits to S1's quote, but this is looking pretty close our end if you can get EPA sign off on the draft and provide a quote.

Cheers

Steve

Get Outlook for iOS

Message

From: Idsal, Anne [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=B1BECA8121FB47A08E82B6BF2247A79B-IDSAL, ANNE]
Sent: 8/6/2019 8:14:00 PM
To: Dunham, Sarah [Dunham.Sarah@epa.gov]
Subject: Fwd: Material for the 2pm Light-duty GHG SAFE rule meeting with AA Idsal attached
Attachments: Comment Categories 2022-20265 CAFE 190729 to EPA, OTAQ comments Aug 1.docx; ATT00001.htm; Summary of AA Wehrum's Direction on SAFE Flexibilities.pptx; ATT00002.htm; Agenda_LD GHG BiWeekly with OAR AA Idsal_08-06-2019, Final.docx; ATT00003.htm

FYI

Anne L. Idsal
Acting Assistant Administrator - Office of Air and Radiation
U.S. Environmental Protection Agency
Washington, DC

Begin forwarded message:

> **From:** "Charmley, William" <charmley.william@epa.gov>
> **Date:** August 6, 2019 at 3:16:12 PM EDT
> **To:** OAR Briefings <OAR_Briefings@epa.gov>
> **Cc:** OTAQ Materials <OTAQMaterials@epa.gov>, "Simon, Karl" <Simon.Karl@epa.gov>, "Olechiw, Michael" <olechiw.michael@epa.gov>, "Bolon, Kevin" <Bolon.Kevin@epa.gov>, "Lieske, Christopher" <lieske.christopher@epa.gov>, "Orlin, David" <Orlin.David@epa.gov>, "Buchsbaum, Seth" <buchsbaum.seth@epa.gov>, "Kataoka, Mark" <Kataoka.Mark@epa.gov>
> **Subject: Material for the 2pm Light-duty GHG SAFE rule meeting with AA Idsal attached**
>
> Attached is the material for Wednesday's Light-duty SAFE Final Rule meeting with AA Idsal.
>
> Attached is the Agenda, and two supporting documents.
> Thanks
> Bill

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

September 24, 2019

THE ADMINISTRATOR

Ms. Mary D. Nichols
Chair
California Air Resources Board
1001 I Street, P.O. Box 2815
Sacramento, California 95812

Dear Ms. Nichols:

The U.S. Environmental Protection Agency and California Air Resources Board play a critical role in protecting public health through implementing National Ambient Air Quality Standards under the federal *Clean Air Act*. In particular, the state of California facilitates the submittal of State Implementation Plans from its 35 local air districts with *Clean Air Act* responsibilities.

A SIP is a collection of regulations and documents used by a state, territory or local air district to reduce air pollution in areas that do not meet NAAQS. Failure to carry out this SIP responsibility correctly, including submitting timely and approvable plans to assure attainment of the NAAQS, can put at risk the health and livelihood of millions of Americans. As part of our fundamental *Clean Air Act* responsibilities, I have recommitted the EPA to act quickly to approve or disapprove SIPs and to dramatically reduce the backlog of SIPs nationally.

Since the 1970s, California has failed to carry out its most basic tasks under the Clean Air Act. California has the worst air quality in the United States, with 82 nonattainment areas and 34 million people living in areas that do not meet National Ambient Air Quality Standards – more than twice as many people as any other state in the country. As evidenced by the EPA's recent work on interstate air pollution issues as well as analysis accompanying its rulemakings, California's chronic air quality problems are not the result of cross-state air pollution or this Administration's regulatory reform efforts.

In addition, the state of California represents a disproportionate share of the national list of backlogged SIPs, including roughly one-third of the EPA's overall SIP backlog. California's total portion of the SIP backlog is more than 130 SIPs, with many dating back decades. Most of these SIPs are inactive and appear to have fundamental issues related to approvability, state-requested holds, missing information or resources. For example, these SIPs include key ozone NAAQS attainment plans for the following areas:

- Coachella Valley for 1997 and 2008 ozone NAAQS

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- Sacramento Metro for 2008 ozone NAAQS
- Western Nevada County for 2008 ozone NAAQS
- Ventura County for 1997 and 2008 ozone NAAQS

We recommend that California withdraw its backlogged and unapprovable SIPs and work with the EPA to develop complete, approvable SIPs. In the event California fails to withdraw them, the EPA will begin the disapproval process consistent with applicable statutory and regulatory requirements.

As you know, if the EPA disapproves a SIP, that triggers statutory clocks for:

- Highway funding sanctions, which could result in a prohibition on federal transportation projects and grants in certain parts of California;
- New Source Review permitting sanctions; and
- A deadline for the issuance of a Federal Implementation Plan.

We certainly want to avoid these statutory triggers, but our foremost concern must be ensuring clean air for all Americans. That is our goal.

To ensure that we are making progress on improving air quality in California, we request a response from CARB by October 10 indicating whether it intends to withdraw these SIPs.

Sincerely,

Andrew R. Wheeler

U.S. DEPARTMENT OF TRANSPORTATION
U.S. ENVIRONMENTAL PROTECTION AGENCY

One National Program Rule on Federal Preemption of State Fuel Economy Standards

ACTION

- On September 19, 2019, the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) and the U.S. Environmental Protection Agency (EPA) issued a final action entitled the "One National Program Rule" to enable the federal government to provide nationwide uniform fuel economy and greenhouse gas emission standards for automobile and light duty trucks.
    - This action finalizes critical parts of the Safer, Affordable, Fuel-Efficient (SAFE) Vehicles Rule that was first proposed in August 2018.
- This action makes clear that federal law preempts state and local tailpipe greenhouse gas (GHG) emissions standards as well as zero emission vehicle (ZEV) mandates.
- In this action NHTSA is affirming that its statutory authority to set nationally applicable fuel economy standards under the express preemption provisions of the Energy Policy and Conservation Act dictates that such state and local programs are preempted.
- EPA is withdrawing the Clean Air Act preemption waiver it granted to the State of California in January 2013 as it relates to California's GHG and ZEV programs.
    - California's ability to enforce its Low Emission Vehicle program and other clean air standards to address harmful ozone-forming vehicle emissions is not affected by this action.
- The agencies continue work to finalize the remaining portions of the SAFE Vehicles Rule, to address proposed revisions to the federal fuel economy and GHG vehicle emissions standards.

Background

- In August 2018, the Environmental Protection Agency (EPA) and the Department of Transportation's National Highway Transportation and Safety Administration (NHTSA) jointly proposed the rulemaking entitled "The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks."

- In this proposal, 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.

- This included a "preferred alternative" to lock-in the model year (MY) 2020 greenhouse gas (GHG)/Corporate Average Fuel Economy (CAFE) standards for model years 2021-2026.
- The proposal also took comment on a wide range of options, including an option to retain the existing ramp-rate (i.e., the stringency of the standards year-over-year).

- In SAFE, NHTSA proposed to determine that the Energy Policy and Conservation Act's (EPCA) preemption of state regulation related to fuel economy has the effect of preempting state programs to regulate tailpipe GHG emissions, as well as state zero-emission vehicle programs (ZEV).

  - 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.

