

# California's Ruinous (and Unlawful) Assault on America's Trucking Industry

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## KEY TAKEAWAYS

The California Air Resources Board is working closely with the Biden Administration to remake America's trucking industry by forcing a transition to electric trucks.

If CARB succeeds in this effort, the consequences, both for the U.S. economy and for America's families, will be calamitous.

Unless new leadership in Washington commits to a 180-degree change in regulatory policy, the best chance to forestall CARB's "Green Dream" will lie with the courts.

The global climate regulators at the California Air Resources Board (CARB), working in close collaboration with the Biden Administration, are on a fast march to remake every mode of surface transportation nationwide—and the consequences, both for the U.S. economy and for America's families, would be calamitous. Unless and until 2024 brings new leadership in Washington that is committed to a 180-degree change in regulatory policy, the best chance to forestall CARB's "Green Dream" onslaught will lie with the courts.

It is well known that CARB, like President Joe Biden and his regulators, is trying to compel auto-makers to shift production from internal-combustion engines to electric vehicles (EVs) much faster and more extensively than market demand can possibly support with the stated aim of ensuring that 100 percent of all new passenger cars, crossovers, SUVs,

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minivans, and pickups will be EVs by 2035.<sup>1</sup> In March 2022, the Biden Administration gave a thumbs up to CARB's so-called greenhouse gas regulation of automobiles by having the U.S. Environmental Protection Agency (EPA) reinstate a controversial waiver of preemption for California under the federal Clean Air Act.<sup>2</sup>

CARB is out to force a similar transformation in the rail industry by requiring railroads and other locomotive operators to phase out diesel-powered locomotives and convert to unproven "zero-emission" rail technologies, a scheme at odds with Congress's plan for uniform federal regulation of railroads.<sup>3</sup> In November 2023, the Biden EPA issued a boost to CARB's train rules by amending its Clean Air Act regulations to narrow the scope of federal preemption of state efforts to control emissions from "non-new" locomotives.<sup>4</sup>

It should therefore come as no surprise that commercial trucks and the trucking business, which are so critical to America's economic prosperity and quality of life, are squarely in CARB's gunights as well.

## CARB's Truck Rules

Since 2021, CARB has rolled out a series of rules aimed at mandating the rapid conversion of medium-duty and heavy-duty trucks from conventional diesel engines to so-called zero-emission drivetrains. By "zero emission," CARB has in mind trucks that would emit *no carbon dioxide* when operated—something that is possible only if the trucks could be powered entirely by battery-stored electricity or hydrogen fuel cells.

This monomaniacal emphasis on eliminating carbon dioxide shows just how committed CARB is to advancing Governor Gavin Newsom's uncompromising anti-fossil fuel agenda—even when that means diverting its attention away from finding practical ways to reduce the release of those traditional pollutants that cause smog and harm local air quality (the so-called criteria air pollutants, including unburned hydrocarbons, particulate matter, oxides of nitrogen, and ozone, for which national ambient air quality standards are established under the Clean Air Act<sup>5</sup>).

Even if we focus only on carbon dioxide, electric trucks are not really "zero emission." The process of manufacturing the large batteries needed to power these trucks generates as much as or more than the carbon dioxide required to drive a conventionally fueled vehicle for several years.<sup>6</sup> That does not include the great volume of "upstream" carbon dioxide released in generating all of the additional electricity needed to charge an electric truck over its working life.

The reality is that while the technologies necessary to produce what CARB calls zero-emission trucks are under development, they are not yet practical for real-world use. Zero-emission trucks, like zero-emission locomotives, have yet to prove safe, affordable, reliable, or capable of performing the full range of work tasks required by commercial operators. In a December 2023 post on LinkedIn, Peter Schneider, president of a large California trucking company, pointed out the deficiencies of electric and hydrogen fuel cell trucks versus diesel trucks:<sup>7</sup>

- **Efficiency and Performance.** Whereas most truck drivers drive eight–12 hours in a day and make runs of 250–300 miles at a stretch, and while many trucking firms need to operate their trucks night and day in multiple shifts to maximize utilization, electric trucks can operate only six to eight hours at most on a single charge (depending on conditions and weight carried) and have a maximum range of only 100 to 150 miles on flat land with a light load before needing a time-consuming recharge.
- **Price.** Whereas new diesel sleeper trucks cost around \$170,000, electric trucks cost around \$450,000–\$500,000 (plus charging stations, which cost another \$50,000–\$150,000), and hydrogen fuel cell trucks cost upwards of \$700,000 (plus extra equipment, permitting, and insurance costs).
- **Weight.** Whereas diesel trucks weigh 15,000–20,000 pounds without cargo, electric trucks weigh 26,000–29,000 pounds, and hydrogen fuel cell trucks weigh around 22,000 pounds. This means that the maximum cargo load zero-emission trucks can carry is 25 percent less than the maximum cargo load that can be carried by diesel trucks, which translates into a 25 percent higher operating cost for zero-emission trucks relative to diesel trucks.
- **Pollution Control.** Meanwhile, the diesel trucks manufactured today are 95 percent cleaner than those produced just 15 years ago in terms of the emission of criteria pollutants. If CARB were truly committed to reducing smog and improving air quality in the Los Angeles basin and other local areas of California, it would want to incentivize carriers to invest in newer, cleaner-burning diesel trucks rather than expensive, unreliable alternatives.

