



October 26th, 2018

RE: U.S. Department of Transportation and Environmental Protection Agency, Joint Proposal “Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks.” Docket IDs: EPA-HQ-OAR-2018-0283 / NHTSA-2018-0067; 83 FR 42986 (Aug. 24, 2018).

COMMENTS OF THE COMPETITIVE ENTERPRISE INSTITUTE

The Competitive Enterprise Institute hereby submits these comments on the joint DOT/EPA proposed SAFE Vehicles Rule. We support this proposal, which would (1) reduce the stringency of the upcoming CAFE standards, and (2) preempt California’s greenhouse gas emission standards.

The proposal makes clear that a less stringent CAFE standard would produce significant social benefits including, most importantly, a sizable reduction in deaths and injuries attributable to CAFE. However, as discussed below, it is just as clear that the agencies (collectively referred to as DOT in the discussion of the safety issue below) have not gone far enough in making CAFE more lenient. DOT failed to consider the possibility of freezing CAFE at an even more lenient standard than currently exists, nor did it consider making its proposed freeze take effect sooner than MY 2020. However, as DOT’s own analysis strongly indicates, doing so would lead to even greater benefits and an even greater reduction in CAFE-related deaths and injuries.

In short, DOT’s failure to consider this possibility is arbitrary and capricious. It has an opportunity to remedy this in its final rule, and it should do so by selecting a standard that is even more lenient than the one it proposed.

Finally, returning the California Air Resources Board to its appropriate role as a stakeholder rather than decision maker in fuel economy policy would greatly improve the institutional framework shaping the selection of fuel economy standards. Once California is preempted from adopting laws or regulations “related to” fuel economy, DOT will be less likely to ignore, discount, or deny the adverse impacts of fuel economy standards on vehicle affordability and occupant safety.

1. The Proposed Rule Is a Welcome Step Forward. However, DOT Arbitrarily Failed To Consider Any Standard Lower Than What It Proposed and Made Assumptions Undervaluing the Benefits of More Lenient CAFE Standards.

DOT has a duty to consider reasonable options and to select the one that best fits the statutory criteria. As will be shown below, DOT has failed to consider all such reasonable options, such as failing to consider reducing the CAFE requirements or freezing the standard earlier. Additionally, DOT has made arbitrary assumptions that even it acknowledges are not based on substantial evidence and that undervalue the benefits of a lower CAFE standard.

1. DOT Failed to Reasonably Consider Lowering the CAFE Standards.

The notice of proposed rulemaking considered eight possible regulatory alternatives to the currently scheduled “augural” standards for MY 2021 and beyond.¹ After evaluating each of these possible standards, DOT choose what it considered to be the maximum feasible CAFE standards, based on the need of the Nation to conserve energy, and other statutory factors, such as technological feasibility and economic practicability. Its choice was the alternative that froze the CAFE requirements at 2020 levels—an alternative that was *the least stringent* of the standards considered. But why were only these scenarios considered?

The agency is “required to address common and known or otherwise reasonable options, and to explain any decision to reject such options.”² In the words of one appellate court, “An agency is required to consider responsible alternatives to its chosen policy and to give a reasoned explanation for its rejection of such alternatives.”³

DOT chose the most lenient of its eight alternatives, finding that it best satisfied the statutory factors. What is noteworthy is that its analysis showed that, for all eight alternatives, the reduction in fatalities was positively correlated with the leniency of the alternative; *that is, the more lenient the alternative CAFE standard, the fewer fatalities occurred.*⁴

DOT should have followed the clear implications of this association. It should have gone beyond its original set of alternatives and examined less stringent ones as well—until it found one that, for some reason or another, failed to produce greater safety benefits or failed to meet the statutory factors. Its failure to extend its analysis in this way was arbitrary and capricious.

¹ 83 FR 42990.

² *Int’l Ladies’ Garment Workers’ Union v. Donovan*, 722 F.2d 795, 818 (D.C. Cir. 1983).

³ *Am. Radio Relay League, Inc. v. FCC*, 524 F.3d 227, 242 (D.C. Cir. 2008).

⁴ See Preliminary Regulatory Impact Analysis (PRIA) (updated through Oct. 16, 2018), Tables 11-27, 11-28, pp. 1405-06 (showing that the number of lives saved steadily diminishes as one goes from DOT’s proposed Alternative 1 to the increasingly stringent seven other alternatives.). The same is almost entirely true for net social benefits as well. See Tables 12-23, 12-25, pp. 1445-46, 1449-50.

a. *DOT Clearly Could Have Lowered CAFE Standards from Their Current Level, and It Should Have Considered Doing So in This Rulemaking*

The current proposal involves reducing a scheduled increase in a future CAFE standard, rather than a reduction in the current standard. There is no question, however, that DOT has the power to do the latter as well. That power was upheld in *Center for Auto Safety v. NHTSA*⁵ where DOT issued a CAFE standard of 19.5 mpg, which was a reduction of 1.5 mpg from the original requirement of 21 mpg. The Center for Auto Safety sued NHTSA, claiming this wasn't the "maximum feasible average fuel economy level" and arguing that "shifts in consumer demand cannot be a valid reason to set standards at lower levels."⁶

The court disagreed, holding that Congress "specifically delegated the process of setting light truck fuel economy standards with broad guidelines concerning the factors that the agency *must* consider."⁷ It pointed out that "a standard with harsh economic consequences" would be an "unreasonable balancing of EPCA's policies,"⁸ and that the statutory "factors of 'technological feasibility' and 'economic practicability' are each broad enough to encompass the concept of consumer demand."⁹ Each of these must be considered by DOT.¹⁰ Changes to that demand may make previous standards no longer feasible and require a lowering of the existing standard. As such, the court held that the factors the agency must consider include such issues as economic changes, consumer choice, and other factors that could warrant lowering the standard.

And yet, even with direct on-point court precedent that lowering the existing standard based on consumer demand or other factors is part of what DOT has considered in the past, the agency considered no scenario involving lowering current CAFE standards (as opposed to simply modifying scheduled increases in future standards). Its failure to do so without cause is arbitrary and capricious.

b. *DOT Must Also Consider an Earlier Freeze to the Standard*

The NPRM delays freezing the standard until 2020 without giving a reason for such delay. DOT fails to explain why it waits until 2020 to freeze the standard and does not consider freezing the standard earlier. Instead, DOT should consider freezing the standard at the current 2018 level. Just freezing at the current 2018 CAFE standards would save 2,900 additional lives according to NHTSA's own modeling software through Model Year 2029 (see below).

Normally a lead time of 18 months is required for most modifications of CAFE standards.¹¹ But this requirement is only if the change is making the standard more stringent; if

⁵ 793 F.2d 1322 (D.C. Cir. 1986).

⁶ *Id.* at 1339.

⁷ *Id.* at 1341 (emphasis added).

⁸ *Id.* at 1340.

⁹ *Id.* at 1338.

¹⁰ 49 U.S.C. § 32902(f).

¹¹ 49 U.S.C. 32902(g)(2).

the standard is being amended to make the standard less stringent than no lead time is required.¹² With no statutory requirement for a lead time requirement, there is no reason for not considering an earlier freeze of the standard.

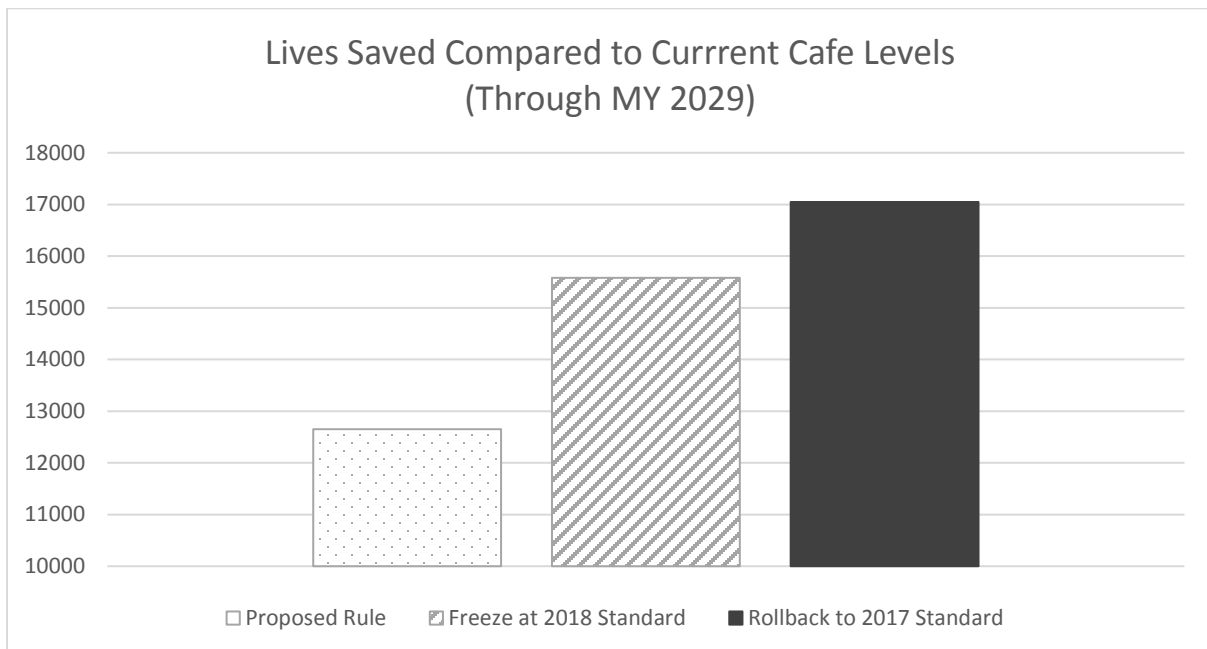
c. An Earlier Freeze or Rollback Would Improve Safety

“NHTSA has previously considered safety as an aspect of technological or economic feasibility” that it must consider.¹³ To consider such safety aspects we have used NHTSA’s own modeling software which demonstrates substantial safety advantages to an earlier freeze or rollback compared to the proposed NPRM standard. To do this, we edited the scenarios excel input file and copy-pasted the 2019 and future values of the CAFE standard with the values of 2018 (for a freeze at that year) or 2017 (to rollback to that standard), and then re-ran the modelling software.

The results show an advantage in safety of a 2018 freeze or a 2017 rollback when comparing lives saved over the current CAFE standard through MY 2029:

- 12,700 lives saved by the proposed rule.¹⁴
- 15,600 lives saved by a freeze at 2018.
- 17,000 lives saved by a rollback to 2017.

This can also be shown in a chart of the total lives saved which demonstrates the advantage in terms of lives saved of an earlier freeze or rollback:



¹² *Id.* (“amendment under this section that makes an average fuel economy standard *more stringent* [shall be issued] at least 18 months before the beginning of the model year to which the amendment applies.”) (emphasis added).

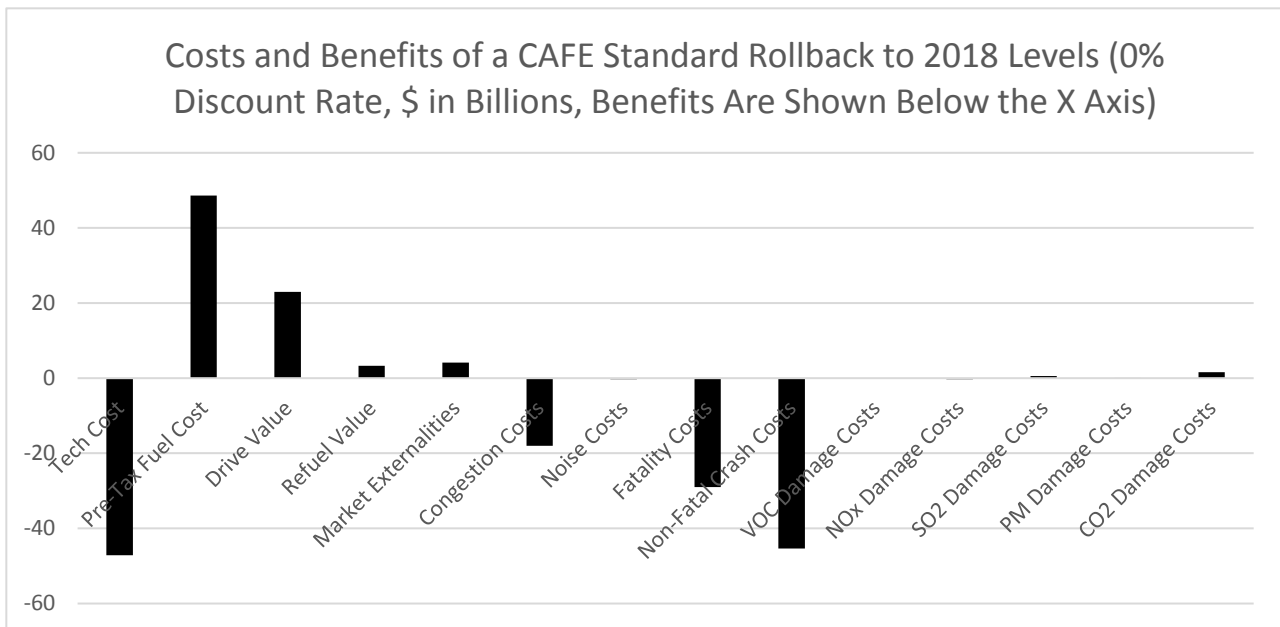
¹³ *Competitive Enter. Inst. v. Nat'l Highway Traffic Safety Admin.*, 45 F.3d 481, 483 (D.C. Cir. 1995).