- Also, in SAFE, EPA proposed to determine that it has authority to reconsider past grants of waivers from Clean Air Act (CAA) preemption, and to withdraw the January 2013 EPA waiver of CAA preemption previously provided for California's Advanced Clean Car (ACC) program with respect to that program's GHG and ZEV elements.

Final Rule Summary

- Today, the agencies finalize joint action to bring clarity to the proper and improper scope and use of the CAA preemption waiver:
  - (1) NHTSA finalizes regulatory text related to preemption; and
  - (2) EPA announces its decision to withdraw the waiver;

- The agencies anticipate issuing a final rule on standards proposed in the NPRM in the near future.

Preemption Under the Energy Policy and Conservation Act

In today's action, NHTSA is finalizing its proposal concerning preemption of State and local laws and regulations related to fuel economy standards.

- NHTSA affirms in today's 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.

- NHTSA is also finalizing its conclusion that EPCA does not preempt all potential State or local regulation of greenhouse gas emissions from vehicles.

- NHTSA and EPA are confirming their determination, in this final rule, that a Clean Air Act waiver does not waive EPCA preemption
    - Section 209 of the Clean Air Act explicitly states that a waiver of preemption pursuant to that provision of the Clean Air Act only relieves "application of this section."
    - NHTSA also confirms its view that a Clean Air Act waiver does not "federalize" State or local requirements preempted by EPCA.

- 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.

- 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

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 action, EPA finalizes its proposed determination that it has the authority to withdraw a waiver in appropriate circumstances, and is withdrawing its January 2013 waiver for California's ACC program with respect to that program's GHG and ZEV elements.

The legal basis for withdrawing the California Waiver is that under CAA section 209(b)(1)(B), which covers compelling and extraordinary conditions. EPA finds 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
- The California waiver authority exists because California has uniquely difficult problems with ozone-forming pollutants.
- The California waiver authority does not exist to allow California to address national and global issues such as climate change.

Effective Date

Today's action will become effective 60 days after publication in the Federal Register.

XAVIER BECERRA
Attorney General

State of California
DEPARTMENT OF JUSTICE

1515 CLAY STREET, 20TH FLOOR
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OAKLAND, CA 94612-0550

Public: (510) 879-1300
Telephone: (510) 879-0299
Facsimile: (510) 622-2270
E-Mail: Elaine.Meckenstock@doj.ca.gov

October 9, 2019

Via Overnight Mail and Email

Andrew Wheeler, Administrator
Office of the Administrator
U.S. Environmental Protection Agency
WJC South Building
1200 Pennsylvania Ave., NW
Washington, DC 20460

Christopher Lieske
Office of Transportation and Air Quality
U.S. Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105

RE: Petition for Clarification/Reconsideration of the Safer, Affordable Fuel-Efficient (SAFE) Vehicles Rule, Part One: One National Program, 84 Fed. Reg. 51,310 (Sept. 27, 2019)

Dear Administrator Wheeler and Mr. Lieske:

Please find attached a Petition for Clarification/Reconsideration submitted on behalf of the California Air Resources Board and the California Attorney General Xavier Becerra with respect to the above reference action(s), Docket ID EPA-HQ-OAR-2018-0283.

Sincerely,

M. Elaine Meckenstock

M. ELAINE MECKENSTOCK
Deputy Attorney General

(Attachment)

BEFORE THE HONORABLE ANDREW WHEELER, ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN RE PETITION FOR CLARIFICATION/RECONSIDERATION OF THE SAFER AFFORDABLE FUEL-EFFICIENT (SAFE) VEHICLES RULE PART ONE: ONE NATIONAL PROGRAM, 84 Fed. Reg. 51,310 (Sept. 27, 2019)

SUBMITTED BY THE CALIFORNIA AIR RESOURCES BOARD AND CALIFORNIA ATTORNEY GENERAL XAVIER BECERRA

On August 24, 2018, the U.S. Environmental Protection Agency (EPA) and the National Highway Traffic Safety Administration (NHTSA) published a joint proposal in the Federal Register. "The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks," 83 Fed. Reg. 42,986 (Aug. 24, 2018) (hereafter, Proposal). On September 19, 2019, EPA and NHTSA issued a document finalizing some of the actions they had proposed, including EPA's withdrawal of parts of a preemption waiver it issued to California in 2013 (hereafter, Final Actions). On September 27, 2019, the Final Actions were published in the Federal Register. "The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program," 84 Fed. Reg. 51,310 (Sept. 27, 2019).

We are deeply troubled by the agencies' Final Actions, which undermine important public health and environmental protection programs while creating unnecessary and harmful uncertainty for States, as well as for auto manufacturers and related industries. We believe the Final Actions are not only harmful, but also unlawful: neither agency has authority for the actions taken, and, indeed, the agencies' actions fly in the face of the relevant statutes and the cooperative federalism model that Congress established decades ago and that it has strengthened and reaffirmed many times since. The multiple legal infirmities with the Final Actions will be decided by the courts.

But there is an issue causing significant and unnecessary uncertainty now that EPA can and should resolve quickly, without the need for litigation.[1] Specifically, CARB and California Attorney General Xavier Becerra petition EPA for clarification and reconsideration of the scope

[1] This petition does not reflect all issues with the Final Actions on which California, CARB, or the California Attorney General may seek reconsideration or other administrative remedies. Rather, we are submitting this single-issue petition now in an attempt to quickly reduce or eliminate confusion concerning the scope of EPA's action(s). In addition, we note that, while the exhaustion requirements of Section 307(d)(7) of the Clean Air Act do not apply here, Section 307(b) indicates that EPA must consider petitions for reconsideration such as this one.

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of EPA's action(s) purporting to withdraw portions of the waiver EPA granted to California in 2013. As discussed below, contradictory statements in the Final Actions have created confusion over whether EPA withdrew California's waiver for its GHG and Zero Emission Vehicle (ZEV) standards only for model years 2021 through 2025, as EPA had proposed, or whether EPA expanded the withdrawal to cover earlier model years as well.

CARB has received inquiries about this issue from regulated parties and other stakeholders, and we respectfully ask that EPA clarify and reconsider the statements that are creating this confusion. CARB and the public are entitled to know, promptly and unambiguously, the temporal scope of EPA's waiver withdrawal. Indeed, "elementary fairness compels clarity in the statements … setting forth actions with which the agency expects the public to comply." *General Electric v. EPA*, 53 F.3d 1324, 1329 (D.C. Cir. 1995) (internal quotation omitted).

I. EPA'S STATEMENTS IN THE FINAL ACTIONS HAVE CREATED CONFUSION ABOUT THE MODEL YEARS COVERED BY THE PURPORTED WITHDRAWAL OF CALIFORNIA'S WAIVER FOR ITS GHG AND ZEV STANDARDS

In the Final Actions, EPA makes statements that are creating confusion, and, indeed, appear contradictory, concerning the temporal scope of its action(s)—specifically, which model years are covered by the purported withdrawal of California's waiver for its GHG and ZEV standards. In some places, EPA's statements indicate that it has limited its action(s) to the model years for which it proposed to withdraw and for which it now claims to have authority to withdraw—namely model years 2021 through 2025. In other places, however, EPA's statements suggest action(s) with a broader scope—one that would include earlier model years. As discussed below, these statements are difficult to reconcile and are creating untenable uncertainty that EPA must resolve.