Even if electric trucks could theoretically perform on a par with conventional diesel trucks, there is little or no prospect that functional charging infrastructure will be installed on the national scale that would be required to support their widespread use. Who will pay the capital costs of building out the necessary charging infrastructure, let alone the enormous investments needed to expand the electricity grid and power-generation capacity to serve these charging stations? Similar questions arise with respect to the infrastructure required to support hydrogen fuel cell trucks.

If trucking companies are forced to bear these costs, either directly or indirectly through targeted fees and taxes, their continued operations will depend on their ability to pass the costs on to customers through higher shipping rates. The costs of shipping for all Americans will skyrocket as will the costs of all economic activities whose supply chains depend on efficient shipping. The predictable result of this forced “green” transition will be a bloodbath in the trucking industry, with many carriers going out of business and an industry that is served by only a handful of large national carriers. Just about every American in every region of the country will lose out in that scenario.

For the foreseeable future, the U.S. economy—fundamentally dependent on efficient, low-cost transportation services provided by America’s thousands of hard-working motor carriers—simply cannot function productively if forced to rely on zero-emission trucks. Moreover, to the extent that unrealistic regulatory mandates cause trucking companies to continue operating older, dirtier diesel-powered trucks longer than they otherwise would because the new technologies are impractical and unaffordable, the net effect on air quality will be decidedly negative.

But these facts have not stopped CARB from proceeding full speed ahead with its technology-forcing regulatory agenda.

**The Advanced Clean Trucks (ACT) Rule.** In its Advanced Clean Trucks Regulation, or ACT rule,<sup>8</sup> CARB ordered truck manufacturers to convert an increasing percentage of the new trucks they produce for sale in California to zero-emission vehicles (ZEVs) beginning in 2024. According to this rule, subject to a system of regulatory credits and deficits applied to each manufacturer, 55 percent of new on-road trucks sold in California with a gross-weight rating of between 8,500 and 14,000 pounds (not including buses) are supposed to be ZEVs by model year 2035; for new trucks rated to haul more than 14,000 pounds (other than tractor-trailer rigs), the 2035 target is 75 percent; and for new tractors rated to haul more than 26,000 pounds, it is 40 percent.<sup>9</sup>

More recently, CARB dramatically upped the ante, decreeing that by 2036, a full 100 percent of all new on-road trucks produced for sale in

California with a gross-weight rating of greater than 8,500 pounds (other than emergency vehicles) will have to be ZEVs.<sup>10</sup>

Because these requirements, like CARB's auto rules, would override environmental emissions controls imposed on manufacturers by the EPA under the federal Clean Air Act, California cannot enforce its truck rules without a waiver of preemption granted by the EPA.<sup>11</sup> Here again, the Biden Administration has not hesitated to oblige. In accordance with the Administration's policy of pushing aggressive and unrealistic EV mandates, the Biden EPA gave CARB the go-ahead to implement its ACT rule on April 6, 2023.<sup>12</sup> That waiver decision is currently under challenge by several states and various private entities—including trucking companies, fuel refiners, and others—in the U.S. Court of Appeals for the D.C. Circuit.<sup>13</sup>

Ironically, the one set of affected entities that chose not to challenge CARB's Advanced Clean Trucks Regulation in court was the very truck and engine makers that are the rule's primary targets. These original equipment manufacturers (OEMs) signed an agreement with CARB specifying that they would not oppose CARB's truck mandates in exchange for certain promised but yet-to-be-finalized regulatory revisions and flexibilities.<sup>14</sup>

This acquiescence by the OEMs follows a pattern seen in earlier environmental rulemakings involving the auto industry in which several of the major automakers reached similar accommodating agreements with CARB.<sup>15</sup> It reflects a frequently seen regulatory dynamic: Incumbent producers often like it when regulators force them to invest in expensive new replacement technologies, because such regulatory mandates are an effective barrier to entry against lower-cost competitors and can help the incumbents to overcome a lack of demand from customers for high-ticket, unproven alternatives.

**The Advanced Clean Fleets (ACF) Rule.** Having corralled the manufacturers with promises of flexibility and the enticement of future profits, CARB is now taking aim at their customers—the thousands of trucking businesses and other entities throughout the U.S. that own or operate at least one medium-duty or heavy-duty truck in California. CARB's Advanced Clean Fleets Regulation, or ACF rule,<sup>16</sup> is designed to muscle these operators into retiring their diesel-powered trucks from service on an artificially abbreviated schedule—in many cases, well before the end of a typical truck's actual useful life—and diverting capital instead to the acquisition of zero-emission trucks with a goal of making sure that all trucks and buses operated in California will be zero emission by some point in the 2040s.