¹⁴ See Preliminary Regulatory Impact Analysis (updated through Oct. 16, 2018), Table 11-28, p. 1406.

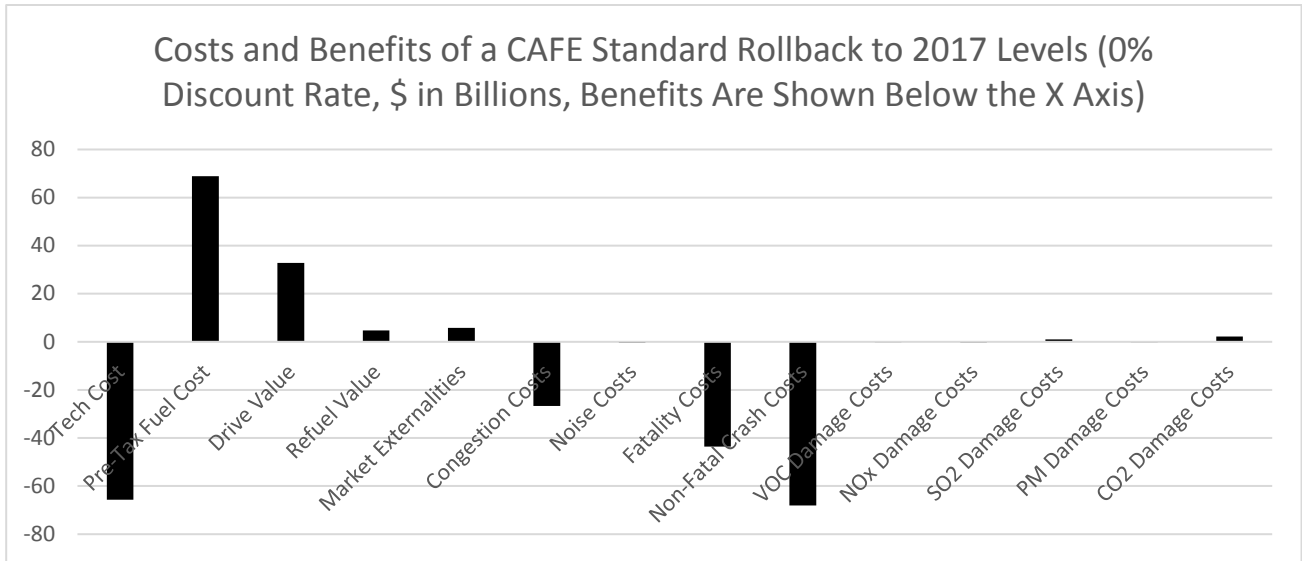
DOT must consider standards reasonably implied by DOT’s analysis—in this case a lower CAFE standard as well as an earlier freeze to the standard—to have considered all common and known or otherwise reasonable options. This is especially true for standards that according to DOT’s own model, will save lives.

d. An Earlier Freeze or Rollback Would Provide an Even Greater Net Societal Benefit

In addition to considering fatalities that will occur under the various regulatory standards, DOT has considered a variety of other factors that the statute requires to be considered. To be able to compare all these factors, DOT has resolved all of them to a monetary value. For instance, DOT evaluated the value of a human life at \$9.9 million. This allows DOT to evaluate the total benefits and costs of various potential regulatory possibilities. We have used the same tool used by DOT to evaluate the costs and benefits of a regulatory freeze at 2018 levels and a rollback at 2017 levels. We found substantial total benefits to a freeze at 2018 levels, and even greater benefits to a rollback to 2017 CAFE standards.



As can be seen above, the primary costs freezing the CAFE standard at the 2018 levels is an increase in the total pre-tax fuel costs paid by consumers. The primary benefits are in the reduced technology costs to manufacturers for complying with CAFE. And, most importantly, there are benefits from the reduction of both fatal and non-fatal car crashes.

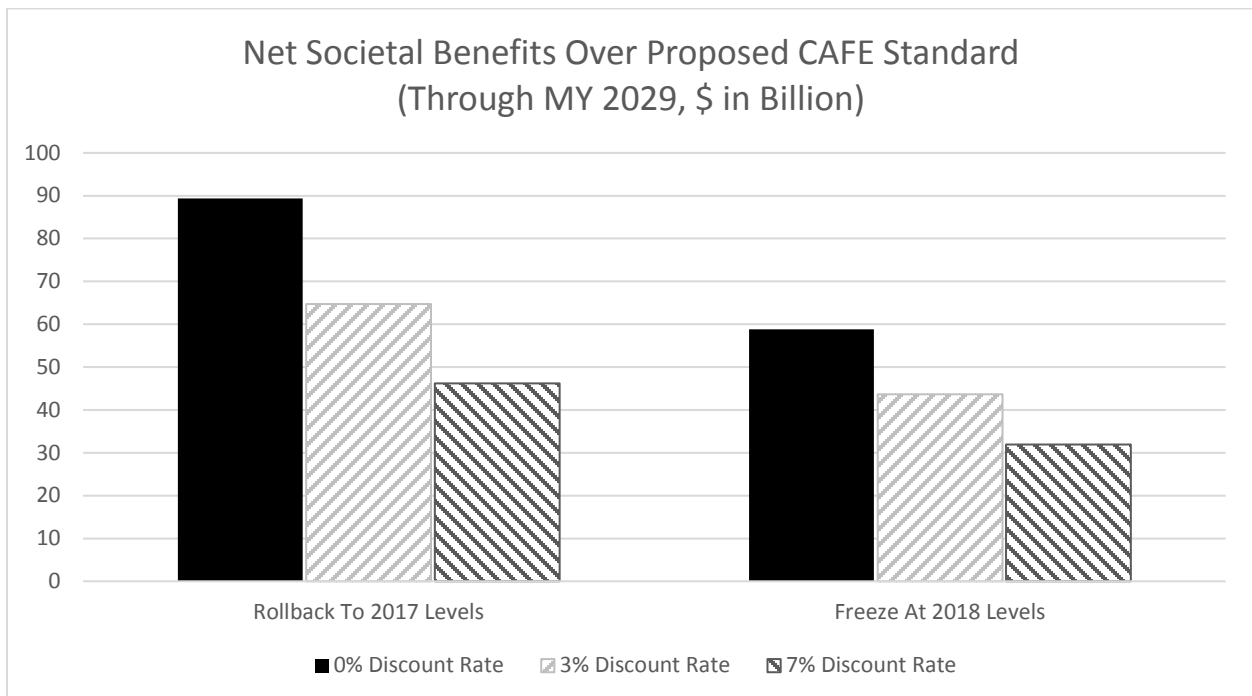


A rollback to the 2017 level has many of the same benefits and costs as a freeze; the primary difference is in the magnitude of the effects. A rollback to the 2017 standard would have greater costs and greater benefits over a freeze at 2018 levels.

When all of the numbers are added up, a freeze at the 2018 level or a rollback to the 2017 standard would both yield net societal benefits over the proposed standard at all of the discount rates considered by DOT. At 0% discount rate, for example, total societal benefits are:

- \$89 billion for a rollback to 2017 CAFE levels (over the proposed rule).
- \$59 billion for a freeze at 2018 CAFE levels (over the proposed rule).

This can be seen in the chart below:



In short, both a freeze at 2017 and a rollback to 2018 would produce greater total societal benefits than the DOT's proposed standard. This is based on DOT's own modelling software, adding yet another reason for why these are scenarios that must be considered by the agency.

2. NHTSA Arbitrarily Made Certain Assumptions Which Unjustifiably Undervalue Lower Standards.

By DOT's own analysis, DOT has made assumptions that are not "the most likely case," creating a "conservative assumption [that] may cause the NPRM to understate the beneficial effect of proposed standards on improving (reducing) the number of fatalities."¹⁵ This arbitrarily and inappropriately decreases the benefits of lower standards.

For example, DOT acknowledges the failure to apply the most likely case in calculating future improved safety trends on a per mile basis. Instead, DOT assumes that all future safety technological improvements will end in 2035. But the end of technological safety improvements has never occurred before in the history of humanity. And DOT itself acknowledges there is not a substantial evidence for such a conclusion.¹⁶ DOT's use of such an assumption is arbitrary and capricious. If it had used reasonable predictions were used instead, it would view lower standards as having even fewer predicted fatalities and greater total societal benefits.

But this isn't the only arbitrarily conservative assumption that DOT has made. DOT has arbitrarily claims, at one point, that the safety risks of the rebound effect are not "caused by" the CAFE standards. Instead, DOT says, "When considering safety impacts actually imposed by CAFE standards, only those from mass changes and vehicle purchase delays are considered."¹⁷

This approach is extremely questionable. When someone drives more due to the rebound effect, the risks of that extra driving will fall, in part, on other drivers and pedestrians who did not make such a choice. For that reason, the safety risks of such driving should not be categorically excluded from the agency's calculus.

II. Regardless of What Regulatory Alternative It Chooses, DOT Should Inform the Public of CAFE's True Cost In Terms of Lives Lost

In 1991 CEI and Consumer Alert sued DOT over its failure to adequately consider safety in setting its MY 1990 CAFE standard.¹⁸ In ruling for CEI in 1992, the court noted that an adequate consideration of safety might well have led the agency to choose a more lenient standard than the one it chose.¹⁹ In the court's words, DOT had engaged in "decisional evasion",

¹⁵ 83 FR 43139.

¹⁶ 83 FR 43139 (NHTSA says it is not "the most likely case," or, in other words, that there is not substantial evidence to say that it is what is most likely to occur).

¹⁷ 83 FR 43148.

¹⁸ See *Competitive Enter. Inst. v. Nat'l Highway Traffic Safety Admin.*, 956 F.2d 321 (D.C. Cir. 1992).

¹⁹ *Id.* at 330.

using “fudged ... analysis” and “statistical legerdemain” to assert that “its decision had no safety cost at all.”²⁰

In the current rulemaking, DOT has not gone to such extremes. To the contrary, the justification for its proposal confronts certain aspects of the CAFE safety issue head on, and the agency is to be commended for that. But in artificially truncating the alternatives it considered, DOT risks misleading the public in ways similar to what occurred in the above case. So long as CAFE has a binding impact, it will have a safety impact as well. It is DOT’s duty to publicly to acknowledge that.

As the court pointed out in the *CEI* case, “[w]hen the government regulates in a way that prices many of its citizens out of access to large-car safety, it owes them reasonable candor. If it provides that, the affected citizens at least know that the government has faced up to the meaning of its choice.”²¹ As DOT points out in its current rulemaking, CAFE raises not just the problem of access to large-car safety, but of access to new-car safety as well. That is all the more reason for DOT to publicly assess the safety costs of whatever standard it ultimately chooses.

III. DOT’s Treatment of Particulate Matter Emissions Is Fully Justified, and May Actually Overstate the Risks of these Emissions

DOT attributes relatively little damage to increased particulate matter (PM) emissions.²² DOT’s proposal has been criticized for failing to give adequate weight to this factor, and some critics have even claimed that the alleged health risks of PM emissions far outweigh the traffic safety benefits of its proposal.