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A. EPA Proposed to Withdraw California's Waiver for GHG and ZEV Standards Only for Model Years 2021 through 2025

In the Proposal, EPA expressly "propos[ed] to withdraw the January 9, 2013 waiver of preemption" for California's GHG and ZEV standards "that are *applicable to new model year (MY) 2021 through 2025*." 83 Fed. Reg. at 43,240 (emphasis added); *see also* 83 Fed. Reg. at 43,243 ("EPA is proposing to withdraw the grant of a waiver of preemption for California to enforce the GHG and ZEV standards … *for MY 2021–2025*.") (emphasis added); 83 Fed. Reg. at 43,245 ("EPA is proposing to withdraw the grant of waiver of preemption for CARB's GHG and ZEV standards *for 2021 MY through 2025 MY*…") (emphasis added); 83 Fed. Reg. 43,250 ("EPA is proposing to withdraw the waiver of preemption for the GHG and ZEV requirements *for MYs 2021 through 2025*.") (emphasis added). The scope of EPA's proposed waiver withdrawal was the same (model years 2021 through 2025) in the part of the Proposal that was based on NHTSA's proposed action concerning preemption under the Energy Policy Conservation Act (EPCA). 83 Fed. Reg. at 43,240 (articulating this scope of proposed action for all of the "multiple grounds" on which EPA proposed to withdraw); *id.* at 43,240 n.522 ("EPA proposes to withdraw the waiver for these model years because these are the model years at issue in NHTSA's proposal.").[2]

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[2] EPA solicited comment on "whether one or more grounds supporting the proposed withdrawal of this waiver would also support withdrawing other waivers that it has previously granted." 83 Fed. Reg. at 43,240 n.552. This reference to "other waivers" can only reasonably be read as meaning waivers other than the 2013 waiver for California's Advanced Clean Cars program, which includes the GHG and ZEV standards. This is plain from the distinction between "this waiver"—that is, the 2013 waiver—and "other waivers," and from the distinction in the preceding footnote between the waiver "granted with respect to California's GHG and ZEV program." and "other waivers." 83 Fed. Reg. at 43,240 n.551. EPA also makes clear, elsewhere, that it granted a *single* waiver in January 2013 for California's Advanced Clean Cars program and that "aspects of" that single waiver involve California's GHG and ZEV standards. 84 Fed. Reg. at 51,323. EPA's solicitation of comments on potential withdrawals of "other waivers" was not, therefore, a request for comments on withdrawing *other model years of the 2013 waiver*. Moreover, EPA has not identified, and cannot identify, any comment asking EPA to withdraw the GHG and ZEV portions of California's 2013 waiver for model years before 2021.

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In the Proposal, EPA also indicated that it understood that a waiver withdrawal involving model years before 2021 would be problematic. EPA found that "a late modification [to standards] carries attendant hardships for technologically advanced manufacturers who might have made major investment commitments." 83 Fed. Reg. at 43,252. Connecting this concern to the scope of the proposed withdrawal, EPA then stated its conclusion 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." *Id.*

There is, thus, no question as to the scope of withdrawal action proposed by EPA. That scope was expressly, unequivocally, and repeatedly limited to model years 2021 through 2025.

B. In the Final Actions, EPA Confirms that the Proposed Withdrawal Was Limited to Model Years 2021 through 2025 and Indicates EPA Has Finalized What It Proposed

In the Final Actions, EPA expressly states that it has finalized what it proposed and confirms the temporal scope of the proposal as limited to model years 2021 through 2025, thereby indicating that the waiver withdrawal covers only those model years.

Specifically, EPA asserts that it has finalized "EPA's proposed determination." 84 Fed. Reg. at 51,331 (describing EPA as "finaliz[ing] its proposed determination"). And it makes this assertion as to all purported grounds for EPA's action(s), including its reliance on NHTSA's action as a basis for waiver withdrawal. 84 Fed. Reg. at 51,328.

EPA also correctly restates the scope of the action it proposed as involving only model years 2021 through 2025. 84 Fed. Reg. at 51,329 ("On August 24, 2018, EPA proposed to withdraw this waiver of preemption with regard to the GHG and ZEV standards of its Advanced

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Clean Car (ACC) program *for MY 2021–2025*.") (emphasis added); *see also id.* at 84 Fed. Reg. at 51,337 (acknowledging "proposed withdrawal of the waiver [was for] *for MY 2021–2025*") (emphasis added).

EPA's statements that it has finalized what it proposed lead naturally to the conclusion that EPA has not withdrawn California's waiver for GHG and ZEV standards for model years other than 2021 through 2025.

C. In the Final Actions, EPA Only Asserts Authority to Withdraw for Model Years 2021 through 2025

EPA's discussion of its purported authority to withdraw California's waiver is likewise limited to model years 2021 through 2025. In the Final Actions, EPA concludes the discussion of its withdrawal authority by stating that "it has authority under [Clean Air Act] section 209 to reconsider its prior grant of the [Advanced Clean Cars] waiver and to withdraw the waiver *for MY 2021–2025* GHG and ZEV standards, consistent with the SAFE proposal." 84 Fed. Reg. at 51,377 (emphasis added). There is no such conclusion concerning EPA's authority to withdraw California's waiver for earlier model years. Nor is there any indication, in the Final Actions, that EPA has reconsidered, let alone departed from, its conclusion in the Proposal that a withdrawal for earlier model years could would cause hardships to manufacturers and their investment commitments.

EPA does contend that it generally has authority to withdraw a previously granted waiver "in appropriate circumstances," 84 Fed. Reg at 51,331, but it never asserted in the Proposal and never asserts in the Final Actions that model years earlier than 2021 present such circumstances here. *See also* 84 Fed. Reg. at 51,332 (similarly asserting authority to withdraw "under appropriate circumstances"). Indeed, much of EPA's discussion of potentially "appropriate"

circumstances involves hypothetical scenarios in which "predictions" about future model years, made at the time of the waiver request, "may have been inaccurate." 84 Fed. Reg. at 51,332; *see also id.* (asserting authority to reconsider "where leadtime concerns arise after the grant of an initial waiver"). Hypothetical scenarios concerning *future* requirements, and related lead time concerns, do not speak to authority to withdraw a waiver for *prior, current, or even imminent* model years. This discussion of "appropriate" circumstances, thus, does not expand EPA's clear conclusion, quoted above, that its authority to withdraw here is limited to model years 2021 through 2025.

EPA's discussion and conclusion about the scope of its authority, like its assertion that it finalized the action it proposed, indicate that EPA has withdrawn California's waiver for its GHG and ZEV standards only for model years 2021 through 2025.

D. Yet, in the Final Actions, EPA Also Makes Statements that at Least Arguably Suggest a Withdrawal for Earlier Model Years

However, other EPA statements in the Final Actions create confusion by suggesting a broader scope to EPA's waiver withdrawal. For example, while EPA states that it has "finalize[d] EPA's proposed determination," it also states that its "January 2013 grant of a waiver of CAA preemption for [the GHG and ZEV standards] was invalid, null, and void" and "is hereby withdrawn on that basis, effective on the effective date of this joint action." 84 Fed. Reg. at 51,328. These statements are ambiguous and confusing. EPA simultaneously asserts that it is finalizing its "proposed determination," the scope of which was plainly limited to model years 2021 through 2025 (as discussed above), *and* uses language suggesting EPA is withdrawing California's waiver for its GHG and ZEV standards for all model years at issue in the 2013 waiver grant (including those before 2021).