The rule incorporates four sets of requirements governing four different categories of operators in addition to (with regard to the 2036 sales mandate) the OEMs. Specifically:

- The ACF rule’s **High Priority and Federal Fleet Requirements**<sup>17</sup> apply to (1) large trucking companies, truck rental firms, and other significant commercial entities that earn \$50 million or more in gross revenue from whatever source or that control a total global fleet of 50 or more trucks (so-called High Priority fleet operators) and (2) federal government agencies. These requirements cover vehicles owned or operated by these entities with a gross-weight rating greater than 8,500 pounds, lighter-duty package delivery trucks, and so-called yard tractors (used to move cargo containers and truck trailers around a storage yard or other facility),<sup>18</sup> with various types of trucks (including, among others, school buses, emergency vehicles, dedicated snow removal trucks, and tactical military vehicles) exempt from coverage for now.<sup>19</sup>
- The rule’s **State and Local Government Agency Fleet Requirements**<sup>20</sup> apply to state and local government agencies with jurisdiction in California.
- The rule’s **Drayage Truck Requirements**<sup>21</sup> apply to any entity that owns, operates, or contracts for the use of on-road “drayage trucks”—defined to mean trucks with a gross-weight rating exceeding 26,000 pounds that haul cargo to or from California seaports or intermodal railyards.
- The rule’s **2036 100 Percent Medium- and Heavy-Duty Zero Emissions Vehicle Sales Requirements** apply to the OEMs as described above.<sup>22</sup>

The following are the highlights (or lowlights, depending on your perspective) of the ACF rule’s substantive requirements.

- **High Priority and Federal Fleets.** Each High Priority and federal fleet operator must choose to follow one of two alternative regulatory paths (described below) for retiring and replacing the diesel trucks in its fleet: either the **Model Year Schedule** alternative or the **ZEV Milestones Option**.<sup>23</sup> In addition, each operator must ensure, at a minimum, that any diesel-powered truck added to its California fleet has a 2010 or later model-year engine and satisfies all California emissions standards applicable to new trucks.<sup>24</sup>

If selected, the Model Year Schedule further limits the operator to adding only zero-emission trucks or (through model year 2035) nearly zero-emission alternatives to its California fleet<sup>25</sup> and, beginning in 2025, would require it to retire from use in California any internal-combustion-engine (ICE) truck that has driven more than 800,000 miles or is past a certain age (between 13 and 18 years old depending on the truck's mileage).<sup>26</sup> Alternatively, if it chooses the ZEV Milestones Option, the operator must commit to ensuring that specified percentages of its California fleet will be ZEVs by certain years as laid out in the rule. The progression of milestones differs by type and size of truck, from lighter duty to heavier duty, but the milestones reach 100 percent for all of the covered trucks between 2035 and 2042.<sup>27</sup>

Whichever compliance option is selected, there are two aspects of the rule that amplify the practical impact it will have on many High Priority operators: (1) a truck is considered to be added to an operator's California fleet, and thus subject to the requirements of the rule, whenever the truck is used in California on any day during the relevant calendar year, and (2) the rule applies fully to leased and rental trucks, both those that may be leased or rented by High Priority or federal fleet operators for use in California and those that are owned by High Priority truck rental companies and rented to customers that use them in California.<sup>28</sup>

As a result of these scoping provisions, some of the larger trucking companies and truck rental firms across the U.S. that meet the definition of High Priority fleet operator will have to ensure, as a practical matter, that all or nearly all of their trucks nationwide satisfy CARB's requirements, because they may not be able to control when a given truck will need to be used in California.

The bottom line is that these regulatory requirements will impose seismic costs and inefficiencies on the nation's trucking industry—impacts that inevitably will ripple throughout the economy and be felt by all Americans.

- **State and Local Government Fleets.** The rule requires the operators of state and local government fleets in California to comply with one of two options: (1) ensure that 100 percent of the new trucks they



purchase for their fleets will be zero emission by 2027 or (2) satisfy the ZEV Milestones Option.<sup>29</sup> The state and local government requirements are subject to many of the same conditions and coverage terms that govern the High Priority and federal fleet operators.

- **Drayage Truck Fleets.** For drayage fleet operators, the rule requires that (1) beginning in 2024, all the new drayage trucks they register for use at California seaports and intermodal railyards must be zero emission; (2) beginning in 2025, the diesel-powered drayage trucks in their fleets must be retired from service when they reach what CARB defines as their “minimum useful life” (basically meaning once they reach 13 years old or 800,000 miles traveled, whichever is later, with an outside limit of 18 years old regardless of miles driven); and (3) by 2035, all of their drayage trucks in California must be ZEVs, and only zero-emission trucks will be allowed to provide drayage service in the state.<sup>30</sup>
- **Additional Provisions, Including Exemptions and Extensions.** To support the substantive requirements described above, the ACF rule includes provisions that impose extensive reporting and record-keeping obligations<sup>31</sup> and incorporates enforcement authorities and penalties for violations.<sup>32</sup> At the same time, other provisions betray some recognition that the timelines mandated in the rule for replacing diesel trucks with ZEV alternatives may be unworkable and unrealistic: CARB has included a complex tangle of potential exemptions and extensions of compliance deadlines, all of which may be granted unilaterally by CARB’s executive officer on an *ad hoc* basis.<sup>33</sup>