In our view, these claims are false. Not only is DOT’s low estimate of damage from PM valid; if anything, it is *overstated*. This is demonstrated by the attached paper by Steve Milloy.²³ As that paper shows, the evidence for deaths from PM emissions is seriously deficient. It concludes that:

“the available evidence fails to link PM 2.5 in outdoor air with death. Therefore, a benefit-cost analysis for the SAFE rule need not concern itself with PM 2.5 and death. Whatever minor changes in PM 2.5 levels that might be brought about by the proposed SAFE rule ... will not cause or prevent deaths or change death rates.”²⁴

²⁰ *Id.* at 323-24.

²¹ *Id.* at 327.

²² See, e.g., Preliminary Regulatory Impact Analysis (updated through Oct. 16, 2018), Tables 1-73 to 1-76, pp. 85-91.

²³ *Will the Trump Fuel Economy Reform Proposal Create Deadly Air Pollution?*, CEI OnPoint (oct. 17, 2018), https://cei.org/sites/default/files/Steve_Milloy_-_Will_CAFE_Reform_Proposal_Create_Deadly_Air_Pollution%20%281%29.pdf.

²⁴ *Id.* at 8.

IV. Federal Statutes Preempt California’s Greenhouse Gas and Zero Emission Vehicle Standards

Like EPA’s proposal to repeal the so-called Clean Power Plan²⁵ and President Trump’s decision to withdraw from the Paris climate treaty,²⁶ the proposed rule would realign climate and energy policy to comport with the separation of powers and congressional intent.²⁷

Returning the California Air Resources Board (CARB) to its appropriate role as a stakeholder rather than decision maker in fuel economy policy would greatly improve the institutional framework shaping the selection of fuel economy standards. Once California is preempted from adopting laws or regulations “related to” fuel economy, DOT will be less likely to ignore, discount, or deny the adverse impacts of fuel economy standards on vehicle affordability and occupant safety.

a. Quick Background

Under the Environmental Policy and Conservation Act (EPCA), the statutory scheme Congress enacted in 1975 and amended in 2007, one agency—NHTSA—prescribes fuel economy standards under one statute, through one set of regulations. In *Massachusetts v. EPA* (2007), the Supreme Court purportedly found in the Clean Air Act’s definition of “air pollutant” a hitherto unrecognized separate authority for EPA to regulate fuel economy.²⁸ Under revisions adopted by the Obama administration, three agencies—NHTSA, EPA, and CARB—co-determine fuel economy standards under three statutes, through three sets of regulations.²⁹

Although EPCA authorizes NHTSA to prescribe and enforce fuel economy standards, directs EPA to measure compliance with (not prescribe) fuel economy standards,³⁰ and prohibits states from adopting or enforcing laws or regulations “related to” fuel economy standards, the

²⁵ EPA, Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units; Proposed Rule, 82 FR 48035-43500, October 16, 2017, <https://www.gpo.gov/fdsys/pkg/FR-2017-10-16/pdf/2017-22349.pdf>

²⁶ Statement by President Trump on the Paris Climate Accord, June 1, 2017, <https://www.whitehouse.gov/briefings-statements/statement-president-trump-paris-climate-accord/>

²⁷ Marlo Lewis, “Free Market Groups Call for Repeal of Clean Power Plan,” Open Market, April 26, 2018, <https://cei.org/blog/free-market-groups-call-repeal-clean-power-plan/>; “The Constitutional Cure for the Paris Agreement,” Open Market, June 1, 2018, <https://cei.org/blog/constitutional-cure-paris-agreement>

²⁸ *Massachusetts v. EPA*, 549 U.S. 497 (2007). For a critique of the Court’s reasoning, see Marlo Lewis, “The Unbearable Lightness of UARG v. EPA,” GlobalWarming.Org, July 4, 2014, <http://www.globalwarming.org/2014/07/04/the-unbearable-lightness-of-uarg-v-epa/>

²⁹ The White House, Remarks by the President on National Fuel Economy Standards, May 19, 2009, <https://obamawhitehouse.archives.gov/the-press-office/remarks-president-national-fuel-efficiency-standards>; EPA, California State Motor Vehicle Pollution Control Standards; Notice of Decision Granting a Waiver of Clean Air Act Preemption for California’s 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles; Notice, 74 FR 32744-32784, July 8, 2009, <https://www.gpo.gov/fdsys/pkg/FR-2009-07-08/pdf/E9-15943.pdf>

³⁰ 83 FR 43210

Obama administration positioned CARB to be the vanguard agency in fuel economy regulation (as explained below).

The SAFE Rule proposes to re-limit CARB in two main ways. NHTSA will determine that California’s greenhouse gas (GHG) tailpipe standards and zero emission vehicle (ZEV) mandates are preempted by EPCA. EPA, for its part, will withdraw the January 9, 2013 Clean Air Act waiver authorizing California’s Advanced Clean Car (ACC) program, ZEV mandate, and GHG standards for model year 2021-2025 motor vehicles.

1. EPCA Preempts California’s GHG and ZEV Standards

a. EPCA Preemption Is Broad and Clear

As the SAFE Rule explains, federal statutory preemption provisions derive their authority from the U.S. Constitution’s Supremacy Clause. Laws made pursuant to the Constitution “shall be the supreme law of the land, and the judges in every state shall be bound thereby, anything in the laws or constitution of any state to the contrary notwithstanding” (Article VI).

Congress in 1975 enacted EPCA, which created the national fuel economy program. EPCA’s express preemption of state laws or regulations related to fuel economy is, as the SAFE Rule says,³¹ “broad and clear”:

When an average fuel economy standard prescribed under this chapter is in effect, a State or a political subdivision of a State may not adopt or enforce a law or regulation related to fuel economy standards or average fuel economy standards for automobiles covered by an average fuel economy standard under this chapter [49 U.S.C. 32919].

It is hard to imagine a broader and clearer preemption provision than that in EPCA. As the SAFE Rule points out:

- Unlike Clean Air Act (CAA) section 209(b), which allows EPA to waive federal preemption of state automobile emission standards, “EPCA does not allow for a waiver of preemption.”
- Also unlike CAA section 209(b), EPCA does not allow states to establish or enforce identical or equivalent regulations.
- Most importantly, “In a further indication of Congress’ intent to ensure that state regulatory schemes do not impinge upon EPCA’s goals, the statute preempts state laws merely *related to* fuel economy standards or average fuel economy standards.”³²

Supreme Court cases cited by the SAFE Rule establish that the phrase “related to” in preemption statutes expresses a broad preemptive purpose.³³ As in common speech, in

³¹ 83 FR 43233

³² 83 FR 43233

³³ *Shaw v. Delta Airlines, Inc.*, 463 U.S. 85, 97 (1983) (ERISA case); *Morales v. Trans World Airlines, Inc.*, 504 U.S. 374, 374, 383–84 (1992)

preemption provisions “related to” signifies that one thing stands in some relation to another thing, has some bearing on it, refers or pertains to it, and the like.

b. Fuel Economy Standards and GHG Standards Are Inherently Related

As it happens, the functional relationship between greenhouse gas tailpipe standards and fuel economy standards is so close that “greenhouse gas emissions, and particularly carbon dioxide emissions, are mathematically linked to fuel economy and therefore regulations limiting tailpipe carbon dioxide emissions are directly related to fuel economy.”³⁴ There is no real dispute on that point.

Although Obama administration officials would later deny under oath that fuel economy standards and greenhouse gas tailpipe standards are “related,”³⁵ the Obama EPA and NHTSA’s first joint rulemaking in 2010 described the relationship as “very direct and close.”³⁶ That’s because carbon dioxide constitutes 94 percent of all motor vehicle greenhouse gas emissions, and “there is a single pool of technologies . . . that reduce fuel consumption and thereby reduce CO2 emissions as well.”³⁷

The SAFE Rule spells out the legal implication:

Since there is but one pool of technologies for reducing tailpipe CO2 emissions and increasing fuel economy available now and for the foreseeable future, regulation of CO2 emissions and fuel consumption are inextricably linked. Such state regulations [as California’s greenhouse gas motor vehicle standards] are therefore unquestionably “related” and expressly preempted under 49 U.S.C. 32919.³⁸

The close and inherent relationship is also evident in the October 2011 Interim Joint Technical Assessment Report co-authored by EPA, NHTSA, and CARB to “coordinate” and “harmonize” their efforts to prescribe fuel economy and GHG standards for model year 2017-2025 passenger cars. The report considers four fuel economy standards, ranging from 47 mpg to 62 mpg; each derives from an associated CO2 emission reduction scenario. The 54.5 mpg

³⁴ 83 FR 43234

³⁵ During an October 12, 2011 House Government Reform and Oversight Committee hearing on “The Obama Administration’s Efforts to Raise Fuel Economy Standards,” NHTSA Administrator David Strickland, EPA Assistant Air Administrator Gina McCarthy, and EPA Transportation and Air Quality Director Margo Oge each denied that motor vehicle greenhouse gas emission standards are “related to” fuel economy standards. See, Chairman Daryl Issa, Letter to the Honorable Gina McCarthy, October 18, 2011, <http://www.globalwarming.org/wp-content/uploads/2011/10/2011-10-18-DEI-to-Gina-McCarthy-re-EPCA.pdf>

³⁶ EPA, NHTSA, Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule, 75 FR 25327, May 7, 2010, <https://www.gpo.gov/fdsys/pkg/FR-2010-05-07/pdf/2010-8159.pdf>

³⁷ 75 FR 25326-25327

³⁸ 83 FR 43234

standard selected in the 2012 rulemaking for model year 2025 is a negotiated compromise between the 4 percent (51 mpg) and 5 percent (56 mpg) CO₂ reduction scenarios.³⁹

The 2004 Staff Report presenting CARB's plan to implement AB 1493, California's greenhouse gas motor vehicle emissions law, is another smoking gun. All of CARB's recommended technologies for meeting the agency's CO₂ tailpipe standards are fuel-saving technologies; none is an emission-control technology.⁴⁰

Even the text of AB 1493 implicitly requires CARB to regulate fuel economy.⁴¹ CARB's greenhouse gas standards are to be "cost-effective," defined as "economical to an owner or operator of a vehicle, taking into account the full life-cycle costs of the vehicle." CARB reasonably interprets that to mean the reduction in "operating expenses" over the average life of the vehicle must exceed the expected increase in vehicle cost.⁴² Virtually all such "operating expenses" are expenditures for fuel. AB 1493 cannot be implemented cost-effectively unless CARB regulates fuel economy.

Congress, too, has long understood the strong relationship between fuel economy standards and carbon dioxide emissions. Indeed, that understanding is reflected in the very statute that preempts state laws and regulations "related to" fuel economy.

As the SAFE Rule explains, EPCA, both as originally enacted and as amended by the 2007 Energy Independence and Security Act, requires EPA to measure and calculate fuel economy through the "same procedures" EPA used for model year 1975 vehicles, or procedures yielding comparable results.⁴³ Under those procedures, "compliance with the CAFE standards is and has always been based on the rates of emission of CO₂, CO, and hydrocarbons from covered vehicles, but primarily on the emission rates of CO₂." Because the amount of those gases emitted "relates directly to the amount of fuel" a vehicle consumes, "EPA can reliably and accurately convert" those emissions into the "miles per gallon achieved by that vehicle."⁴⁴

The SAFE Rule continues: "In recognizing that 1975 test procedures were sufficient to measure fuel economy performance, Congress recognized the direct relationship between CO₂ emissions and fuel economy standards, while in the same piece of legislation expressly

³⁹ U.S. Environmental Protection Agency, National Highway Traffic Safety Administration, California Air Resources Board, Joint Interim Technical Assessment Report: Light-Duty Vehicle Greenhouse Gas Emission Standards and Fuel Economy Standards for Model Years 2017-2025, September 2010, pp. viii-ix, <https://www.epa.gov/sites/production/files/2016-10/documents/ldv-ghg-tar.pdf>

⁴⁰ California Air Resources Board, Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Public Hearing to Consider Adoption of Regulations to Control Greenhouse Gas Emissions from Motor Vehicles, August 6, 2004, pp. 49-69, <https://www.arb.ca.gov/regact/grnhsgas/isor.pdf>

⁴¹ Available at https://en.wikisource.org/wiki/California_AB_1493

⁴² CARB, Staff Report, p. 148

⁴³ 49 U.S.C. 32904(c)

⁴⁴ 83 FR 43234

preempting state standards that are related to fuel economy standards, when Federal fuel economy standards are in place.”⁴⁵

EPCA preempts more than just tailpipe GHG standards. All state standards that “have the effect of regulating CO2 emissions or fuel economy are likewise related to fuel economy standards, and likewise preempted.” Consequently, EPCA also preempts California’s ZEV mandates. The SAFE Rule explains:

Likewise, a state law prohibiting all tailpipe emissions, carbon or otherwise, from some or all vehicles sold in the state, would relate to fuel economy standards and be preempted by EPCA, since the majority of tailpipe emissions consist of CO2. We recognize that this preempts state programs, such as California’s ZEV mandate, that establish requirements that a portion of a vehicle’s fleet sold or purchased consist of vehicles that produce no tailpipe emissions.⁴⁶

c. Central Valley Is Bad Law

California’s apologists are likely to recycle two cases, *Green Mountain Chrysler v. Crombie* (2007)⁴⁷ and *Central Valley Chrysler-Jeep, Inc. v. Goldstene* (2008),⁴⁸ in which federal district courts in Vermont and California ruled that EPCA does not preempt state motor vehicle GHG emission standards. For brevity’s sake, we summarize and develop a few key points in the SAFE Rule’s rebuttal of those decisions, focusing on *Central Valley*, which purports to be the more definitive ruling.