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Exacerbating the ambiguity, EPA states that its "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." 84 Fed. Reg. at 51,338. EPA then goes on to say that "[t]his 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)." *Id.* It is unclear from these statements whether EPA intends its purported separation of these two "findings" to have implications for the scope of its waiver withdrawal, in part because EPA only references withdrawal in the second sentence. But this text at least arguably suggests that EPA is withdrawing California's waiver for model years prior to 2021, pursuant to its reliance on NHTSA's action.

EPA sows further confusion by stating, on the one hand, that "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," and, on the other hand, that "[t]his 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.*" 84 Fed. Reg. at 51,350 (emphasis added). Again, it is unclear what significance, if any, EPA intends to impart by its use of the word "withdrawn" with respect to model years 2021 through 2025 and its failure to use that word with respect to its ambiguously described "determination" concerning the "valid[ity]" of the waiver.

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The challenges in understanding these statements are magnified when they are read in the context of the entire document in which EPA claims to be taking only the action it proposed—an action that included only model years 2021 through 2025 *even in the context of EPA's consideration of NHTSA's action.* This confusion is only increased by EPA's discussion of its authority to withdraw, which, as discussed above, does not purport to provide grounds for any withdrawal for model years prior to 2021. In the end, then, the Final Actions contain a collection of statements concerning the model years covered by EPA's action(s) that are impossible to reconcile.

II. CARB AND THE CALIFORNIA ATTORNEY GENERAL REQUEST THAT EPA IMMEDIATELY CLARIFY AND RECONSIDER ITS CONFUSING STATEMENTS

The uncertainty created by EPA's statements concerning the model years affected by EPA's action(s) is untenable for California, the regulated community, and other stakeholders, including other States that have adopted California's standards. Regulated parties and other stakeholders have been seeking guidance from CARB as to these questions, but the State's ability to provide such guidance is limited because the statements that are causing the confusion are EPA's. Accordingly, we seek clarification and reconsideration of EPA's perplexing collection of statements regarding the model years covered by the withdrawal of California's waiver for its GHG and ZEV standards. EPA should explain the intended meaning of these statements, revising them as necessary, and clarify exactly which model years are implicated in its waiver withdrawal action(s), quickly, officially, and publicly.[3] To be clear, we are seeking

[3] CARB/California notes that EPA has, in the past, sought to clarify confusing, ambiguous, or erroneous language in Federal Register notices via later, additional Federal Register notices. *See, e.g.,* 76 Fed. Reg. 79,574 (Dec. 22, 2011) (seeking to "revise minor misstatements" and "clarify" prior Federal Register notice); 73 Fed. Reg. 6,962 (Feb. 6, 2008) (clarifying scope of prior order published in the Federal Register); 70 Fed. Reg. 13,195 (March 18, 2005) (clarifying solicitation previously published in the Federal Register); 54 Fed. Reg. 13,740 (Apr. 5, 1989) (clarifying and providing more detail about prior Federal Register notice); 43 Fed. Reg. 53,817 (Nov. 17, 1978) (clarifying EPA's procedures in response to questions).

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clarification from EPA as to the scope of its *waiver withdrawal action(s)*, not as to any position EPA holds concerning the lawfulness of California's GHG and ZEV standards (e.g., whether they are preempted by EPCA).

To the extent that EPA's response to this petition would result in final action(s) beyond the scope of what EPA proposed, or would contain analyses or justifications not included in the Proposal (such as purported justifications for broader withdrawal authority), then EPA must withdraw at least the portion of the Final Actions that extend beyond the Proposal, issue a revised proposal, and accept and consider public comment before taking any final action.

Dated: October 9, 2019

Respectfully submitted,
FOR THE STATE OF CALIFORNIA
XAVIER BECERRA
Attorney General
ROBERT W. BYRNE
SALLY MAGNANI
Senior Assistant Attorneys General
GARY E. TAVETIAN
DAVID A. ZONANA
Supervising Deputy Attorneys General

By: */s/ M. Elaine Meckenstock*
M. ELAINE MECKENSTOCK
Deputy Attorney General

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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing Petition for Clarification/Reconsideration was served on October 9, 2019 by overnight courier and email on the following:

Andrew Wheeler, Administrator
Office of the Administrator (Room 3000)
U.S. Environmental Protection Agency
WJC South Building
1200 Pennsylvania Ave., NW
Washington, DC 20460
Wheeler.Andrew@epa.gov

Christopher Lieske
Office of Transportation and Air Quality
Assessment and Standards Division
Environmental Protection Agency
2000 Traverwood Drive
Ann Arbor, MI 48105
lieske.christopher@epa.gov

Associate General Counsel for the Air and Radiation Law Office
Office of General Counsel (Mail Code 2344A)
U.S. Environmental Protection Agency
WJC South Building
1200 Pennsylvania Ave., NW
Washington, DC 20460
A-and-R-Docket@epamail.epa.gov

/s/ Ida Martinac
Ida Martinac

Message

From: woods.clint@epa.gov [woods.clint@epa.gov]
Sent: 9/4/2019 6:28:04 PM
To: Dominguez, Alexander [dominguez.alexander@epa.gov]; Schwab, Justin [Schwab.Justin@epa.gov]
Subject: Fwd: CA Air Quality Background
Attachments: INTERNAL DRAFT DELIBERATIVE CA BACKGROUND.docx; ATT00001.htm

Begin forwarded message:

From: "Woods, Clint" <woods.clint@epa.gov>
Date: September 4, 2019 at 12:14:23 PM EDT
To: "Jacks, Susan" <Jacks.Susan@epa.gov>
Subject: FW: CA Air Quality Background

Would it be possible to print 8 color copies of this attachment?

From: Woods, Clint
Sent: Tuesday, August 6, 2019 10:53 AM
To: Benevento, Douglas <benevento.douglas@epa.gov>
Cc: Idsal, Anne <idsal.anne@epa.gov>; David Harlow (harlow.david@epa.gov) <harlow.david@epa.gov>
Subject: CA Air Quality Background

DRAFT INTERNAL DELIBERATIVE – NOT FOR RELEASE

Doug,

Attached is OAR's California backgrounder. David Harlow may be sending along a few tweaks but wanted to get you a copy in the meantime.

Thanks!

Clint Woods
Deputy Assistant Administrator
Office of Air and Radiation, U.S. EPA
202.564.6562

Message

To: Harlow, David [harlow.david@epa.gov]; Leopold, Matt (OGC) [Leopold.Matt@epa.gov]
CC: Schwab, Justin [schwab.justin@epa.gov]; Alexander Dominguez (dominguez.alexander@epa.gov) [dominguez.alexander@epa.gov]
Subject: RE: "Science" article on climate effects

10 commenters cited this Science article (see bottom of this email), primarily by NGOs opposed to proposa;

Relevant comments:

FCA, pg. 89 (https://www.regulations.gov/document?D=EPA-HQ-OAR-2018-0283-4406): "FCA agrees with the EPA's conclusion that any effects of GHG emissions are felt globally and are not unique to California. In certain circumstances, local air problems appropriately justify state-specific standards. For example, FCA complies with standards to address local air quality issues by selling vehicles that meet California's stringent LEV III tailpipe emission standards to control smog. However, that is not the case here. Therefore, it would be reasonable for EPA to conclude that California does not face any extraordinary conditions that would set it apart from the rest of the country and warrant different GHG emissions standards."