While the decisional standards and scope of discretion for granting exemptions and extensions are vague, most of these provisions appear narrow and difficult to satisfy. For example, High Priority operators can apply for an exemption allowing the purchase of a diesel truck, but only if they can show that no battery-electric truck is available to meet their “demonstrated daily usage needs” according to strict criteria and only if 10 percent of their California fleet is already made up of ZEVs or near ZEVs.<sup>34</sup> They also can ask for an extension of deadlines for retiring diesel trucks if there are delays in the construction of charging infrastructure necessary to support the replacement ZEVs, but only for trucks used at the site where the delay occurs or for particular locations where the operator has previously contracted for charging services.<sup>35</sup>



It is also unclear whether the executive officer's exemption or extension decisions will be challengeable in state court: The rule says nothing about judicial review. There is an obvious possibility that the executive officer could exercise his exemption and extension discretion unevenly and that these decisions would be made for the sake of expediency or based on favoritism or undisclosed policy considerations.

All in all, these provisions introduce tremendous uncertainty for operators about exactly when and how the rule will be applied and whether it will be applied equally to all competitors.

## California Trucking Association's Lawsuit

The trucking industry is fighting back. In addition to the legal challenge to EPA's grant of a waiver from preemption for CARB's ACT rule, the California Trucking Association (CTA) has sued CARB in the U.S. District Court for the Eastern District of California seeking to invalidate the Advanced Clean Fleets Regulation.<sup>36</sup> CTA advances five legal claims in its district court action. Specifically, CTA:

- Claims that the ACF rule constitutes a state "standard relating to the control of emissions from new motor vehicles" expressly preempted by Section 209(a) of the federal Clean Air Act<sup>37</sup> and that EPA has no power to grant a waiver of preemption for the rule under Section 209(b)<sup>38</sup> because the rule would impose requirements that go beyond the scope of EPA's own regulatory authority under federal law.
- Claims that the rule is impliedly preempted by Section 246 of the Clean Air Act,<sup>39</sup> which establishes federal requirements for a "clean-fuel vehicle program" that are applicable to fleet operators in states like California that fail to meet federal clean air standards in one or more areas. CARB's clean-fleet mandates do not comply with the requirements of Section 246, and CTA maintains that they are therefore prohibited by federal law.
- Claims that CARB's rule violates the express preemption provision in the federal Motor Carrier Act, which (subject to certain exceptions not applicable here) prohibits states from enacting or enforcing any legal requirement "related to a price, route, or service of any motor carrier..."

or any motor private carrier, broker, or freight forwarder with respect to the transportation of property.”<sup>40</sup>

- Argues that the ACF rule violates the Due Process Clause of the Fourteenth Amendment because it contains numerous vague provisions that delegate broad discretion to CARB’s executive officer to grant exemptions from enforcement and extensions of compliance deadlines on an *ad hoc* basis without any defined standards and without any specified recourse for regulated entities when such relief is denied.
- Asserts that the rule violates the dormant Commerce Clause principles of the U.S. Constitution under the Supreme Court’s precedents because it will impose substantial burdens on interstate commerce, including on out-of-state trucking companies, that are clearly excessive in relation to the environmental benefits the rule will supposedly achieve in California.

On these grounds, the complaint seeks both a declaratory judgment that the Advanced Clean Fleets Regulation is unlawful and an injunction barring its enforcement.

On November 15, 2023, CARB requested a waiver of preemption from the EPA to enforce the ACF rule.<sup>41</sup> CARB has announced that it will stay enforcement of the rule as applied to High Priority and drayage fleet operators until EPA grants the requested waiver or determines that no waiver is required.<sup>42</sup> In light of CARB’s stay of enforcement, CTA has thus far refrained from filing a motion for preliminary injunction in its court case.

## Legal Analysis

CTA’s legal claims against the ACF rule—particularly the preemption claims—are compelling.

**Federal Motor Carrier Act Preemption.** Congress has added a broad preemption provision to the Motor Carrier Act to ensure that the prices, routes, and services of America’s trucking companies will be determined by competitive market forces and will remain subject to uniform federal regulation, not to the vagaries and inefficiencies of disparate state rules.<sup>43</sup>

In the ACF rule, CARB is not just imposing restrictive emissions standards and ZEV mandates on OEMs (that is, on the production and sale of new trucks); it is attempting to regulate how trucking companies (motor carriers) use and manage their fleets out on the road, which inevitably will

have pervasive effects on the services they offer, the routes they serve, and the costs of their operations, increasing the prices they have to charge customers to cover their costs. In all respects, the regulatory requirements imposed by the rule on High Priority and drayage fleet operators are manifestly “related to” the prices, routes, and services of the covered motor carriers and are therefore barred as preempted under the Motor Carrier Act.<sup>44</sup>

