



CALIFORNIA'S ATTEMPT TO DICTATE LOCOMOTIVE TECHNOLOGY FOR NATIONAL RAIL SYSTEM UNLAWFULLY CONFLICTS WITH FEDERAL LAW

by Steven G. Bradbury

You probably know that Governor Gavin Newsom and his climate regulators at the California Air Resources Board (CARB)—in close coordination with the Biden administration—are out to choke off the internal combustion engine. Through its “[Advanced Clean Car](#)” rules and “[Zero-Emission Vehicle](#)” mandates, CARB is pushing the auto industry to build and sell electric vehicles much faster and more broadly than market demand could possibly support, with the [stated aim](#) of reaching 100-percent electrification of new cars, SUVs, and pickups by 2035.

What you may not know is that CARB is bent on forcing a similar transformation of America’s rail network.

CARB’s ambition respects no bounds. The proposed “[In-Use Locomotive Regulation](#)”—the first-ever direct attempt by CARB to impose restrictions on railroad operations and locomotive emissions—would overthrow Congress’s system of uniform federal regulation of railroads and replace it with an anti-fossil-fuel industrial plan hatched by state bureaucrats in Sacramento.

Two major trade associations of the U.S. rail industry, the Association of American Railroads (AAR) and the American Short Line and Regional Railroad Association (ASLRRRA), have filed a [complaint](#) in federal court in the Eastern District of California (Judge Mendez) claiming that CARB’s rule is preempted under federal law and prohibited by the Dormant Commerce Clause doctrine.¹ The legal claims are compelling, particularly on preemption grounds, so there’s good reason to hope the courts will derail California’s runaway locomotive regulation.

CARB’s Locomotive Rule

The rule, close to being finalized, would govern the commercial operation of most locomotives in California, including *freight line-haul locomotives* (powerful engines used by railroads to pull freight trains), *passenger locomotives* (which propel passenger trains and provide the electrical power needed for their railcars), *switch locomotives* (smaller engines used by railroads to move railcars and assemble trains), and *industrial locomotives* (used by companies to move their own goods and materials without offering rail service to other companies or passengers).²

The central provision in the rule would impose restrictive “In-Use Operational Requirements” on locomotive usage.³ Beginning in 2030, the rule would ban the use of most locomotives that are more than 23 years old, as measured from the assembly date of the locomotive’s original engine.⁴ After January 1, 2030, all new

¹ *AAR & ASLRRRA v. Randolph*, Case No. 2:23-at-00582 (E.D. Cal. filed June 16, 2023).

² See sections 2478.1 (applicability), 2478.2 (exemptions), and 2478.3 (definitions) of CARB’s proposed rule.

³ See section 2478.5.

⁴ Section 2478.5(a); see section 2478.3 (definition of “Original Engine Build Date”). If the locomotive’s engine was remanufactured before 2030 to meet the strictest emissions standards the U.S. Environmental Protection Agency (EPA) requires for new locomotives (known as “Tier 4” standards), then the 23-year age limit would be measured from the date of remanufacture. Section 2478.5(a)(1); see section 2478.3 (definition of “Cleaner Locomotive”). Under EPA rules, Tier 4 standards apply to locomotives originally built after 2014. See 40 CFR § 1033.101.

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passenger, switch, and industrial locomotives or any such locomotives that exceed the 23-year age limit could only be operated in California in a “zero-emission” mode—meaning that none of the locomotive’s propulsion systems could generate any pollutants or any carbon dioxide whatsoever during operation (which would theoretically be possible, for example, if the locomotive were powered at all times entirely by electricity).⁵ For *freight line-haul locomotives*, the same prohibition and zero-emission requirement would kick in on January 1, 2035.⁶

This hyperaggressive schedule for the forced phaseout of diesel-powered locomotives is primarily based on CARB’s general review of different manufacturers’ R&D programs and published literature describing (with rosy optimism) the potential for future development of viable new zero-emission propulsion technologies for rail systems.⁷ There’s no indication that CARB has made its own in-depth investigation into the safety or practical utility of these new technologies in real-world operations.⁸

America’s rail system functions as a single integrated national network. No railroad operates in isolation: The entire system depends on extensive overlapping operations from coast to coast with shared use of tracks, locomotives, and rail stock. It’s not practical for railroads to switch out their locomotives when they cross state lines or move onto the tracks of another railroad, and at any given time, somewhere between 5 and 10 percent of the *freight line-haul locomotives* operated by the six Class I railroads are owned or leased by another railroad. In a typical month, a single freight locomotive may traverse the lines of several railroads and visit widely dispersed regions of the country.