GWU Regulatory Studies Center, pg. 19 (https://www.regulations.gov/document?D=EPA-HQ-OAR-2018-0283-4028): "Even if California eliminated all its vehicle emissions, it would reduce global emissions by less than half of one percent. So, if, for example, continued GHG emissions were to result in an increase in global mean temperatures of 3°C by 2100, the elimination of all vehicle emissions from California would reduce this increase by only 0.01°C. It is simply not plausible that such an effect—which is likely far greater than the effect of California's tailpipe GHG emission restrictions—would address any "compelling and extraordinary conditions" pertaining to California."

AFPM (https://www.regulations.gov/document?D=EPA-HQ-OAR-2018-0283-5698):
Pg. 34: "For purposes of a preemption waiver determination, EPA has found "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."137 The "question" for any preemption waiver decision is "whether these fundamental conditions continue to exist."138"
Pg. 36: "No impact of a changing climate would be unique to California in any way. It is well established that many states claim that they are, or will be, facing the same impacts from global GHG emissions as California.147 In granting the ZEV mandate waiver, EPA did not identify any record evidence that California would experience harms from global GHG emissions that would be different from any other coastal state.148"

Comment submitted by Vera Pardee, Center for Biological Diversity et al.

- Attachment Contents : ...Lancet Planet Health e360 (2017); Solomon Hsiang et al., Estimating Economic Damage from Climate Change in the

United States, 356 Science 1362 (2017); Raquel A...

- Public Submission
- Posted:

  10/30/2018

- ID:

  EPA-HQ-OAR-2018-0283-4134

- Agency:

  EPA

- RIN:

  2060-AU09

- Docket ID:

  EPA-HQ-OAR-2018-0283

- Organization:
- Submitter Name:

Comment submitted by Vera Pardee, Center for Biological Diversity et al.

- Attachment Contents : ...docs/20180827-StatewideSummary.pdf; Science, Solomon Hsiang, et. al., Estimating Economic Damage from Climate Change in the United States (June 30, 2017), http://science.sciencemag...
- Public Submission
- Posted:

11/01/2018

- ID:

  EPA-HQ-OAR-2018-0283-5070

- Agency:

  EPA

- RIN:

  2060-AU09

- Docket ID:

  EPA-HQ-OAR-2018-0283

- Organization:
- Submitter Name:

Comment submitted by Erin Murphy, Environmental Defense Fund

- Attachment Contents : ...1073/pnas.1504124112. 39 Hsiang, S. et al., 2017: Estimating economic damage from climate change in the United States. Science, 356(6345), 40 1362 LP...
- Public Submission
- Posted:

  11/01/2018

- ID:

  EPA-HQ-OAR-2018-0283-5048

- Agency:

EPA

- RIN:

  2060-AU09

- Docket ID:

  EPA-HQ-OAR-2018-0283

- Organization:
- Submitter Name:

Comment submitted by Shelby Krantz, Environmental Defense Fund (EDF)

- Attachment Contents : ...Rising, J., Delgado, M., Mohan, S., … Houser, T. (2017). Estimating economic damage from climate change in the United States. Science, 356(6345), 1362–1369. https...
- Public Submission
- Posted:

  11/01/2018

- ID:

  EPA-HQ-OAR-2018-0283-5454

- Agency:

  EPA

- RIN:

  2060-AU09

- Docket ID:

  EPA-HQ-OAR-2018-0283

- Organization:
- Submitter Name:

Comment submitted by Erin Murphy, Environmental Defense Fund (EDF)

- Attachment Contents : ...in Science in June 2017: Solomon Hsiang et al "Estimating Economic Damage from Climate Change in the United States," Science, vol. 356 (2017). 22 Environmental...
- Public Submission
- Posted:

  11/14/2018

- ID:

  EPA-HQ-OAR-2018-0283-6585

- Agency:

  EPA

- RIN:

  2060-AU09

- Docket ID:

  EPA-HQ-OAR-2018-0283

- Organization:
- Submitter Name:

Comment submitted by Xavier Becerra, Attorney General, State of California et al.

- See Attached
- Public Submission
- Posted:

  02/22/2019

- ID:

  EPA-HQ-OAR-2018-0283-7447

- Agency:

  EPA

- RIN:

  2060-AU09

- Docket ID:

  EPA-HQ-OAR-2018-0283

- Organization:
- Submitter Name:

Comment submitted by Erin Murphy, Environmental Defense Fund (EDF)

- Attachment Title : Estimating Economic Damage from Climate Change
- Public Submission
- Posted:

  11/14/2018

- ID:

  EPA-HQ-OAR-2018-0283-6583

- Agency:

  EPA

- RIN:

  2060-AU09

- Docket ID:

  EPA-HQ-OAR-2018-0283

- Organization:
- Submitter Name:

Comment submitted by Lou Finazzo, Sierra Club on behalf of Center for Biological Diversity et al.

- Attachment Title : Hsiang 2017, Estimating Economic Damage from Climate Change in the US
- Public Submission
- Posted:

  11/09/2018

- ID:

  EPA-HQ-OAR-2018-0283-6177

- Agency:

  EPA

- RIN:

  2060-AU09

- Docket ID:

  EPA-HQ-OAR-2018-0283

- Organization:
- Submitter Name:

Comment submitted by John Hannon, Class of 2019, et al., Environmental Law Clinic at the University of California, Berkeley

- Attachment Title : Estimating Economic Damage from Climate Change in the United States
- Public Submission
- Posted:

  10/05/2018

- ID:

  EPA-HQ-OAR-2018-0283-1132

- Agency:

  EPA

- RIN:

  2060-AU09

- Docket ID:

  EPA-HQ-OAR-2018-0283

- Organization:
- Submitter Name:

Comment submitted by Sylwia Bialek, Bethany Davis Noll, et al., The Institute for Policy Integrity ("Policy Integrity")

- Attachment Contents : ...Wood, Paul Wilson, Michael Oppenheimer, Kate Larsen & Trevor Houser, Estimating Economic Damage from Climate Change in the United States, 356 Science 1362 (2017). http://science...
- Public Submission
- Posted:

  11/01/2018

- ID:

  EPA-HQ-OAR-2018-0283-5083

From: Harlow, David <harlow.david@epa.gov>
Sent: Monday, September 16, 2019 11:00 AM
To: Leopold, Matt (OGC) <Leopold.Matt@epa.gov>
Cc: Schwab, Justin <Schwab.Justin@epa.gov>; Woods, Clint <woods.clint@epa.gov>
Subject: "Science" article on climate effects

Matt,

Attached is a copy of that *Science* article we were discussing, along with (below) a link to a *New York Times* article discussing it. **Deliberative Process / Ex. 5**

Deliberative Process / Ex. 5

https://www.nytimes.com/interactive/2017/06/29/climate/southern-states-worse-climate-effects.html