**Clean Air Act Preemption.** Although focused primarily on the on-road operation of truck fleets, the ACF rule’s requirements nevertheless also constitute “standard[s] relating to the control of emissions from new [trucks]” and are therefore preempted as well under Section 209(a) of the Clean Air Act.<sup>45</sup> That does not mean, however, that EPA necessarily has the power to grant CARB a waiver of preemption to implement the ACF rule under Section 209(b).<sup>46</sup>

Many aspects of the rule, such as the ZEV mandates and forced retirement of diesel trucks before the true end of their useful lives, exceed any emissions-control restrictions for new trucks and new truck engines that EPA has authority to impose under Section 202 of the act.<sup>47</sup> They also go further than EPA’s authority to set regulatory standards for cleaner-burning fuels.<sup>48</sup> If EPA has no authority of its own to impose requirements like those in the ACF rule under the federal statute, CTA argues that EPA lacks authority to grant CARB a waiver of Section 209 preemption to enable CARB to impose the ACF requirements itself. That argument is a strong one.

Moreover, even if EPA’s waiver authority under Section 209(b) could extend in theory to regulatory mandates like those approved by CARB in the ACF rule, CARB cannot make the showing needed to obtain a waiver. Section 209(b) requires CARB to show that the rule is necessary “to meet compelling and extraordinary conditions,” which implicitly means conditions that involve local air quality in California.<sup>49</sup> The ACF mandates are aimed at addressing the putative global effects of carbon dioxide emissions, not any compelling and extraordinary conditions that are unique or special to California.

Furthermore, CARB’s Advanced Clean Fleets Regulation fails to satisfy the requirements for a state-implemented clean-fuel program for fleet vehicles under Section 246 of the Clean Air Act. That section specifies that such a state program must be submitted to EPA for review as part of the state’s Clean Air Act implementation plan and must provide that covered fleet operators, including operators of heavy-duty trucks, will transition to using clean alternative fuels in a certain percentage of their fleets on a phased-in basis, subject to a system of credits administered under regulations issued

by EPA.<sup>50</sup> Most important, Section 246(d) expressly provides that the state program must ensure “that the choice of clean-fuel vehicles and clean alternative fuels shall be made by the covered fleet operator,” subject to the requirements of federal law, not by state regulators.<sup>51</sup> There is a clear implication from these federal statutory requirements that Congress did not intend that states should impose different and more onerous environmental requirements on truck fleet operators, like those in the ACF rule, that do not meet the criteria specified in Section 246.

**Due Process and Commerce Clause Principles.** Finally, CTA has strong grounds for claiming that the ACF rule violates the due process rights of regulated entities and runs afoul of the dormant Commerce Clause of the Constitution because it will impose a huge economic burden on interstate commerce that cannot be justified by any local regulatory need.

Concerning due process, CTA asserts that the rule’s many vague exemption and extension provisions, combined with the lack of certainty over how those provisions will be applied, leave “covered operators...in the dark on whether and how they will be required to comply” with the rule,<sup>52</sup> which CTA claims is an intolerable position for commercial carriers and a fundamental denial of due process.<sup>53</sup>

With regard to the Commerce Clause, the Supreme Court has long held that state regulations violate the Constitution when the burden they impose on interstate commerce “is clearly excessive in relation to the putative local benefits.”<sup>54</sup> The Court also has recently affirmed that even nondiscriminatory “state regulations on instrumentalities of interstate transportation—trucks, trains, and the like”—may violate the Commerce Clause in circumstances where “a lack of national uniformity would impede the flow of interstate goods.”<sup>55</sup> In the case of trucking, there is no doubt that a lack of uniformity in the regulation of motor carriers will impose an unacceptable impediment to the flow of goods in interstate commerce—a conclusion confirmed by the express preemption provision that Congress included in the federal Motor Carrier Act.

There also is no doubt that CARB’s ACF rule will impose far-reaching national economic burdens on the interstate business of motor carriers and truck rental firms, as discussed above. To take just one example, as CTA’s complaint asserts, because rental fleet owners as a practical business matter cannot control where renters take their vehicles, it will be “virtually impossible for the rental fleet owners to develop a compliance plan [to meet the requirements of the ACF rule] unless all trucks [in their fleets], whether sold and registered in Florida or Texas or Maine, comply with California’s regulations.”<sup>56</sup>

In general, the rule will require massive capital investments in new trucks and in charging infrastructure that will raise the costs of shipping in nearly every commercial sector of the U.S. economy nationwide, almost certainly driving a large portion of interstate motor carriers out of business. It also will cause many smaller out-of-state carriers to avoid doing business in California at all.<sup>57</sup>

All of these burdens will affect everyone whose quality of life depends on the economical supply of goods and services, which means all Americans, not just the residents of California. When that impact is felt, the political backlash inevitably will be tremendous.