The California Eastern District Court’s decision in *Central Valley* rests on three main claims:

- (1) EPCA’s preemption of state policies “related to” fuel economy standards should be construed narrowly;
- (2) A waiver granted by EPA under Clean Air Act section 209(b) would make California’s greenhouse gas motor vehicle standards “other motor vehicle standards of the [Federal] Government,” hence not subject to EPCA preemption, which applies solely to state and local policies; and,
- (3) EPCA requires NHTSA to “harmonize” its fuel economy standards with “other” federal standards, including any California standards for which EPA issues a CAA section 209(b) waiver.

We now examine those claims.

⁴⁵ 83 FR 43234

⁴⁶ 83 FR 43234

⁴⁷ <https://www.courtlistener.com/opinion/1483620/green-mountain-chrysler-plymouth-dodge-v-crombie/>

⁴⁸ <https://www.courtlistener.com/opinion/2355006/central-valley-chrysler-jeep-inc-v-goldstene/>

Claim 1: The EPCA preemption should be construed narrowly. The court’s argument goes like this. Congress wants federal agencies to respect states’ “historic police powers,” which include regulating air pollutants to protect “public health and welfare.” Consequently, express preemption statutory provisions “should be given a narrow interpretation.” The “narrowest interpretation consistent with the plain language of EPCA’s preemptive provision is that it encompasses only those state regulations that are explicitly aimed at the establishment of fuel economy standards, or that are the de facto equivalent of mileage regulation.” AB 1493 explicitly aims to control greenhouse gases, not fuel economy. The AB 1493 standards are not the de facto equivalent of mileage standards because they also regulate motor vehicle refrigerants, which do not affect fuel consumption. Hence, EPCA does not preempt AB 1493.

That argument fails for several reasons. First, labels do not determine the nature of things. The direct functional relationship between fuel economy and greenhouse gas motor vehicle standards is not affected by the explicit language AB 1493 uses to describe its purposes.

Second, as it happens, precisely because the functional relationship between the two types of standards is close and inherent, proponents routinely tout greenhouse gas standards as a means to reduce oil consumption and CAFE standards as a means to reduce greenhouse gas emissions. For example, in a March 22, 2011 letter to House Energy and Commerce Chairman Fred Upton, California Air Resources Board executive director James Goldstene boasted that combining EPA’s greenhouse gas emission standards with NHTSA’s fuel economy standards would yield 33 percent more fuel savings than NHTSA’s standards alone.⁴⁹

Such circularity of ends and means is a staple of climate politics. Should the government invest in clean tech to reduce emissions, or should it cap or tax emissions to drive investment into clean tech? Most climate campaigners would say “yes.”⁵⁰

Third, the ZEV program explicitly aimed to boost fuel economy until, anticipating EPCA-based litigation, CARB removed “all references to fuel economy or efficiency” in the calculation of advanced technology partial zero-emission vehicle standards.⁵¹

Fourth, while California’s motor vehicle greenhouse gas standards also apply to air conditioner refrigerants based on their global warming potential, such refrigerant emissions represent a small fraction of total motor vehicle greenhouse gas emissions—5.1 percent according to EPA and NHTSA’s 2010 joint rule.⁵² Nearly all the rest, as noted above, is carbon

⁴⁹ The text of Goldstene’s letter is available at <http://www.globalwarming.org/wp-content/uploads/2011/06/CARB-QFR-Goldstene-EC-2011-02-09.pdf>

⁵⁰ Marlo Lewis, “DOE Secretary Stephen Chu’s Convuluted Climate Economics,” MasterResource.Org, November 5, 2009, <https://www.masterresource.org/business-strategy-and-messaging/secy-chus-convoluted-climate-economics/>

⁵¹ 83 FR 43238, citing California Air Resources Board, Fact Sheet, 2003 Zero Emissions Vehicle Program, <https://www.arb.ca.gov/msprog/zevprog/factsheets/2003zevchanges.pdf>

⁵² 75 FR 25424

dioxide from motor fuel combustion, and regulating CO2 emissions inextricably regulates fuel economy. Thus AB 1493 cannot escape preemption by commingling tailpipe CO2 standards with refrigerant standards.

The SAFE Rule is ‘fair and balanced’ on this point. Because greenhouse gas emissions from air conditioner refrigerants “have no relation to fuel economy,” state-level policies targeting such chemicals are “outside the scope of EPCA preemption.” Accordingly, “states can pass laws specifically regulating or even prohibiting such vehicular refrigerant leakage” based on global warming potential, and “EPCA would not preempt such laws, if narrowly drafted so as not to include tailpipe CO2 emissions.”⁵³

Fifth, the court’s claim that EPCA’s preemption language must be interpreted narrowly ignores the plain fact that the EPCA preemption, covering anything “related to” fuel economy standards, is very broad. It is not possible to interpret a *broad* preemption *narrowly* without interpreting it *loosely*, i.e. incorrectly and unlawfully.

Claim 2: California’s GHG standards are federal standards. The court argued as follows. Once EPA grants California a Clean Air Act waiver to adopt its own motor vehicle emission standards, those standards become “other standards of the Government.” The EPCA preemption applies solely to state and local laws or regulations, not federal motor vehicle standards. Hence, the EPCA preemption does not bar California from adopting emission standards related to fuel economy standards once EPA “federalizes” such standards by granting a CAA section 209(b) waiver.

That argument has several flaws. First, it would turn the EPCA preemption into a nullity. No part of the EPCA preemption would survive, not even the weak version contemplated by the court’s “narrow” reading.

To recap, under the court’s narrow interpretation, states may not adopt standards that “are explicitly aimed at the establishment of fuel economy standards, or that are the de facto equivalent of mileage regulation.” But if a 209(b) waiver “federalizes” and thereby automatically exempts California’s standards from EPCA preemption, those standards would still be lawful even if they explicitly aim to boost fuel economy and, lacking air conditioner refrigerant requirements, are just mileage standards by another name.

In short, by the court’s logic, even if AB 1493 were titled the “Boost Fuel Economy Law” and contained only tailpipe CO2 standards, EPA could still negate EPCA preemption just by pronouncing the magic words: “Waiver granted!” As the SAFE Rule observes, “the district court misread EPCA to the point of turning it on its head.”⁵⁴

⁵³ 83 FR 43235

⁵⁴ 83 FR 42336

Second, the court’s argument conflicts with the very nature of preemption. Before California could request a waiver to establish motor vehicle GHG emission standards, the legislature had to enact AB 1493 and CARB had to develop the implementing regulations. EPA can grant a waiver only for legally valid standards—standards not already voided by other federal laws. AB 1493 and the associated rules were invalid under EPCA from the get-go. As the SAFE Rule puts it, “When a state establishes a standard related to fuel economy, it does so in violation of EPCA’s preemption statute and the standard is therefore void *ab initio* [from the beginning].”⁵⁵

The SAFE Rule elaborates:

Federal preemption is rooted in the Supremacy Clause of the U.S. Constitution. Courts have long recognized that the Supremacy Clause of the Constitution gives Congress the power to specifically preempt State law. Broadly speaking, the United States Supreme Court has long held that “an act done in violation of a statutory prohibition is void,” and has specifically noted that such acts are not merely “voidable at the instance of the government,” but void from the outset. The Ninth Circuit stated it more plainly: “Under federal law, an act occurring in violation of a statutory mandate is void *ab initio*.” Discussing the Supremacy Clause, the Supreme Court explicitly explained that, “[i]t is basic to this constitutional command that all conflicting state provisions be without effect.” And at least one Federal Court of Appeals explicitly stated that the Supremacy Clause means “state laws that ‘interfere with, or are contrary to the laws of Congress’ are void *ab initio*.”⁵⁶

In sum, EPA could not authorize California to implement tailpipe GHG standards, because such standards were already “without effect” and “void” before California could apply for a waiver.

Claim 3: EPCA obligates NHTSA to “harmonize” its fuel economy standards with California’s GHG standards. The court’s argument has five main steps:

1. EPCA section 32902(f) states that “When deciding maximum feasible average fuel economy under this section, the Secretary of Transportation shall consider technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy.”
2. “Other” standards of course include EPA tailpipe standards but also (per Claim 2) California standards for which EPA grants a waiver.
3. Although EPCA requires NHTSA to consider other federal standards when setting CAFE standards, the CAA imposes “no corresponding statutory duty” on EPA or CARB to consider CAFE standards when setting motor vehicle emission standards.

⁵⁵ 83 FR 43235

⁵⁶ 83 FR 43235

4. Consequently, when California's and NHTSA's standards conflict, the latter must yield to the former.
5. That is reasonable because EPCA's "overarching goal" is "energy conservation," whereas tailpipe emission standards serve "the more important purpose of safeguarding the public's health and welfare."

The foregoing argument fails for three reasons. First, nothing in the language of either EPCA or the CAA suggests that NHTSA is subordinate to EPA or CARB. Rather, the EPCA language directing NHTSA to "consider" the "effect" of "other" standards "on fuel economy" is chiefly intended to temper CAFE requirements when "other" standards impair vehicle fuel efficiency. The SAFE Rule explains:

There is no hint in the histories of either EPCA or EISA of an intent to give other standards special, much less superior, status under EPCA. The limited concerns and purpose were to ensure that any adverse effects of other standards on fuel economy [are] considered in connection with the fuel economy standards. Those concerns are evident in a 1974 report, entitled *Potential for Motor Vehicle Fuel Economy Improvement*," submitted to Congress by the Department of Transportation and EPA. That report noted that the weight added by safety standards *would* and one set of emission standards *might* temporarily reduce the level of fuel economy achievable. These concerns can also be found in the congressional reports on EPCA.⁵⁷

Congress enacted EPCA in 1975, not long after the federal government began to regulate motor vehicle emissions (1968). There was considerable discussion in those years about the potential effects of emission controls on fuel economy, and EPA addressed the topic in several reports.⁵⁸ In addition to the 1974 report cited above, EPA in 1972 published *Fuel Economy and Emission Control*. The report states that emission controls required to meet federal pollution standards "can have an effect on engine efficiency and, in turn, fuel economy." Based on various empirical tests, EPA estimated that fuel economy losses due to emission controls ranged from 5.3 percent to 9.8 percent for model years 1968 to 1973 motor vehicles, imposing an average loss of 7.75 percent.⁵⁹

Subsequent EPA studies gave a more nuanced assessment. The agency's 1975 report, *Factors Affecting Automotive Fuel Economy*, stated: "While much has been said about the effect

⁵⁷ 83 FR 43237

⁵⁸ "The previous EPA reports [in November 1972 and October 1973] have been studied and commented upon by other government agencies, the Congress, state and local governments, private citizens, fleet operators, motor vehicle manufacturers, and fuel producers. This report is intended for the same broad audience." EPA, *Factors Affecting Automotive Fuel economy* (hereafter *Factors*), September 1975, p. 1, <https://nepis.epa.gov/Exe/ZyPDF.cgi/9100S2LD.PDF?Dockey=9100S2LD.PDF>

⁵⁹ EPA, *Fuel Economy and Emission Control*, November 1972, pp. 4, 10, <https://nepis.epa.gov/Exe/ZyPDF.cgi/9100WW2F.PDF?Dockey=9100WW2F.PDF>

of emission controls on automobile fuel economy, a review of the available control techniques shows that some can improve economy, some can degrade it, and some have no effect.”⁶⁰

The “effect of other standards” language should be read in the context of the two preceding factors EPCA section 32902(f) directs NHTSA to consider. “Technological feasibility” and “economic practicability” may either constrain or facilitate fuel efficiency improvements, and so may “other” federal standards. NHTSA is to be mindful of such potential constraints or synergies. Period. EPCA section 32902(f) does not direct NHTSA to defer to EPA (much less CARB) when prescribing maximum feasible fuel economy standards.