Deliberative Process / Ex. 5

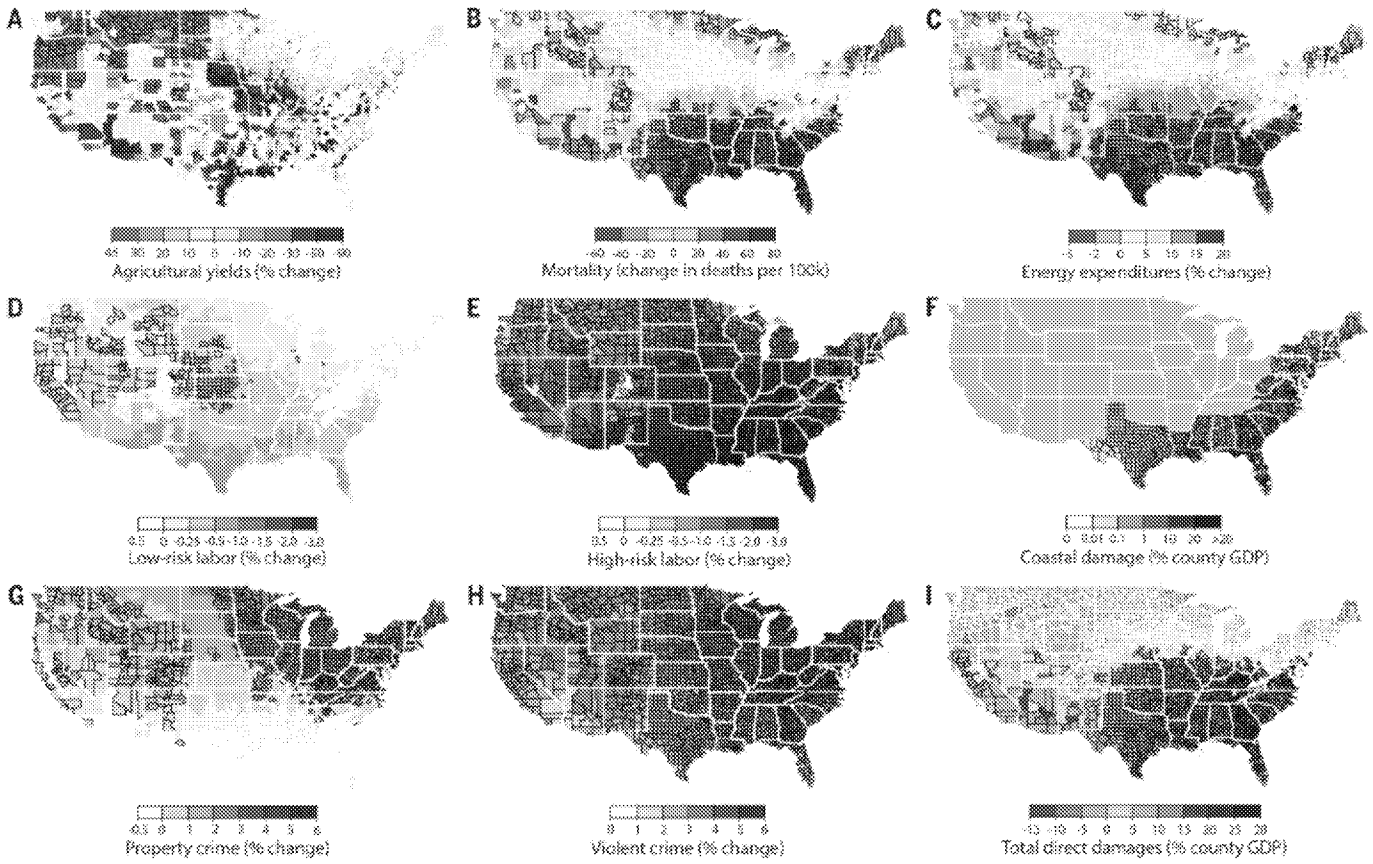

Fig. 2. Spatial distributions of projected damages. County-level median values for average 2080 to 2099 RCP8.5 impacts. Impacts are changes relative to counterfactual "no additional climate change" trajectories. Color indicates magnitude of impact in median projection; outline color indicates level of agreement across projections (thin white outline, inner 66% of projections disagree in sign; no outline, ≥83% of projections agree in sign; black outline, ≥95% agree in sign; thick white outline, state borders; maps without outlines shown in fig. S2). Negative damages indicate economic gains. (**A**) Percent change in yields, area-weighted average for maize, wheat, soybeans, and cotton. (**B**) Change in all-cause mortality rates, across all age groups. (**C**) Change in electricity demand. (**D**) Change in labor supply of full-time-equivalent workers for low-risk jobs where workers are minimally exposed to outdoor temperature. (**E**) Same as (D), except for high-risk jobs where workers are heavily exposed to outdoor temperatures. (**F**) Change in damages from coastal storms. (**G**) Change in property-crime rates. (**H**) Change in violent-crime rates. (**I**) Median total direct economic damage across all sectors [(A) to (H)].

David S. Harlow
Senior Counsel
Immediate Office of the Acting Assistant Administrator
Office of Air and Radiation, USEPA
WJC-N Room 5409K
1200 Pennsylvania Avenue NW
Washington, DC 20460
202-564-1233
Harlow.David@epa.gov

Message

From: woods.clint@epa.gov [woods.clint@epa.gov]
Sent: 9/16/2019 1:56:54 AM
To: Beach, Christopher [beach.christopher@epa.gov]
Subject: Fwd: CA SIP Letter - Internal / Draft / Deliberative / Not for Release
Attachments: Draft CA SIP letter 09122019.docx; ATT00001.htm

Begin forwarded message:

From: "Woods, Clint" <woods.clint@epa.gov>
Date: September 12, 2019 at 10:17:21 AM EDT
To: "Benevento, Douglas" <benevento.douglas@epa.gov>, "Idsal, Anne" <idsal.anne@epa.gov>, "Schwab, Justin" <schwab.justin@epa.gov>, "Fotouhi, David" <fotouhi.david@epa.gov>, "Leopold, Matt (OGC)" <Leopold.Matt@epa.gov>
Subject: CA SIP Letter - Internal / Draft / Deliberative / Not for Release

Ex. 5 Deliberative Process (DP)

Message

From: Dominguez, Alexander [dominguez.alexander@epa.gov]
Sent: 9/19/2019 12:03:34 PM
To: Birgfeld, Erin [Birgfeld.Erin@epa.gov]
CC: Millett, John [Millett.John@epa.gov]; DeLuca, Isabel [DeLuca.Isabel@epa.gov]; Abboud, Michael [abboud.michael@epa.gov]; Woods, Clint [woods.clint@epa.gov]
Subject: Re: Rollout Fact Sheet

Yes that is fine thank you

Sent from my iPhone

On Sep 19, 2019, at 7:59 AM, Birgfeld, Erin <Birgfeld.Erin@epa.gov> wrote:

HI all,

Below is the text for the website. I added the time for when we will post the final rule because every reporter will be asking. LMK if this works for you.

-Erin

Final Rule: One National Program on Federal Preemption of State Fuel Economy Standards

Basic Information

Code of Federal Regulations Citations

- 40 CFR Part 85
- 40 CFR Part 86
- 40 CFR Part 600
- 49 CFR Part 523
- 49 CFR Part 531
- 49 CFR Part 533
- 49 CFR Part 536
- 49 CFR Part 537

Docket Number

- EPA-HQ-OAR-2018-0283

On this page:

- Rule Summary
- Rule History
- Additional Resources

Rule Summary

You may need a PDF reader to view some of the files on this page. See EPA's About PDF page to learn more.