On the other side of the ledger, the ACF rule's potential environmental benefits in terms of global climate effects will be trivial. Not surprisingly, CARB has made no claim that the ACF rule will produce any measurable reduction in global temperatures. Research by Dr. Kevin Dayaratna, Chief Statistician and Senior Research Fellow at The Heritage Foundation, has shown that even if we completely eliminated all fossil-fuel use from the United States (an impossibility), that would result in less than 0.2 degrees Celsius in temperature mitigation by 2100.<sup>58</sup> Similarly, using the U.N. Climate Panel's own model for global average temperature effects, environmental economist Bjorn Lomborg has calculated that if every country in the world successfully achieved its stated EV targets by 2030, the total savings in carbon dioxide emissions would be expected to reduce global temperature by only 0.0002 degree Fahrenheit by 2100.<sup>59</sup>

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## Endnotes

1. See Steven G. Bradbury, *California's Radical Effort to Transform America's Auto Industry: Not Your Forefathers' Idea of Federalism*, THE HERITAGE FOUND., *Commentary* (Jan. 30, 2023), <https://www.heritage.org/government-regulation/commentary/californias-radical-effort-transform-americas-auto-industry-not>.
2. See EPA, Notice of Decision, *California State Motor Vehicle Pollution Control Standards; Advanced Clean Car Program; Reconsideration of a Previous Withdrawal of a Waiver of Preemption*, 87 Fed. Reg. 14,332 (Mar. 14, 2022), <https://www.govinfo.gov/content/pkg/FR-2022-03-14/pdf/2022-05227.pdf> (accessed January 29, 2024). This waiver decision is under challenge in federal court. See *Ohio v. EPA*, Case No. 22-1081 (D.C. Cir.) (oral argument held Sept. 15, 2023, before Circuit Judges Wilkins, Childs, & Garcia).
3. See Steven G. Bradbury, *Train Wreck Comin': Now California Wants to Dictate Locomotive Technology for Our Nation's Rail System*, THE HERITAGE FOUND., *Legal Memorandum* No. 341 (Sept. 28, 2023), <https://www.heritage.org/sites/default/files/2023-09/LM341.pdf>.
4. See Steven G. Bradbury, *Update: EPA Prepares the Way for California's In-Use Locomotive Regulation*, WASH. LEGAL FOUND., *Legal Pulse Blog* (Nov. 7, 2023), <https://www.wlf.org/2023/11/07/wlf-legal-pulse/update-epa-prepares-the-way-for-californias-in-use-locomotive-regulation/> (accessed January 29, 2024); EPA, Final Rule, *Locomotives and Locomotive Engines; Preemption of State and Local Regulations*, 88 Fed. Reg. 77,004 (Nov. 8, 2023), <https://www.govinfo.gov/content/pkg/FR-2023-11-08/pdf/2023-24513.pdf> (accessed January 29, 2024).
5. See 42 U.S.C. § 7409, available at <https://www.law.cornell.edu/uscode/text/42/7409> (accessed January 29, 2024).
6. A 2022 automotive engineering analysis estimated that the amount of carbon dioxide emitted in producing the battery used in one electric passenger car (a Tesla Model S) was equivalent to driving a diesel-powered vehicle 60,000 miles. See Tristan Burton et al., Convergent Science, Inc., "A Data-Driven Greenhouse Gas Emission Rate Analysis for Vehicle Comparisons," *SAE Int'l J. of Electrified Vehicles*, April 13, 2022, <https://doi.org/10.4271/14-12-01-0006> (also available at <https://www.sae.org/publications/technical-papers/content/14-12-01-0006/>) (accessed January 31, 2024). Producing the larger batteries needed for an electric truck would generate far greater volumes of carbon dioxide.
7. See Peter Schneider, *Peter Schneider's Post*, LinkedIn, [https://www.linkedin.com/posts/peter-schneider-%F0%9F%9A%9B-%F0%9F%9A%9B-%F0%9F%9A%9B-02753735\\_its-time-for-president-biden-to-take-on-activity-7139024754119757824-VsRw/?utm\\_source=share&utm\\_medium=member\\_ios](https://www.linkedin.com/posts/peter-schneider-%F0%9F%9A%9B-%F0%9F%9A%9B-%F0%9F%9A%9B-02753735_its-time-for-president-biden-to-take-on-activity-7139024754119757824-VsRw/?utm_source=share&utm_medium=member_ios) (accessed February 9, 2024).
8. See CARB, Final Regulation Order, *Advanced Clean Trucks Regulation* (filed with the California Secretary of State on March 15, 2021) (to be codified in title 13 of the California Code of Regulations (CCR) at §§ 1963-1963.5), <https://ww2.arb.ca.gov/sites/default/files/2023-06/ACT-1963.pdf> (accessed January 29, 2024).
9. See *ibid.* (13 CCR § 1963.1(b), Table A-1).
10. See CARB, Final Regulation Order, *Advanced Clean Fleets Regulation*, Appendix A-4, *2036 100 Percent Medium- and Heavy-Duty Zero Emissions Vehicle Sales Requirements* (effective Oct. 1, 2023) (to be codified at 13 CCR § 2016), <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acfro41.pdf> (accessed January 29, 2024).
11. See 42 U.S.C. § 7543(b) (authorizing EPA to grant California—and only California—a waiver from federal preemption under the Clean Air Act to enforce separate vehicle emissions standards, provided the standards are not arbitrary and capricious, are consistent with the goals of federal emissions regulations, and are needed to address compelling and extraordinary conditions in California), available at <https://www.law.cornell.edu/uscode/text/42/7543> (accessed January 29, 2024).
12. See EPA, Notice of Decision, *Waiver of Preemption for Various California State Motor Vehicle and Engine Pollution Control Standards, Including Advanced Clean Trucks Regulation*, 88 Fed. Reg. 20,688 (Apr. 6, 2023), <https://www.govinfo.gov/content/pkg/FR-2023-04-06/pdf/2023-07184.pdf> (accessed January 29, 2024).
13. *Western States Trucking Ass'n, Inc. v. EPA*, Case No. 23-1143 & consolidated cases (D.C. Cir.) (Petitions for Review filed June 5, 2023), docket available at <https://climatecasechart.com/case/western-states-trucking-association-inc-v-epa/> (accessed January 29, 2024).
14. See CARB, Press Release No. 23-18, *CARB and Truck and Engine Manufacturers Announce Unprecedented Partnership to Meet Clean Air Goals* (July 6, 2023), <https://ww2.arb.ca.gov/news/carb-and-truck-and-engine-manufacturers-announce-unprecedented-partnership-meet-clean-air> (accessed January 29, 2024).
15. See CARB, Press Release No. 19-33, *California and Major Automakers Reach Groundbreaking Framework Agreement on Clean Emission Standards* (July 25, 2019), <https://ww2.arb.ca.gov/news/california-and-major-automakers-reach-groundbreaking-framework-agreement-clean-emission> (accessed January 29, 2024).
16. CARB, Final Regulation Orders, *Advanced Clean Fleets Regulation & Advisories* (effective Oct. 1, 2023) (to be codified at 13 CCR §§ 2013-2016), <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets/advanced-clean-fleets-regulation-advisories> (accessed January 29, 2024).
17. CARB, Final Regulation Order, *Advanced Clean Fleets Regulation*, Appendix A-2, *High Priority and Federal Fleet Requirements* (to be codified at 13 CCR §§ 2015-2015.6), <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acfro21.pdf> (accessed January 29, 2024).
18. See 13 CCR § 2015(a).