Given this reality, CARB acknowledges that its rule will force railroads operating in California—including the two Class I carriers with extensive California operations, BNSF Railway and Union Pacific Railroad—to transform their entire fleets of locomotives nationwide.⁹ Indeed, that would seem to be the precise goal CARB and Governor Newsom hope to achieve in their existential battle against global climate change.

By CARB’s own estimates, the net cost for BNSF and Union Pacific to transition their national fleets of *line-haul locomotives* plus their California *switch locomotives* to zero-emission technologies by 2050 will exceed \$86 billion.¹⁰ Within California alone, CARB estimates that the rule will impose \$16 billion in direct regulatory costs on locomotive operators (net of diesel fuel savings), including more than \$6 billion each for BNSF and Union Pacific.¹¹ CARB has speculated that the Class I carriers will be able to pass these enormous costs on to their customers “across the nation,” but it concedes that the smaller short line railroads in California, which have narrower operating margins and face especially aggressive competition from local truckers, may be unable to absorb the costs, so “it is possible” that some smaller railroads “would be eliminated.”¹²

As huge as they are, these cost estimates fail to consider the safety implications of the rule or the broader economic impact it will have on railroad customers and the market sectors, supply chains, and families across America that depend critically on efficient and economical rail transportation.

Railroads account for about 40 percent of America’s domestic freight carriage, and, despite the potential for terrible disasters like the hazardous train derailment in East Palestine, Ohio, rail still offers the safest and most fuel-efficient mode of surface transportation.¹³ The main competition to freight railroads is commercial trucking,

⁵ Section 2478.5(b); see section 2478.3 (definitions of “Zero Emission” locomotive operations).

⁶ Section 2478.5(c).

⁷ See CARB, [Technology Feasibility Assessment for the Proposed In-Use Locomotive Regulation](#) (Sept. 20, 2022); CARB, [Second Notice of Public Availability of Modified Text and Availability of Additional Documents and Information—In-Use Locomotive Regulation](#) (Aug. 8, 2023), pp. 8-9 (listing additional articles on zero-emission locomotive technologies relied upon by CARB).

⁸ Evidently aware that the projected timeline could well prove unworkable, CARB has directed its staff to undertake future “assessments” of progress in locomotive R&D and advise whether the deadlines “need to be adjusted forward or backward in time.” Section 2478.5(b) (1) & (c)(1). Given the track record of this rulemaking so far, however, we can only expect that these staff assessments, too, will be based on little more than an updated literature search.

⁹ CARB Staff Report, [Initial Statement of Reasons](#) (Sept. 20, 2022), p. 177.

¹⁰ See CARB, [Standardized Regulatory Impact Assessment](#) (May 26, 2022), pp. 88-90.

¹¹ See *id.*, pp. 86-87, 90-94.

¹² *Id.*, p. 143.

¹³ See AAR, [U.S. Freight Railroads—Congress Fact Sheet](#) (Apr. 2023).

and if the costs of rail service spike as a result of CARB's rule, more freight carriage will shift to trucks.¹⁴

The rail industry submitted extensive comments to CARB on all these considerations, but the agency largely dismissed the warnings.¹⁵

To compel industry to fund this technological transformation, the rule would require locomotive operators to make large annual deposits of cash, starting on July 1, 2026, into so-called "Spending Accounts."¹⁶ From 2030 on, these accounts could only be used for the purchase or lease of zero-emission locomotives and associated zero-emission rail equipment.¹⁷ The amount of money each operator would be required to deposit into its Spending Account in a given year would be based on the total emissions generated by its locomotive operations in California during the previous calendar year, and credits could be claimed for the actual deployment in California of zero-emission rail systems.¹⁸