U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) and the U.S. Environmental Protection Agency (EPA) issued a final action entitled the "One National Program Rule" to enable the federal government to provide nationwide uniform fuel economy and greenhouse gas emission standards for automobile and light duty trucks. This action finalizes critical parts of the Safer, Affordable, Fuel-Efficient (SAFE) Vehicles Rule that was first proposed in August 2018. This action makes clear that federal law preempts state and local tailpipe greenhouse gas (GHG) emissions standards as well as zero emission vehicle (ZEV) mandates.

In this action NHTSA is affirming that its statutory authority to set nationally applicable fuel economy standards under the express preemption provisions of the Energy Policy and Conservation Act dictates that such state and local programs are preempted. EPA is also withdrawing the Clean Air Act preemption waiver it granted to the State of California in January 2013 as it relates to California's GHG and ZEV programs.

Rule History

- Proposed Rule

Additional Resources

- Fact Sheet: U.S. DOT and EPA Announce One National Program Rule on Federal Preemption of State Fuel Economy Standards (PDF) (x pp, xx K, EPA-420-F-19-064, September 2019)
- Final Rule to be posted at 12 pm, September 19, 2019

From: Dominguez, Alexander <dominguez.alexander@epa.gov>
Sent: Thursday, September 19, 2019 7:54 AM
To: Birgfeld, Erin <Birgfeld.Erin@epa.gov>
Cc: Millett, John <Millett.John@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Abboud, Michael <abboud.michael@epa.gov>; Woods, Clint <woods.clint@epa.gov>
Subject: Re: Rollout Fact Sheet

Ex. 5 Deliberative Process (DP)

Sent from my iPhone

On Sep 19, 2019, at 7:49 AM, Birgfeld, Erin <Birgfeld.Erin@epa.gov> wrote:

Hi Alex,

Ex. 5 Deliberative Process (DP)

-Erin

From: Dominguez, Alexander <dominguez.alexander@epa.gov>
Sent: Thursday, September 19, 2019 7:47 AM
To: Millett, John <Millett.John@epa.gov>
Cc: Birgfeld, Erin <Birgfeld.Erin@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Abboud, Michael <abboud.michael@epa.gov>; Woods, Clint <woods.clint@epa.gov>
Subject: Re: Rollout Fact Sheet

Fact sheet and press release to go simultaneously during/immediately after the event with the signed pre-publication final rule to go online around noon.

Sent from my iPhone

On Sep 19, 2019, at 7:45 AM, Millett, John <Millett.John@epa.gov> wrote:

> We're hearing that the web should go live at noon w/ signed rule and fact sheet. Is that correct? Thanks!
>
> ---
>
> **From:** Birgfeld, Erin <Birgfeld.Erin@epa.gov>
> **Sent:** Thursday, September 19, 2019 7:19 AM
> **To:** Dominguez, Alexander <dominguez.alexander@epa.gov>
> **Cc:** Millett, John <Millett.John@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Abboud, Michael <abboud.michael@epa.gov>; Woods, Clint <woods.clint@epa.gov>
> **Subject:** RE: Rollout Fact Sheet
>
> OK. Thanks Alex.
>
> ---
>
> **From:** Dominguez, Alexander <dominguez.alexander@epa.gov>
> **Sent:** Thursday, September 19, 2019 7:17 AM
> **To:** Birgfeld, Erin <Birgfeld.Erin@epa.gov>
> **Cc:** Millett, John <Millett.John@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Abboud, Michael <abboud.michael@epa.gov>; Woods, Clint <woods.clint@epa.gov>
> **Subject:** Re: Rollout Fact Sheet
>
> Apologies Erin - the sentence is OK to include. Please add back in.
>
> Thank you.
>
> Sent from my iPhone
>
> On Sep 19, 2019, at 7:05 AM, Birgfeld, Erin <Birgfeld.Erin@epa.gov> wrote:
>
> > HI Alex and John,
> >
> > I'm going to finalize the document without this sentence as requested. LMK if there are any other updates.

-Erin

From: Dominguez, Alexander <dominguez.alexander@epa.gov>
Sent: Wednesday, September 18, 2019 7:48 PM
To: Millett, John <Millett.John@epa.gov>
Cc: DeLuca, Isabel <DeLuca.Isabel@epa.gov>; Abboud, Michael <abboud.michael@epa.gov>; Woods, Clint <woods.clint@epa.gov>; Birgfeld, Erin <Birgfeld.Erin@epa.gov>
Subject: Re: Rollout Fact Sheet

Ex. 5 Deliberative Process (DP)

Please make sure that this is cleared by DOT or omit.

Sent from my iPhone

On Sep 18, 2019, at 4:26 PM, Millett, John <Millett.John@epa.gov> wrote:

> Thanks, Alex -- Pulling from those drafts, here's a draft fact sheet – looping Erin on the review-approval chain, since OTAQ will need to format for consistency prior to posting, and timing is tight.
>
> Folks are coming in early tomorrow to make this happen.
>
> **From:** Dominguez, Alexander <dominguez.alexander@epa.gov>
> **Sent:** Wednesday, September 18, 2019 1:30 PM
> **To:** Millett, John <Millett.John@epa.gov>; DeLuca, Isabel <DeLuca.Isabel@epa.gov>
> **Cc:** Abboud, Michael <abboud.michael@epa.gov>; Woods, Clint <woods.clint@epa.gov>
> **Subject:** Rollout Fact Sheet

John and Isabel -
I think Clint had flagged for you that in advance of the rollout tomorrow morning we would need a one or two page EPA fact sheet that could be posted online. I'm not sure if this is something you all have already started but I did want to provide you two very rough draft documents that may help the effort.

<SAFE fact sheet 9.18.19 draft v1.docx>

Message

From: Dominguez, Alexander [dominguez.alexander@epa.gov]
Sent: 9/17/2019 7:12:31 PM
To: Woods, Clint [woods.clint@epa.gov]
Subject: SAFE Docs
Attachments: SAFE Internal Overview 9.16.19.docx; SAFE Internal P2.docx

Message

From: Dominguez, Alexander [dominguez.alexander@epa.gov]
Sent: 9/18/2019 5:14:42 PM
To: Abboud, Michael [abboud.michael@epa.gov]
CC: Woods, Clint [woods.clint@epa.gov]
Subject: Draft Fact Sheets
Attachments: SAFE Internal Overview 9.16.19.docx; SAFE Internal P2.docx

Attached rough draft materials

Message

From: Henderson, Barron [henderson.barron@epa.gov]
Sent: 9/23/2019 4:26:30 PM
To: Koerber, Mike [Koerber.Mike@epa.gov]; Woods, Clint [woods.clint@epa.gov]; Wayland, Richard [Wayland.Richard@epa.gov]; Ling, Michael [Ling.Michael@epa.gov]; Mathias, Scott [Mathias.Scott@epa.gov]
CC: Kornylak, Vera S. [Kornylak.Vera@epa.gov]; Fox, Tyler [Fox.Tyler@epa.gov]; Dominguez, Alexander [dominguez.alexander@epa.gov]; Schwab, Justin [Schwab.Justin@epa.gov]
Subject: RE: Discuss Comments on 179B Guidance
Attachments: International_Transport_2019-08-19v2.pptx

Clint,

This is the attached version.