Second, the court set up a rigged contest when it juxtaposed “energy conservation” (EPCA’s goal) with “public health and welfare” (the CAA’s goal). Energy conservation is an instrumental goal, a means, whereas public health and welfare are final goals or ends. An apples-to-apples comparison would compare either energy conservation to emission reduction (the statutes’ respective instrumental goals) or energy security and consumer welfare to public health and welfare (the statutes’ respective final ends). If the court had botched the juxtaposition in reverse, comparing emission reduction to energy security and consumer welfare, EPCA would seem to serve the “more important purpose.”

The Congresses that enacted and amended EPCA viewed fuel economy regulation as a means of protecting the nation’s energy security and consumer welfare. Congress deemed energy conservation vital to the nation’s economic health, political independence, and geopolitical security.⁶¹

Moreover, as NHTSA’s name implies, the agency has a statutory obligation to promote automotive safety.⁶² CAA section 202 repeatedly directs EPA to consider safety when regulating motor vehicle emissions. However, EPA is responsible for ensuring the safety of emission control technologies, not automotive safety in general. Unlike NHTSA, EPA has no statutory responsibility to consider the size-safety tradeoffs inherent in the regulation of automotive fuel economy and tailpipe CO₂ emissions.

In brief, Congress intended fuel economy standards to advance important national interests, and entrusted fuel economy regulation to an agency established to promote consumer safety. The court incorrectly asserted rather than demonstrated that CARB’s standards serve a “more important purpose” than NHTSA’s.

⁶⁰ EPA, Factors Affective Automotive Fuel Economy, EPA-420-R-75-100, September 1975, p. 16, <https://nepis.epa.gov/Exe/ZyPDF.cgi/9100S2LD.PDF?Dockey=9100S2LD.PDF>

⁶¹ Whether or not Congress erred in that judgment is another matter. For a critique of the energy angst underpinning CAFE regulation, see Jerry Taylor and Peter Van Doren, “The Energy Security Obsession,” *The Georgetown Journal of Law and Public Policy*, Summer 2008, Vol. 6, No. 2, https://object.cato.org/sites/cato.org/files/articles/taylor_vandoren_energy_security_obsession.pdf

⁶² The agency, alas, has not always lived up to its name. See Sam Kazman, “Coffee Won’t Kill You, but CAFE Might,” *The Wall Street Journal*, April 4, 2018, <https://cei.org/content/coffee-wont-kill-you-cafe-might>

Third, and most critically, the court’s claim that NHTSA must defer to CARB fails because it conflicts with congressional intent. The district courts acknowledged that the “ultimate touchstone” in preemption cases is “what Congress intended.” Congress clearly intended to preempt state regulation of fuel economy. That intention is thwarted by a waiver that makes CARB a co-equal partner with NHTSA in determining fuel economy standards.

The actual situation is worse than that. In practice, the waiver makes CARB the vanguard agency in fuel economy regulation—a complete inversion of what Congress intended.

Under the One National Program, California has the whip hand in negotiations with EPA and NHTSA. That is because the waiver empowers California and its allies to ruin the auto industry unless federal policymakers submit to CARB’s demands.

Here’s how this coercive strategy works.⁶³ Under CAA section 177, once EPA grants California a section 209(b) waiver to adopt separate vehicle emission standards, other states may opt into the California program. That is a manageable inconvenience when California sets conventional air pollutant standards, which apply to each vehicle sold. At most there are just two national fleets for automakers to manage—federal and “California.”

However, when the standards are for greenhouse gases, automakers face a potential administrative nightmare. Like the CAFE standards they mimic, tailpipe GHG standards apply to *fleets or segments of fleets on average*. Each automaker typically sells a different mix of vehicles in each state because consumer preferences differ from one state to the next. To achieve the same *average* GHG/fuel economy in two different states, automakers would have to reshuffle the mix of vehicles delivered for sale in those states.

If all states were to opt into the California program, each automaker would have to continually adjust its production and sales to achieve the same fleet average CO2/mileage standards in 50 separate markets—exactly the sort of chaos Congress enacted the EPCA preemption to prevent.

The prospect of market fragmentation terrified the auto industry when EPA Administrator Lisa Jackson decided to reconsider⁶⁴ her predecessor Stephen Johnson’s denial⁶⁵ of California’s AB 1493 waiver request. Having thus imperiled the auto industry, the Obama administration made automakers an offer they could not refuse.

⁶³ National Automobile Dealers Association, *Patchwork Proven: Why a Single National Fuel Economy Standard Is Better for America than a Patchwork of State Regulations*, January 2009, <https://www.nada.org/WorkArea/DownloadAsset.aspx?id=21474838588>

⁶⁴ EPA, California State Motor Vehicle Pollution Control Standards; Greenhouse Gas Regulations; Reconsideration of Previous Denial of a Waiver of Preemption, 74 FR 7040-42, February 12, 2009, <https://www.gpo.gov/fdsys/pkg/FR-2009-02-12/pdf/E9-2913.pdf>

⁶⁵ EPA, California State Motor Vehicle Pollution Control Standards; Notice of Decision Denying a Waiver of Clean Air Act Preemption for California’s 2009 and Subsequent Model Year Greenhouse Gas Emission Standards for New Motor Vehicles; 73 FR 12156-69, March 6, 2008, <https://www.gpo.gov/fdsys/pkg/FR-2008-03-06/pdf/E8-4350.pdf>

In closed-door, “put nothing in writing, ever” negotiations run by Obama climate czar Carol Browner,⁶⁶ California and its allied states agreed to deem compliance with EPA’s greenhouse gas standards as compliance with their own. As in the traditional CAFE program, compliance would be based on national sales rather than state-by-state sales. However, in return for averting a fuel economy “patchwork,” automakers had to surrender basic legal rights.

Specifically, auto companies and their trade associations pledged “not to contest forthcoming CAFE and GHG standards for MYs 2012-2016; not to challenge any grant of a CAA preemption waiver for California’s GHG standards for certain model years, and to stay and then dismiss all pending litigation challenging California’s regulation of GHG emissions, including litigation concerning EPCA preemption of state GHG standards.”⁶⁷

Circumstantial evidence also suggests that Browner conditioned the availability of bailout money on automakers’ support for the new “National Program” jointly administered by EPA, NHTSA, and CARB.⁶⁸

Dubbed the “Historic Agreement” by President Obama,⁶⁹ the deal suspended the threat of market balkanization—but did not abolish it. California and its allies can reactivate the patchwork peril whenever they decide the One Vehicle Program no longer serves their interests. The specter of market fragmentation has haunted all subsequent fuel economy deliberations, including the current proceeding.

Note, too, that California’s progressive political culture rewards CARB for pushing the fuel economy envelope. At the same time, the state’s comparative lack of automobile manufacturing and auto workers ensures that Sacramento politicians face no blowback at the polls for indulging in fuel economy zealotry.⁷⁰

Consequently, in negotiations over the future of the National Vehicle Program, California is the proverbial 500 pound gorilla. CARB can imperil businesses and jobs beyond its borders just by hinting that it will “de-couple” from EPA and NHTSA should any future administration dare to relax the Obama administration standards. That, of course, is the situation we have today.

⁶⁶ Colin Sullivan, “Vow of silence key to White House-Calif. fuel economy talks,” *New York Times*, May 20, 2009, <https://archive.nytimes.com/www.nytimes.com/gwire/2009/05/20/20greenwire-vow-of-silence-key-to-white-house-calif-fuel-e-12208.html>

⁶⁷ 83 FR 43233, citing 75 FR 35328

⁶⁸ House Committee on Government Oversight and Reform, Staff Report, *A Dismissal of Safety, Choice, and Cost: The Obama Administration’s New Auto Regulations*, August 10, 2012, <http://oversight.house.gov/wp-content/uploads/2012/08/CAFE-Report-8-10-12-FINAL.pdf>

⁶⁹ The White House, Remarks by the President on national fuel efficiency standards, May 19, 2009, <https://obamawhitehouse.archives.gov/the-press-office/remarks-president-national-fuel-efficiency-standards>

⁷⁰ California is not among the nation’s top ten auto manufacturing states: https://www.mlive.com/auto/index.ssf/2015/03/these_are_the_top_10_states_fo.html

CARB filed a preemptive lawsuit in May 2018, months before EPA and NHTSA proposed any specific revisions to the Obama rules,⁷¹ and as early as March threatened to enforce its own separate standards. CARB warned that vehicles sold in California would no longer be “deemed to comply” with the state’s greenhouse gas/fuel economy standards unless those vehicles also meet the Obama administration standards.⁷² On September 28, CARB voted to retract the deemed-to-comply policy memorialized in EPA and NHTSA’s joint 2010 rulemaking,⁷³ and invited its 12 state allies to follow suit.⁷⁴

This storm cloud has a silver lining. CARB has exposed for all to see that the One Vehicle Program was never more than an uneasy truce wired to fall apart unless California gets its way. “Harmony” exists only as long as the feds dance to CARB’s tune.

The solution is to enforce the EPCA preemption and revoke the CAA waivers granted to California in 2013. That will end California’s de facto reign over fuel economy policy, which upends the statutory scheme Congress created.

V. EPA Should Withdraw the January 2013 Waiver for California’s Motor Vehicle Standards that Regulate Tailpipe Carbon Dioxide Emissions

a. Quick Background

CAA section 209(a) prohibits states, and subdivisions thereof, from adopting or enforcing motor vehicle emission standards. However, section 209(b) directs EPA to grant California a waiver of federal preemption if the state determines that its “standards will be, in the aggregate, at least as protective of public health and welfare as the federal standards.” On the other hand, “No such waiver shall be granted if the Administrator finds” that:

1. California’s protectiveness determination is “arbitrary and capricious”;
2. The state “does not need such standards to meet compelling and extraordinary conditions”; or
3. The state standards and accompanying enforcement actions are “not consistent” with CAA section 202, the provision authorizing EPA regulation of motor vehicle emissions.

⁷¹ Marlo Lewis, “California’s Empty Suit,” The Hill, May 6, 2018, <https://cei.org/content/fuel-economy-californias-empty-suit>

⁷² Bloomberg, “As Trump begins dismantling auto efficiency rules, California is doubling down on its own, sources say,” Los Angeles Times, March 27, 2018, <http://www.latimes.com/business/la-fi-hy-epa-california-fuel-economy-20180327-story.html>

⁷³ 75 FR 35328

⁷⁴ California Air Resources Board, “Statement of CARB Chair on action to preserve California vehicle standards,” September 28, 2018, <https://ww2.arb.ca.gov/index.php/news/statement-carb-chair-action-preserve-california-vehicle-standards>

California's "compelling and extraordinary conditions" appear to refer to the state's peculiar topography, meteorology, and large number of vehicles, which make California's air pollution problems more severe than those of most other states.

In the SAFE Rule, EPA proposes to yank the January 9, 2013 waiver for California's Advanced Clean Car (ACC) program, Zero Emissions Vehicle (ZEV) mandate, and Greenhouse Gas (GHG) standards applicable to model years 2021-2025. EPA proposes to do so on four separate grounds:

1. California's GHG and ZEV standards are already preempted under EPCA;
2. California does not need "such standards" to meet "compelling and extraordinary conditions";
3. California's standards are "inconsistent" with CAA section 202's technology and cost requirements; and,
4. Other states lack a valid statutory purpose for adopting California's GHG standards under CAA section 177.

We agree with those four reasons and comment briefly on each.

2. California's GHG and ZEV standards are already preempted under EPCA.

EPA argues that "state standards preempted under EPCA cannot be afforded a valid waiver of preemption under CAA 209(b)" even though EPA has "historically declined to consider as part of the waiver process whether California standards are constitutional or otherwise legal under other Federal Statutes apart from the Clean Air Act."⁷⁵

We concur. As noted above, EPCA automatically voided AB 1493, turning the associated GHG standards into legal phantoms before California could request, or EPA grant, a CAA section 209(b) waiver of federal preemption.