19. See *id.* § 2015(c).
20. CARB, Final Regulation Order, *Advanced Clean Fleets Regulation*, Appendix A-1, *State and Local Government Agency Fleet Requirements* (to be codified at 13 CCR §§ 2013–2013.4), <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acffro11.pdf> (accessed January 29, 2024).
21. CARB, Final Regulation Order, *Advanced Clean Fleets Regulation*, Appendix A-3, *Drayage Truck Requirements*, (to be codified at 13 CCR §§ 2014–2014.3), <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/ac/acffrod31.pdf> (accessed January 29, 2024).
22. See *supra* note 10.
23. *Id.* § 2015(d). The requirements of the Model Year Schedule are set forth in 13 CCR § 2015.1, and those of the ZEV Milestones Option may be found in 13 CCR § 2015.2.
24. *Id.* § 2015(r).
25. See *id.* § 2015.1(a) (“ZEV Addition”); *id.* § 2015(e) (“NZEV Flexibility”); *id.* § 2015(b), at pp. A-2–10–11 (defining “Near-zero-emissions vehicle” or “NZEV”).
26. See *id.* § 2015.1(b) (“ICE Vehicle Removal”); *id.* § 2015(b), at p. A-2–10 (defining “Minimum useful life” and “Model year”).
27. See *id.* § 2015.2(a).
28. See *id.* § 2015(a)(2) (“Vehicle scope”) & (a)(3) (“Hiring Entities”); *id.* § 2015(b), at pp. A-2–5 (defining “California fleet”) & A-2–7 (defining “Fleet” and “Fleet owner”); *id.* § 2015.2(d) (“Rental Vehicle Option”).
29. See *id.* § 2013(d) (“General Requirements”) & (e) (“ZEV Milestones Option Flexibility”).
30. *Id.* § 2014.1(a)(1) & (2) (Phase 1 and Phase 2 requirements for on-road heavy-duty drayage trucks); see *id.* § 2014(b), at pp. A-3–8–9 (definition of “Minimum useful life”).
31. See *id.* §§ 2015.4 & 2015.5 (reporting and recordkeeping requirements for High Priority and federal fleets); *id.* §§ 2013.2 & 2013.3 (same for state and local government agency fleets); *id.* § 2014.1(a)(3)–(8) (disclosure, registration, and recordkeeping requirements relating to drayage fleets); *id.* § 2016(d)–(f) (certification, reporting, and record-retention requirements supporting the model year 2036 100 percent ZEV sales mandate).
32. See *id.* § 2015.6 (enforcement and penalty provisions for High Priority and federal fleets); *id.* § 2013.4 (for state and local government fleets); *id.* § 2014.3 (for drayage fleets); *id.* § 2016(g) (for the 2036 100 percent ZEV sales mandate).
33. See *id.* §§ 2015.1(c), 2015.2(f), & 2015.3 (exemption and extension provisions for High Priority and federal fleets); *id.* § 2013.1 (for state and local government fleets); *id.* §§ 2014(c) & 2014.2 (for drayage fleets).
34. See *id.* § 2015.3(b).
35. See *id.* § 2015.3(c).
36. See Complaint, *California Trucking Association v. CARB*, Case No. 2:23-cv-02333 (E.D. Cal. filed Oct. 16, 2023), available at [https://climatecasechart.com/wp-content/uploads/case-documents/2023/20231016\\_docket-223-cv-02333\\_complaint.pdf](https://climatecasechart.com/wp-content/uploads/case-documents/2023/20231016_docket-223-cv-02333_complaint.pdf) (accessed January 29, 2024). The docket for this case can be found at <https://climatecasechart.com/case/california-trucking-association-v-california-air-resources-board/> (accessed January 29, 2024).
37. 42 U.S.C. § 7543(a), available at <https://www.law.cornell.edu/uscode/text/42/7543> (accessed January 29, 2024).
38. See *id.* § 7543(b).
39. 42 U.S.C. § 7586, available at <https://www.law.cornell.edu/uscode/text/42/7586> (accessed January 29, 2023).
40. 49 U.S.C. § 14501(c)(1), available at <https://www.law.cornell.edu/uscode/text/49/14501> (accessed January 29, 2024).
41. Letter from Steven S. Cliff, Executive Officer, CARB, to Michael S. Regan, Administrator, EPA, Re: *Request for Waiver and Authorization Action Pursuant to Clean Air Act Sections 209(b) and 209(e) for California’s Advanced Clean Fleets Regulation* (Nov. 15, 2023), available at <https://www.epa.gov/system/files/documents/2023-12/ca-waiver-carb-req-acf-cvr-ltr-2023-11-15.pdf> (accessed February 8, 2024); CARB, *Clean Air Act § 209(b) Waiver and § 209(e) Authorization Request Support Document* (Nov. 15, 2023), available at <https://www.epa.gov/system/files/documents/2023-12/ca-waiver-carb-req-acf-2023-11-15.pdf> (accessed January 29, 2024).
42. See CARB, *Advanced Clean Fleets Regulation Enforcement Notice* (Dec. 28, 2023), [https://ww2.arb.ca.gov/sites/default/files/2023-12/231228acfnote\\_ADA.pdf](https://ww2.arb.ca.gov/sites/default/files/2023-12/231228acfnote_ADA.pdf) (accessed January 29, 2024).
43. See *Rowe v. New Hampshire Motor Transp. Ass’n*, 552 U.S. 364, 371 (2008); see also *American Airlines, Inc. v. Wolens*, 513 U.S. 219, 229–30 (1995) (construing the parallel preemption provision that bars state regulation of air carriers).
44. See 49 U.S.C. § 14501(c)(1).
45. See 42 U.S.C. § 7543(a); see also *Engine Mfrs. Ass’n v. South Coast Air Quality Mgmt. Dist.*, 541 U.S. 246 (2004).
46. 42 U.S.C. § 7543(b).
47. See *id.* § 7521, available at <https://www.law.cornell.edu/uscode/text/42/7521> (accessed January 30, 2024).
48. See *id.* § 7545, available at <https://www.law.cornell.edu/uscode/text/42/7545> (accessed January 30, 2024).