Barron Henderson, Ph.D.
US EPA; 919-541-2760

-----Original Appointment-----
From: Koerber, Mike <Koerber.Mike@epa.gov>
Sent: Monday, September 16, 2019 10:22 AM
To: Koerber, Mike; Woods, Clint; Wayland, Richard; Ling, Michael; Mathias, Scott
Cc: Kornylak, Vera S.; Henderson, Barron; Fox, Tyler; Dominguez, Alexander; Schwab, Justin
Subject: Discuss Comments on 179B Guidance
When: Monday, September 23, 2019 12:00 PM-12:30 PM (UTC-05:00) Eastern Time (US & Canada).
Where: Phone Number: (b) (6) [redacted]

Message

From: Dominguez, Alexander [dominguez.alexander@epa.gov]
Sent: 9/17/2019 2:02:05 PM
To: Woods, Clint [woods.clint@epa.gov]
Subject: SAFE Internal Overview 9.16.19.docx
Attachments: SAFE Internal Overview 9.16.19.docx

Message

From: Woods, Clint [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BC65010F5C2E48F4BC2AA050DB50D198-WOODS, CLIN]
Sent: 10/2/2019 5:12:32 PM
To: Cory, Preston (Katherine) [Cory.Preston@epa.gov]; Alexander Dominguez (dominguez.alexander@epa.gov) [dominguez.alexander@epa.gov]
Subject: FW: CA Air Quality Background
Attachments: INTERNAL DRAFT DELIBERATIVE CA BACKGROUND.docx

From: Woods, Clint
Sent: Tuesday, August 6, 2019 10:53 AM
To: Benevento, Douglas <benevento.douglas@epa.gov>
Cc: Idsal, Anne <idsal.anne@epa.gov>; David Harlow (harlow.david@epa.gov) <harlow.david@epa.gov>
Subject: CA Air Quality Background

DRAFT INTERNAL DELIBERATIVE – NOT FOR RELEASE

Doug,

Attached is OAR's California backgrounder. David Harlow may be sending along a few tweaks but wanted to get you a copy in the meantime.

Thanks!

Clint Woods
Deputy Assistant Administrator
Office of Air and Radiation, U.S. EPA
202.564.6562

Message

From: Woods, Clint [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BC65010F5C2E48F4BC2AA050DB50D198-WOODS, CLIN]
Sent: 9/18/2019 7:08:01 PM
To: Schwab, Justin [schwab.justin@epa.gov]
Subject: redline me
Attachments: Draft CA SIP letter 09122019 dougified version.docx; Draft CA SIP letter 09122019.docx

Clint Woods
Deputy Assistant Administrator
Office of Air and Radiation, U.S. EPA
202.564.6562

Message

From: Woods, Clint [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BC65010F5C2E48F4BC2AA050DB50D198-WOODS, CLIN]
Sent: 9/16/2019 1:56:55 AM
To: Beach, Christopher [beach.christopher@epa.gov]
Subject: Fwd: CA SIP Letter - Internal / Draft / Deliberative / Not for Release
Attachments: Draft CA SIP letter 09122019.docx; ATT00001.htm

Begin forwarded message:

From: "Woods, Clint" <woods.clint@epa.gov>
Date: September 12, 2019 at 10:17:21 AM EDT
To: "Benevento, Douglas" <benevento.douglas@epa.gov>, "Idsal, Anne" <idsal.anne@epa.gov>, "Schwab, Justin" <schwab.justin@epa.gov>, "Fotouhi, David" <fotouhi.david@epa.gov>, "Leopold, Matt (OGC)" <Leopold.Matt@epa.gov>
Subject: CA SIP Letter - Internal / Draft / Deliberative / Not for Release

Ex. 5 Deliberative Process (DP)

Message

From: Woods, Clint [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BC65010F5C2E48F4BC2AA050DB50D198-WOODS, CLIN]
Sent: 9/23/2019 1:31:03 PM
To: Alexander Dominguez (dominguez.alexander@epa.gov) [dominguez.alexander@epa.gov]; Schwab, Justin [schwab.justin@epa.gov]; David Harlow (harlow.david@epa.gov) [harlow.david@epa.gov]
Subject: FW: air letter talking points
Attachments: CA Talking Points OAR 9-23-19.docx

From: Woods, Clint
Sent: Monday, September 23, 2019 9:30 AM
To: Schiermeyer, Corry <schiermeyer.corry@epa.gov>; Idsal, Anne <idsal.anne@epa.gov>; McFaul, Jessica <mcfaul.jessica@epa.gov>
Cc: Abboud, Michael <abboud.michael@epa.gov>; Jackson, Ryan <jackson.ryan@epa.gov>; Benevento, Douglas <benevento.douglas@epa.gov>
Subject: RE: air letter talking points

Talking points attached – Thanks!

From: Schiermeyer, Corry <schiermeyer.corry@epa.gov>
Sent: Monday, September 23, 2019 9:01 AM
To: Idsal, Anne <idsal.anne@epa.gov>; Woods, Clint <woods.clint@epa.gov>; McFaul, Jessica <mcfaul.jessica@epa.gov>
Cc: Abboud, Michael <abboud.michael@epa.gov>
Subject: air letter talking points

Hello Anne and Clint,

Do we have talking points that we can get to the Administrator on the air letter. We are hoping to have him talk about this today with a reporter.

Also, we would then get one of you on the phone with the reporter.

I believe Doug is also reaching out to you all.

Thank you…

Corry Schiermeyer
Associate Administrator
Office of Public Affairs
Environmental Protection Agency
Schiermeyer.corry@epa.gov
202-564-6782

Message

From: Woods, Clint [/O=EXCHANGELABS/OU=EXCHANGE ADMINISTRATIVE GROUP (FYDIBOHF23SPDLT)/CN=RECIPIENTS/CN=BC65010F5C2E48F4BC2AA050DB50D198-WOODS, CLIN]
Sent: 9/4/2019 6:28:08 PM
To: Dominguez, Alexander [dominguez.alexander@epa.gov]; Schwab, Justin [Schwab.Justin@epa.gov]
Subject: Fwd: CA Air Quality Background
Attachments: INTERNAL DRAFT DELIBERATIVE CA BACKGROUND.docx; ATT00001.htm

Begin forwarded message:

From: "Woods, Clint" <woods.clint@epa.gov>
Date: September 4, 2019 at 12:14:23 PM EDT
To: "Jacks, Susan" <Jacks.Susan@epa.gov>
Subject: FW: CA Air Quality Background

Would it be possible to print 8 color copies of this attachment?

From: Woods, Clint
Sent: Tuesday, August 6, 2019 10:53 AM
To: Benevento, Douglas <benevento.douglas@epa.gov>
Cc: Idsal, Anne <idsal.anne@epa.gov>; David Harlow (harlow.david@epa.gov) <harlow.david@epa.gov>
Subject: CA Air Quality Background

DRAFT INTERNAL DELIBERATIVE – NOT FOR RELEASE

Doug,

Attached is OAR's California backgrounder. David Harlow may be sending along a few tweaks but wanted to get you a copy in the meantime.

Thanks!

Clint Woods
Deputy Assistant Administrator
Office of Air and Radiation, U.S. EPA
202.564.6562