In addition, the Constitution directs the President to "take care that the laws be faithfully executed." That means the President must faithfully execute EPCA. The EPA administrator, being a subordinate executive officer appointed by the President and serving at his pleasure, is similarly bound. The CAA does not authorize the administrator to override other statutes or nullify the President's duty to execute other laws.

- a. California does not need "such standards" to meet "compelling and extraordinary conditions."*

"EPA proposes to find that California does not need its GHG and ZEV standards to meet compelling and extraordinary conditions because those standards address environmental problems that are not particular or unique to California, that are not caused by emissions or other

⁷⁵ 83 FR 42340

factors particular or unique to California, and for which the standards will not provide any remedy particular or unique to California.”⁷⁶

We concur. The statute does not define California’s “compelling and extraordinary conditions.” The phrase apparently refers to the state’s geography, meteorology, and large number of vehicles, which cause severe local and regional air pollution—an interpretation supported by extensive legislative history.⁷⁷ Section 209(b) enables California to tailor motor vehicle emission standards to address its particular air quality challenges. However, the fossil-fuel greenhouse effect and its potential impacts have no particular nexus to California.

GHG concentrations are essentially uniform throughout the globe, and are not affected by California’s geography and meteorology. California’s vehicles emit GHGs, but so do mobile and stationary sources throughout the world. The resulting “global pool” of GHG emissions is not any more concentrated in California than anywhere else.⁷⁸

Even if one assumes “compelling and extraordinary” refer not to the fossil-fuel greenhouse effect itself but its potential impacts, such as heat waves, drought, and coastal flooding, California’s vulnerability is not “sufficiently different” from the rest of the nation to merit waiving federal preemption of state emission standards.⁷⁹ Thus, neither the “causes” nor the “effects” of the fossil-fuel greenhouse effect are “specific” to California.⁸⁰ Or, as we at CEI are wont to say, “They call it global warming, not California warming.”

Furthermore, unlike California emission standards for conventional air pollutants, California’s GHG standards would not ameliorate any environmental problem in the state. Compared to the GHG standards EPA proposes in the SAFE Rule, California’s standards would decrease carbon dioxide concentrations by 0.65 parts per million and global average surface temperature by 0.003°C in 2100.⁸¹ Three one-thousands of a degree Celsius is 27 times smaller than the 0.08°C margin of error for measuring annual changes in global average temperature.⁸² The impact of the California standards on global warming would be undetectable under current scientific methods.

More importantly, an unverifiable decrease of 0.003°C in global average temperature 82 years from now would have no discernible impacts on weather patterns, coastal flooding, polar

⁷⁶ 83 FR 43240

⁷⁷ 83 FR 43247

⁷⁸ 83 FR 43246

⁷⁹ 83 FR 43247-49

⁸⁰ 83 FR 43245

⁸¹ NHTSA, Draft Environmental Impact Statement, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021-2026 Passenger Cars and Light Trucks, Docket No. NHTSA-2017-0069, p. 5-24, July 2018, https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/ld_cafe_my2021-26_deis_0.pdf

⁸² NOAA, National Centers for Environmental Information, Global Temperature Uncertainty, <https://www.ncdc.noaa.gov/monitoring-references/faq/global-precision.php>

bear populations, or any other environmental condition people actually care about. The climate benefits in the policy-relevant future—the next 10-30 years—would be even more miniscule.

Whatever one’s views on climate change, California does not “need” separate motor vehicle standards useful only for virtue-signaling and bureaucratic empire building. As the SAFE Rule more delicately puts it, “a problem does not cause you to ‘need’ something that would not meaningfully address the problem.”⁸³

b. California’s GHG and ZEV standards are “inconsistent” with CAA section 202’s technology and cost requirements.

EPA additionally “proposes to find that California’s GHG and ZEV standards are inconsistent with section 202(a) because they are technologically infeasible in that they provide insufficient lead time to permit the development of necessary technology, giving appropriate consideration to compliance costs.”⁸⁴ We concur.

Under CAA section 202(a)(2), “motor vehicle emission standards shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period.”

The economic and technological issues associated with California’s GHG and ZEV standards are highly technical. Fortunately, the SAFE Rule frames the dispute in a way consumers can understand.

In 2013, when EPA signed off on California’s ACC program, the agency acknowledged: “CARB estimates that by 2025 the incremental cost of a ZEV or TZEV [plug-in hybrid] is expected to rapidly decline, yet remain approximately \$10,000 (high end estimate) higher than a conventional vehicle. The Manufacturers note that CARB’s analysis provides an incremental cost of \$12,900 in MY 2020.”⁸⁵

EPA nonetheless concluded that “such cost is not excessive nor does it represent an infeasible standard” because it “does not represent a ‘doubling or tripling’ of the vehicle cost.”⁸⁶

EPA has since changed its mind. The SAFE Rule comments:

⁸³ 83 FR 43248

⁸⁴ 83 FR 43240. We correct the typo in the sentences quoted, changing “sufficient” to “insufficient.”

⁸⁵ California State Motor Vehicle Pollution Control Standards; Notice of Decision Granting a Waiver of Clean Air Act Preemption for California’s Advanced Clean Car Program and a Within the Scope Confirmation for California’s Zero Emission Vehicle Amendments for 2017 and Earlier Model Years, 78 FR 2142, January 9, 2013, <https://www.gpo.gov/fdsys/pkg/FR-2013-01-09/html/2013-00181.htm>

⁸⁶ 83 FR 43251, citing EPA, California State Motor Vehicle Pollution Control Standards; Notice of Decision Granting a Waiver of Clean Air Act Preemption for California’s Advanced Clean Car Program and a Within the Scope Confirmation for California’s Zero Emission Vehicle Amendments for 2017 and Earlier Model Years, 78 FR 2142, January 9, 2013, <https://www.gpo.gov/fdsys/pkg/FR-2013-01-09/html/2013-00181.htm>

EPA now believes that its prior view that a doubling or tripling of vehicle cost constitutes an excessive cost or represents an infeasible standard was incorrect. Such a bright line (and extreme) test is inappropriate. Instead, the agency should holistically consider whether technology control costs are infeasible by considering the availability of the technology, the reasonableness of costs associated with adopting it within the required lead time, and consumer acceptance.⁸⁷

As the SAFE Rule's Overview points out, fuel economy and GHG mandates are already pricing middle-income families out of the market for new motor vehicles:

Along with these gains [in fuel economy over the past decade], there have also been tremendous increases in vehicle prices, as new vehicles become increasingly unaffordable—with the average new vehicle transaction price recently exceeding \$36,000—up by more than \$3,000 since 2014 alone. In fact, a recent independent study indicated that the average new car price is unaffordable to median-income families in every metropolitan region in the United States except one: Washington, DC.”⁸⁸

As new-car prices rise, consumers buy more used cars or hold on to their older vehicles longer, which slows down improvements in auto safety and environmental performance:

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.⁸⁹

EPA reasonably judges that California's ACC standards rely on an extreme and inappropriate view of what constitutes an excessive cost.

c. Other states lack a valid statutory purpose for adopting California's GHG standards under CAA section 177.

CAA section 177 authorizes other states to opt into California's motor vehicle emissions program. Today, 12 states and the District of Columbia have adopted the California standards,

⁸⁷ 83 FR 43251

⁸⁸ 83 FR 42993-94

⁸⁹ 83 FR 42993

including nine that also participate in the mandate to increase sales of zero-emission vehicles.⁹⁰ Collectively, the “California” states represent 40 percent of the automobile market, which gives politicians and bureaucrats in Sacramento substantial leverage over the auto industry.⁹¹

“EPA proposes to determine that CAA section 177 does not apply to CARB’s GHG standards.”⁹² We concur. Section 177 is titled “New motor vehicle emission standards in nonattainment areas” and applies solely to states with “approved” plans (SIPs) to bring nonattainment areas into attainment with national ambient air quality standards (NAAQS). The provision’s clear purpose is to facilitate nonattainment states’ efforts to clean the air by adopting California’s stricter emission standards for NAAQS-regulated (“criteria”) air pollutants.

As EPA argues, it would be “illogical to require approved nonattainment SIP provisions as a predicate for allowing States to adopt California’s standards if states could use this authority to adopt California standards that addressed environmental problems other than nonattainment of criteria pollutant standards.”⁹³ More simply stated, there are no NAAQS for carbon dioxide and other greenhouse gases, so the 177 option has no rational application to California’s motor vehicle GHG standards.

As EPA also points out, Congress placed section 177 in title I part D, which deals with plan requirements for nonattainment areas, rather than title II, which contains the California waiver provision. Thus, it “would make no sense if [section 177] functioned as a waiver applicable to all subjects, as does the California-focused provision under section 209(b), rather than as a provision specifically targeting criteria pollutants and nonattainment areas, as does the rest of title I part D.” In short, “the text, context, and purpose of section 177 suggest” that the provision is limited to motor vehicle standards “designed to control criteria pollutants to address NAAQS nonattainment.”⁹⁴

3. Rebutting the Obvious Objection

In her rejection of Bush EPA Administrator Stephen Johnson’s denial of the waiver, Obama EPA Administrator Lisa Jackson argued that Johnson asked the wrong question. He asked whether California needs the specific standards for which it requested a waiver, whereas the test in CAA section 209(b) is simply “whether California needs a separate motor vehicle emissions program.”⁹⁵ That question, Jackson suggested, answers itself. California will always need a separate program until such time as the air is so clean the state no longer applies for

⁹⁰ Stephen Edlestein, “Which states follow California’s emission and zero-emission vehicle rules?” *Green Car Reports*, May 7, 2017, https://www.greencarreports.com/news/1109217_which-states-follow-californias-emission-and-zero-emission-vehicle-rules

⁹¹ Ingrid Lobet, “EPA pick shows little support for California pollution authority,” January 19, 2017, <https://inewssource.org/2017/01/19/pruitt-epa-california-waiver/>

⁹² 83 FR 43253

⁹³ 83 FR 43253

⁹⁴ 83 FR 43253

⁹⁵ 74 FR 32759

waivers. California and its allies will likely tout Jackson’s argument about the proper scope of section 209(b) review in the current rulemaking.

Johnson acknowledged that in all previous waiver requests, EPA only asked whether California continued to need its own separate program, not whether it needed the particular standard at issue. However, he argued, there was an obvious justification for the perfunctory character of EPA’s “need” review in the earlier waiver requests. Congress obviously wanted California to be able to address local and regional air pollution associated with the state’s particular circumstances. In contrast, GHG standards do not address California-specific conditions.

The statutory language is vague enough to support Johnson’s decision. Jackson assumed that the phrase “such State standards” refers to California’s standards “in the aggregate”—that is, the state’s vehicle emissions program as a whole. But it could also refer to the kinds or types of standards for which specific waivers are requested. Indeed, why should waivers that are not related to California’s “compelling and extraordinary conditions” qualify for the same cursory review as waivers that are?