49. See *id.* § 7543(b)(1)(B).
50. See *id.* § 7586(a), (b), (c), & (f).
51. *Id.* § 7586(d).
52. Complaint ¶ 37, at p. 11.
53. See *id.* ¶¶ 88–100, at pp. 23–26.
54. *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970).
55. *Nat'l Pork Producers Council v. Ross*, 598 U.S. 356, 379 n.2 (2023) (quoting *Exxon Corp. v. Governor of Maryland*, 437 U.S. 117, 128 (1978)); see *General Motors Corp. v. Tracy*, 519 U.S. 278, 298 n.12 (1997).
56. Complaint ¶ 36, at p. 11.
57. See *id.* ¶¶ 107–111, at pp. 28–29; see also CARB, Public Hearing to Consider the Proposed Advanced Clean Fleets Regulation, Staff Report: Initial Statement of Reasons, pp. 59, 90–91 (Aug. 30, 2022) (recognizing some of these likely effects), <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/acf22/isor2.pdf> (accessed January 30, 2024).
58. See Kevin D. Dayaratna, Katie Tubb, and David Kreutzer, The Unsustainable Costs of President Biden's Climate Agenda, The Heritage Found., Backgrounder No. 3713 (June 16, 2022), [https://www.heritage.org/sites/default/files/2022-06/BG3713\\_0.pdf](https://www.heritage.org/sites/default/files/2022-06/BG3713_0.pdf).
59. See Bjorn Lomborg, "If Electric Vehicles Are So Great, Why Mandate Them?," *Wall St. J.*, Sept. 10, 2022, <https://www.wsj.com/articles/policies-pushing-electric-vehicles-show-why-few-people-want-one-cars-clean-energy-gasoline-emissions-co2-carbon-electricity-11662746452> (accessed January 30, 2024).