The phrase “such State standards” is ambiguous. As the SAFE Rule observes, “the phrase can reasonably be considered as referring either to the standards in the entire California program, the program for similar vehicles, or the particular standards for which California is requesting a waiver under the pending request.”⁹⁶ Certainly as a practical matter, EPA considers waiver requests “as it receives them, individually, not in the aggregate with all standards for which it has previously granted waivers.”⁹⁷

Jackson’s preferred reading bizarrely implies that the first waiver approval forever ties EPA’s hands. The SAFE Rule explains: “Once EPA had determined that California needed its very first set of submitted standards to meet extraordinary and compelling conditions, it is unclear that EPA would ever have the discretion to determine that California did not need any subsequent standards for which it sought a successive waiver—unless EPA is authorized to consider a later submission separate from its earlier finding.”⁹⁸

If Congress had intended to bar EPA from denying a waiver request for any particular standard or set of standards, it could easily have said so. As the U.S. Chamber of Commerce argued in its reply brief submitted to the D.C. Circuit Court of Appeals in October 2010:

But if Congress intended to give California free rein to add to its program any standard it chooses, subject only to a general assessment of the state’s continuing need for that “program,” the statute would look radically different. Rather than requiring Section 209(b)(1)(B) review each time California adopts a new “standard,” the statute would

⁹⁶ 83 FR 43246

⁹⁷ 83 FR 43246

⁹⁸ 83 FR 43246

limit EPA’s role to periodic reviews of California’s “need” for a “program” “as a whole,” with EPA issuing a categorical preemption waiver at the completion of each review. Likewise, if it were Congress’s intent to permit California-specific standards that have nothing to do with California-specific “conditions,” Congress would have omitted the requirement for “compelling and extraordinary conditions”—a term that plainly requires a comparison to conditions in other states or to the nation as a whole.⁹⁹

Ironically, thanks to CARB’s reboot of the California motor vehicle emissions program, EPA need not re-litigate the July 2009 GHG waiver or resolve the long-running debate on the scope of section 209(b) review. To overturn California’s GHG standards and ZEV mandate, all EPA needs to do is revoke the January 2013 waiver for California’s Advanced Clean Car (ACC) program, which encompasses CARB’s ZEV, low-emission vehicles (LEV), and GHG regulations for model year 2015-2025.¹⁰⁰

As the SAFE Rule explains, the ACC program “could be considered as the entire new motor vehicle program for California given that it is a single coordinated program comprising a suite of standards that California intended to be a cohesive program for addressing emissions from a wide variety of vehicles, specifically, new passenger cars, light duty trucks, medium passenger vehicles, and certain heavy duty vehicles.”¹⁰¹

Thus, even if we assume that EPA’s authority is limited to reviewing California’s “need” for a “separate” vehicle emissions program, CAA section 209(b) would allow EPA to review the ACC program as a single program that includes ZEV and GHG regulations.¹⁰²

This would not impede CARB’s efforts to address California-specific air pollution problems. EPA proposes to withdraw the ACC waiver “on a granular level,” leaving intact California’s LEV III standards for criteria air pollutants.¹⁰³ CARB’s waiver request for the ACC program “noted that there was no criteria emissions benefit in terms of vehicle (tank-to-wheel—TTW) emissions because its LEV III criteria pollutant fleet standard was responsible for those emission reductions.”¹⁰⁴

⁹⁹ Chamber of Commerce of the United States of America, et al., Petitioners v. U.S. Environmental Protection Agency, et al., Respondents, On Petition of Review of an Order of the U.S. Environmental Protection Agency, No. 09-1237, October 15, 2010, <https://www.chamberlitigation.com/sites/default/files/cases/files/2009/Chamber%20of%20Commerce%2C%20et%20al.%20v.%20EPA%20%28California%20Waiver%29%20%28Reply%20Brief%29.pdf>

¹⁰⁰ 83 FR 43241-42

¹⁰¹ 83 FR 43246

¹⁰² 83 FR 43248

¹⁰³ 83 FR 43243

¹⁰⁴ 83 FR 43242

VI. Conclusion

For the foregoing reasons, the agency should consider lowering its proposed CAFE standard and/or freezing the CAFE standard at an earlier date. With respect to preempting state motor vehicle emission standards “related to” fuel economy and revoking California’s ZEV mandate and GHG standards, the agencies’ actions are appropriate and consistent with law.

Sincerely,

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Attachment

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Will the Trump Fuel Economy Reform Proposal Create Deadly Air Pollution?

By Steve Milloy*

The Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA) have proposed to partially roll back the corporate average fuel economy (CAFE) standards issued in 2012.¹ The proposal, called the Safe Affordable Fuel Efficient (SAFE) Vehicles Rule, is partly justified on the basis that it will reduce traffic fatalities by about 1,000 deaths per year or about 12,000 deaths in total by model year 2029.

Opponents of SAFE are claiming that the proposal's lives-saved claim should be offset by deaths resulting from the increased emissions of allegedly deadly air pollutants associated with the rollback of mileage standards.

One such critic, William Schlesinger, a member of the EPA's Science Advisory Board and the former dean of Duke University's Nicholas School of the Environment, said any rollback should account for premature deaths from air pollution, along with traffic fatality numbers. "The science is clear that air pollution kills people, particularly particulates," said Schlesinger. "You would have to estimate what a fleet of nationwide heavier vehicles would mean in terms of mileage or heavy pollution, and do the same for lighter vehicles."²

The basic claim put forward by SAFE critics is that lower fuel economy standards will result in more tailpipe emissions of particulate matter (PM) and that these PM emissions will kill many more people than the number of lives saved by SAFE's estimated reduction in traffic fatalities. Is this claim valid?

What is PM? PM is soot and dust in outdoor air. There are many sources of PM, both natural and man-made. Natural sources include volcanic eruptions, forest fires, dry or desert areas, plants and trees, and molds. Man-made sources include smokestacks, tailpipes, chimneys, barbecues, smoking—basically any activity that produces smoke and soot.

PM comes in different sizes and different chemical compositions. That is, pollen is different than tobacco smoke, which is different than tail pipe emissions. This variation, or "speciation," in PM found in the environment defies easy discernment and classification. As a result, various types of particles are all lumped together as under the general term, PM.

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Under the Clean Air Act, the EPA is tasked with setting, monitoring and enforcing a national standard for ambient PM (i.e., PM in outdoor air). As ambient PM levels have declined over the decades, the agency has turned to regulating smaller and smaller sizes of PM.

When the EPA began regulating PM in 1971, the agency's focus was on relatively large PM, 25 to 45 microns (millionths of a meter) in diameter. Having substantially cleaned large particulate matter from the air by the mid-1980s, the agency then turned to reducing PM on the order of 10 microns in diameter (called "PM₁₀"). Having gotten that problem in hand by the early 1990s, the EPA then turned its focus to reducing PM on the order of 2.5 microns in diameter, about one-twentieth the width of a human hair (called "fine particulate matter" or "PM_{2.5}").

As a result, over the past 20 years, the EPA has turned PM_{2.5} into its main regulatory hammer for promulgating air quality and smokestack/tailpipe-related emissions rules.

The EPA's aggressive campaign against PM is premised on the notion that it is an unusually dangerous pollutant in need of the strictest regulation. However, as shown below, that notion lacks any basis in science.

Claim: PM kills. A typical cost-benefit analyst charged with weighing this claim would accept at face value the notion that PM kills, estimate by how much SAFE would increase emissions of PM and then estimate how many people would die from causes related to that increased level of PM in outdoor air. Then estimated PM deaths would be directly compared with estimated traffic fatality deaths avoided. While that seems like a reasonable analysis to undertake, it has a built-in assumption that is without a basis in science.

We know that traffic fatalities actually occur in the real world and we know that, on a population level, more driving increases the number of fatalities. On October 6, 2017, the National Highway Traffic Safety Administration released fatal traffic crash data for calendar year 2016. The data, was collected from all 50 states and the District of Columbia, indicated that 37,461 lives were lost on U.S. roads in 2016, an increase of 5.6 percent from 2015. The NHTSA release also noted: "The number of vehicle miles traveled on U.S. roads in 2016 increased by 2.2 percent, and resulted in a fatality rate of 1.18 deaths per 100 million VMT – a 2.6-percent increase from the previous year."³

These traffic deaths are real. No one disputes that they happen. But can the same be said for the claim that PM in outdoor air kills people? What follows is an examination of that question.⁴

Deaths related to air pollution are associated with three major pollution incidents during the 20th century, discussed in detail below. These incidents prompted scientific research into the precise agent or agents in the ambient air responsible for the deaths. Particulate matter was one of the agents under consideration. But as late as the 1980s, PM had not been singled out as a culprit.⁵ Some researchers had hypothesized that perhaps some combination of acidic gases or aerosols and PM could be lethal under some circumstances to some people. But

because of data shortcomings and methodological weaknesses, the EPA could not draw definitive conclusions into the early 1990s. Then the dynamic at the agency changed.

In December 1993, Harvard researchers published an EPA-funded study in the *New England Journal of Medicine* reporting that PM_{2.5} was statistically correlated with premature deaths. Prepared for the release of what is now known as the “Six City” study, the EPA was able to juice media coverage upon the study’s publication by estimating that ambient PM from tailpipe and smokestack emissions kill 50,000 to 60,000 people per year.⁶

Fifteen months later, in March 1995, the principal authors of the Six City study published a much larger EPA-funded study that also reported that PM_{2.5} was statistically correlated with premature death.⁷ It also received considerable media coverage. For instance, a front-page *Arizona Republic* headline for what is now known as the “Pope” study, after lead author Brigham Young University economics professor C. Arden Pope III, emphasized the mutually confirmatory nature of the two studies—“Particulate pollution’s lethal risk: Study affirms link to early deaths.”⁸

Armed with these two studies, in July 1997 the EPA proceeded to issue its first-ever air quality standards for PM_{2.5}. The agency estimated that this rule would prevent an estimated 15,000 premature deaths per year.⁹ Over the next 14 years, EPA staff and EPA-funded researchers would work to bolster their notion that PM_{2.5} was not only a killer, but a killer demanding the severest regulation.

By 2004, the EPA had concluded that inhaling PM_{2.5} in outdoor air could cause death either within hours or after decades of inhalation and that the elderly and sick were most or particularly vulnerable to the effect of PM_{2.5}.¹⁰ By 2009, the EPA concluded that any inhalation of PM_{2.5} could cause death.¹¹ Taken together, these two conclusions suggested that any level of PM_{2.5} can kill within hours of inhalation—which essentially declared PM_{2.5} the most toxic substance known to man.

These points were emphasized during the September 2011 congressional testimony of then-EPA Administrator Lisa Jackson. When asked about the nature of the health effects caused by PM_{2.5} by Rep. Ed Markey (D-Mass.), Jackson replied:

Particulate matter causes premature deaths. It’s doesn’t make you sick. It is directly causal to dying sooner than you should.

Further queried by Rep. Markey about the scope of the risk to public health, she replied:

If we could reduce particulate matter to levels that are healthy, we would have an identical impact to finding a cure for cancer.¹²

At the time of Jackson’s testimony, the American Cancer Society had estimated that cancer caused about 570,000 deaths per year.¹³ So she was pegging the death toll from PM_{2.5} at a similar level to that of cancer, about one in five deaths in the U.S. annually.

Does PM kill Anyone? Advocates of the notion that ambient PM causes deaths, including the EPA, claim that “thousands of studies” support their position.¹⁴ Yet, the claim of “thousands of studies” is merely a rhetorical device to deter lay readers from questioning the alleged link between PM and excess deaths. Undeterred, we will examine the purported link between PM and death by the available lines of evidence:

1. Studies of human populations (epidemiology);
2. Clinical studies of humans (human experiments);
3. Animal studies; and
4. Real-world experiences.¹⁵

Epidemiologic Studies of Human Populations. Epidemiology is the statistical study of disease patterns in human populations. The aforementioned Six City and Pope studies are both epidemiologic studies. Those two studies and their ongoing progeny are the two lines of epidemiologic studies on which the EPA relies to this day as the main support for the claim that PM kills. Nevertheless, these studies are highly controversial, to say the least.

Both studies purport to statistically correlate exposure to PM_{2.5} with premature death, defined as dying sooner than one otherwise would have without inhalation of PM_{2.5}. There are two major problems with this assumption. First, statistical correlation does not establish causation. Second, the studies’ statistical correlations are very weak and not substantially different from correlations of zero.¹⁶ The Six City and Pope studies’ results are not meaningfully different from those of previous epidemiologic studies that had failed to lead the EPA to the conclusion that PM caused death.

Skeptical of the claims of the Six City study, in 1994 the EPA’s board of independent science advisors, the Clean Air Scientific Advisory Committee (CASAC), asked the EPA, which funded the study, to provide to CASAC the study’s raw data for the purposes of attempting to replicate the results. This is a standard procedure in science, but the EPA never even responded to CASAC’s request.

Then in 1996, about six months before the EPA proposed to regulate PM_{2.5} for the first time, CASAC completed its review of the agency’s summary of the PM science. CASAC concluded there was insufficient evidence to support the claim that PM_{2.5} was associated with death.¹⁷ But the EPA ignored CASAC and moved on to propose PM_{2.5} rules. After the EPA proposed its PM_{2.5} rules, Congress asked the EPA to provide it the data underlying the Six City and Pope studies for purposes of independent replication of study results.¹⁸ The agency refused to provide the data and, in July 1997, finalized its rules for PM_{2.5}.

This “secret science” controversy went dormant until about 2011, when Congress again began asking the EPA for the raw data underlying the Six City and Pope studies. An unresponsive EPA drove Congress to subpoena it for the data in 2013.¹⁹ The EPA ignored the subpoena. In that Congress, and the next two Congresses, the House passed bills barring the agency from relying on secret science—like that underlying the Six City and Pope studies—as justification for taking regulatory action. But the full Senate never took up any of the secret science bills. The failure of House efforts to ban secret science led to the EPA

science transparency proposal in April 2018, which, if finalized as proposed, would ensure that, over time, more of the data and models underlying EPA's regulatory science are available for independent validation.

Unsurprisingly, the epidemiology in the Six City and Pope studies remains controversial. The “secret science” controversy cannot be resolved as long as the EPA continues to refuse to make the data at issue available to independent scientists who could attempt to replicate the claims made in the Six City and Pope studies.

This is especially important given that there are a number of epidemiology studies that report or indicate no association between PM and death. Some recent studies include:

- **Enstrom reanalysis of the Pope study.** Former University of California, Los Angeles epidemiologist James E. Enstrom reanalyzed the Pope study with improved exposure data and reported no association between PM_{2.5} and death.²⁰
- **California study.** A team including University of North Carolina statistician Richard Smith and S. Stanley Young of the National Institute of Statistical Sciences, who are both now members of the EPA's Science Advisory Board, reported no association between PM_{2.5} and death in an analysis of virtually every death—more than 2 million—that occurred in California between 2000-2012.²¹
- **Cox “natural experiment” study.** Reduction in PM_{2.5} levels should be associated with reduced death rates. But Anthony Cox, now chairman of the EPA's CASAC, reported that, although PM_{2.5} levels declined 30 percent in the U.S., no associated decline in death rates was observed.²²

Reasons for the large number of published research linking PM_{2.5} with death include (1) publication bias and (2) immense government funding, in excess of \$580 million from EPA alone, for PM_{2.5} researchers.²³ The number of studies on one side of a scientific debate is not an indication of the validity of that point of view.

Moreover, in litigation with this author over its PM_{2.5} clinical research program involving humans, the EPA admitted to the federal court that the PM_{2.5} epidemiology studies, because of their exclusively statistical nature, prove nothing by themselves. The EPA told the court it was conducting the human experiments because:

Epidemiologic studies do not generally provide evidence of direct causation.²⁴

The purpose of the human experiments, according to the EPA, was to develop a medical or biological explanation to support the merely statistical, and controversial results of the PM_{2.5} epidemiology studies.

EPA Clinical Studies of Humans. For more than 20 years, the federal government has conducted clinical studies in which humans are exposed to PM_{2.5} to see the effect of exposures on human subjects. The EPA has a facility at the University of North Carolina

(UNC) School of Medicine, where it conducts such research. Universities around the country have also received EPA grants to conduct similar research. In these studies, humans—who are often elderly or afflicted with heart disease, asthma, diabetes, or a combination of these—are exposed in a controlled chamber to very high levels of PM_{2.5}, as much as 20 times the national PM_{2.5} standard, for up to two hours at a time.²⁵

Keeping in mind the EPA's claims that any inhalation of PM_{2.5} can cause death within hours, and that the elderly and sick are particularly vulnerable to the dangers of inhaling PM_{2.5}, these experiments raise obvious ethical and legal difficulties, which will not be discussed here. However, it is worth noting that in the legally mandated disclosure forms submitted to the UNC institutional review board responsible for reviewing the experiments, the EPA never disclosed that it had already taken the position that any exposure to PM_{2.5} could cause death within hours and that the elderly and sick were particularly vulnerable.²⁶

Over the years, the EPA has experimented on over 6,000 human subjects with a variety of air pollutants and mixtures thereof. *Not a single human has been harmed, much less killed, by exposure to very high levels of PM_{2.5}.*²⁷ The only fatality associated with federally funded air pollution experiments occurred in 1996, when a University of Rochester student was accidentally fatally overdosed with an anesthetic during a procedure known as a bronchoscopy.²⁸

EPA Laboratory Animal Experiments. In addition to laboratory experiments on humans, the EPA has conducted and funded in university laboratory experiments in which various animals, such as rodents and dogs, were exposed to PM_{2.5} at levels hundreds of times greater than occur in outdoor air. Despite the high exposures, no laboratory animal has ever been killed by PM_{2.5} in these experiments.²⁹

Real-World PM_{2.5} Experiences. There are myriad real-world experiences with ambient PM_{2.5}. Advocates of the PM-kills claims routinely distort or ignore them for several reasons.

Past and Current Episodes of Fatal Air Pollution. The 20th century witnessed three episodes of extreme air pollution associated with fatalities:

- Meuse Valley, Belgium, December 1930;
- Donora, Pennsylvania, October 1948; and
- London, UK, winter 1952.

All three incidents occurred because of unusual weather inversions that trapped and concentrated the emissions of a variety of air pollutants in the air.

Advocates of the PM-kills hypothesis cite these episodes as evidence that PM kills and justification for EPA PM_{2.5} regulation. But published reports written by experts in the near-term aftermath of these incidents tell a different story.³⁰

- **Meuse Valley.** Researchers deemed the carbon PM or soot by itself to be “innocuous.” Deaths were blamed on unidentified “irritant gases” that might have had been adsorbed onto particles.³¹
- **Donora.** Autopsies indicated that deaths were caused by acidic gases destroying respiratory tract tissue. PM by itself was not implicated.³²
- **London.** The famous London Smog occurred simultaneously with a deadly influenza epidemic. To the extent that increased deaths could possibly be attributed to the poor air quality, it was the concentration of acidic gases, not PM by itself that was blamed.³³

The hypothesis of acidic gases causing the deaths is supported by the high air pollution levels experienced today in China that occur without a contemporaneous spike in deaths. Quite simply, it is difficult to blame PM_{2.5} for deaths that have not occurred.

PM_{2.5} levels in highly polluted Chinese cities can exceed levels 100 times higher than the average PM_{2.5} levels found in air in the United States. If PM_{2.5} were as lethal as claimed, contemporaneous spikes in death rates in Chinese cities would be evident, but none have been reported.³⁴ The only actual deaths reported associated with air quality involve visibility problems, such as in vehicular accidents. A possible explanation for the absence of deaths in Chinese cities is that, despite the obviously highly polluted air, sulfur dioxide levels (a source of the acidic, irritant gases present in the 20th century incidents) in Chinese cities is well within safe levels.

PM_{2.5} from Smoking. Smokers are exposed to relatively immense amounts of PM_{2.5} as compared to levels in outdoor air. Someone breathing typical U.S. outdoor air, may inhale 100 micrograms (millionths of a gram) *per day* of PM_{2.5}. Smoking a single cigarette, however, exposes a smoker to *10,000 to 40,000 micrograms in just a few minutes*.³⁵ Someone smoking an unfiltered marijuana joint may inhale as much as 160,000 micrograms in just a few minutes.³⁶

Given these immense PM_{2.5} exposures and the absence of reports of anyone ever dying in the immediate aftermath of smoking anything, the claim that inhaling any amount of PM_{2.5} from outdoor air can result in death within hours rings hollow.

What does the epidemiology of smoking tells us about long-term exposures to PM_{2.5}? Someone living to age 80 or so breathing average U.S. air will inhale an ounce or so in total of PM_{2.5}³⁷—an amount that can be visualized as two sugar packets’ worth of PM_{2.5}. A recent study in the *New England Journal of Medicine* reported that people who stop smoking by age 35 have normal life expectancy, which translates to about 80 years for white women.³⁸ Assuming such an individual had smoked half a pack of cigarettes per day, she would have inhaled over four pounds of PM_{2.5}. What does it say about the lethality of PM_{2.5} on a long-term basis if a non-smoker and smoker can have the same life expectancy despite the vast differences in PM_{2.5} inhaled—a sugar packet versus more than a sugar bag’s worth, respectively?

Recall that the EPA says the elderly and sick are most vulnerable to the effects of PM_{2.5}. Yet physicians now prescribe medical marijuana to patients that include the elderly and sick. Presumably the physicians are not violating the “first, do no harm” part of the Hippocratic Oath. The absence of deaths among medical marijuana users indicates they are not.

Occupational Exposures to PM_{2.5}. Keeping in mind that someone inhaling average U.S. outdoor air will inhale about 100 micrograms of PM_{2.5} per day, federal regulations tightened in 2016 permit coal miners to inhale as much as 12,000 micrograms of PM_{2.5} per day. For the 40 years prior to the 2016 change, coal miners could be exposed to 16,000 micrograms per day. So coal miners may inhale more than 100 times more PM_{2.5} than people who do not work in coal mines. But guess what? On average coal miners live longer than non-coal miners.³⁹

Another relevant example is that of workers’ exposure to high levels of diesel exhaust, which is 95 percent PM_{2.5}. In 2012, the U.S. National Cancer Institute reported longer life expectancy among a population of 12,315 operators of forklifts, locomotives and other heavy equipment compared to all other workers.⁴⁰

Conclusion. Summarizing the scientific evidence on PM_{2.5} and death:

1. The PM_{2.5} epidemiology is conflicted and controversial to say the least. But even if it were not, the EPA has admitted to a federal court that because of its statistical nature, the PM_{2.5} epidemiology is an insufficient basis for concluding that PM_{2.5} causes death.
2. Because the PM_{2.5} epidemiology is insufficient for determining whether PM_{2.5} causes death, the EPA and others have conducted numerous clinical experiments in which humans were exposed to very high levels of PM_{2.5}. No deaths or harm were reported in any of these experiments.
3. The EPA has conducted or sponsored numerous laboratory experiments in which various types of animals were exposed to very high levels of PM_{2.5}. No deaths have been reported.
4. The deaths that occurred in historical air pollution incidents were attributed by contemporaneous researchers to acidic or irritant gases in the atmosphere, not to PM_{2.5} by itself. Because emissions of these gases are now tightly controlled, such temperature inversions no longer present a lethal threat — even in Chinese cities.
5. The most common and acute exposure to PM_{2.5} is tobacco and marijuana smoke. The epidemiology of smoking debunks the notions that either short-term or long-term exposure to ambient PM_{2.5} is lethal.
6. Workers heavily exposed to PM_{2.5} live longer than average workers.

It is clear that the available evidence fails to link PM_{2.5} in outdoor air with death. Therefore, a benefit-cost analysis for the SAFE rule need not concern itself with PM_{2.5} and death. Whatever minor changes in PM_{2.5} levels that might be brought about by the proposed SAFE rule—PM_{2.5} levels could slightly increase or even decrease because of the rule—will not cause or prevent deaths or change death rates.

Notes

¹ The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks, *Federal Register*, Vol. 83, No. 165 (August 24, 2018), p. 42986, <https://www.federalregister.gov/documents/2018/08/24/2018-16820/the-safer-affordable-fuel-efficient-safe-vehicles-rule-for-model-years-2021-2026-passenger-cars-and>.

² Zack Colman and Scott Waldman, “What’s deadlier—car crashes or pollution? Trump picks one,” *Climatewire*, August 1, 2018, <https://www.eenews.net/climatewire/stories/1060091777>.

³ National Highway Traffic Safety Administration, “USDOT Releases 2016 Fatal Traffic Crash Data. October 6, 2017,” news release, <https://www.nhtsa.gov/press-releases/usdot-releases-2016-fatal-traffic-crash-data>.

⁴ For a more detailed discussion, see Steven Milloy, *Scare Pollution: Why and How to Fix the EPA* (Bench Press, December 2016).

⁵ U.S. Environmental Protection Agency, Air Quality Criteria for Particulate Matter and Sulfur Oxides, EPA-600/8-82-029a, December 1982, <https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=46205>.

⁶ The six communities analyzed in the study were Watertown, Massachusetts; Harriman, Tennessee; specific census tracts of St. Louis; Steubenville, Ohio; Portage, Wisconsin; and Topeka, Kansas. Douglas W. Dockery et al., “An Association between Air Pollution and Mortality in Six U.S. Cities,” *New England Journal of Medicine*, Vol. 329, No. 4 (December 9, 1993), pp. 1753-1759, https://www.nejm.org/doi/full/10.1056/NEJM199312093292401#article_references.

⁷ C. Arden Pope III et al., “Particulate Air Pollution as a Predictor of Mortality in a Prospective Study of U.S. Adults,” *American Journal of Respiratory and Critical Care Medicine*, Vol. 131 (March 1995), pp. 669-674, <http://www.scientificintegrityinstitute.org/Pope1995.pdf>.

⁸ Kathleen Ingley, “Particulate pollution’s lethal risk: Study affirms link to early deaths,” *Arizona Republic*, March 10, 1995, p. A1.

⁹ National Ambient Air Quality Standards for Particulate Matter, 62 *Federal Register*, Vol. 62, No. 138 (July 18, 1997), p. 38652, <https://www.gpo.gov/fdsys/pkg/FR-1997-07-18/pdf/97-18577.pdf>.

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