BNSF and Union Pacific estimate that they will each have to set aside \$700-800 million per year to meet this Spending Account obligation. California's many smaller short line and regional railroads will be required to divert annual amounts ranging from several hundred thousand dollars to \$5 million for this purpose. Even for those railroads that can afford to sustain this annual financial obligation, the diversion of such sizable cashflows each year will necessarily come at the expense of investments in the safety and improved operational efficiency of their rail operations and, where consistent with competitive pressures, will drive up the costs of their services for customers.¹⁹

The locomotive rule includes two alternative ways for operators to satisfy CARB without having to comply directly with the Spending Account obligation and operational restrictions. The first is the "Alternative Compliance Plan" option,²⁰ which allows an operator to choose its own measures for reducing locomotive emissions, provided it shows to CARB's satisfaction that those measures will achieve emissions reductions "equivalent to or greater than" what it would achieve through strict implementation of the Spending Account and operating requirements.²¹

What goes unsaid is that under this option, if an operator found it impracticable to make the capital investments needed to satisfy the rule's operational requirements, it could always choose to meet the required emissions reductions by cutting back on its operations or ceasing to operate locomotives in California altogether. Sound familiar? Reducing electricity production was one way EPA said coal-fired power plant operators could comply with its industry-transforming Clean Power Plan, which the Supreme Court struck down under the Major Questions Doctrine in *West Virginia v. EPA*.²²

The other alternative path offered by CARB is the "Alternative Fleet Milestone Option," which would require the operator to commit to transition all its California operations to 100-percent zero-emission locomotive usage by 2047 in four prescribed phases.²³ Once approved to use this option, the operator would be bound to this transition schedule "in perpetuity," with no possible opt out, even if the milestones proved unachievable. Because there's no realistic possibility suitable zero-emission freight line-haul locomotives will actually be available on the

¹⁴ Of course, CARB is simultaneously plotting to impose zero-emission requirements on heavy-duty trucks through its proposed [Advanced Clean Fleets Regulation](#). But that transformational effort, which is just as unrealistic as the locomotive rule, has recently hit a speed bump: CARB has temporarily [pulled the proposal back](#) and is forming an advisory group in the face of stiff resistance from the trucking industry (and probably the Teamsters). See CARB Bulletin, [Advanced Clean Fleets Meeting to Discuss Formation of Truck Regulation Advisory Committee](#) (July 25, 2023).

¹⁵ See CARB, [Response to Comments on Draft Environmental Analysis—In-Use Locomotive Regulation](#) (Apr. 14, 2023).

¹⁶ Section 2478.4.

¹⁷ Section 2478.4(d). Prior to 2030, they could also be used for the purchase or lease of locomotives meeting EPA's strictest Tier 4 emissions standards. *Ibid.*

¹⁸ See section 2478.4(f) & (g).

¹⁹ Section 2478.6 provides for temporary extensions of the rule's compliance requirements but only in very limited circumstances. It also allows for extensions of deadlines for up to one year if the delivery or availability of necessary equipment purchased or leased by the railroad is unavoidably delayed.

²⁰ Section 2478.7.

²¹ See section 2478.7(b).

²² No. 20-1530, 597 U.S. ____ (2022).

²³ See section 2478.8.

prescribed timeline, CARB recognizes that this option will only be used, if at all, by passenger railroads.²⁴

Separately, the rule would impose locomotive idling restrictions,²⁵ administrative fee requirements,²⁶ and extensive reporting and recordkeeping obligations on all locomotive operators in California.²⁷ The idling restrictions would apply to diesel-powered locomotives equipped with an automatic engine stop/start device and would prohibit operators from parking the locomotive in a stationary position for more than 30 minutes without shutting down the engine, subject to narrow exceptions.²⁸ These idling restrictions are modeled on the idling controls EPA requires original equipment manufacturers to build into new locomotives,²⁹ but CARB's restrictions would apply to railroads and other locomotive operators, not to manufacturers. The rule would also prohibit operators from removing or disabling the engine stop/start device.³⁰

The Legal Barriers

A basic premise of American federalism is that each state is free to experiment with different solutions to issues of local concern. But the benefits of federalism are subverted when one state's regulations override the policy judgments of other states or of Congress and threaten to dictate the market conditions and commercial opportunities available to citizens throughout the nation.

That is exactly what's happening with CARB's automobile emissions rules. The EPA (first under President Obama and now again under the Biden administration) has granted California special waivers from federal preemption under the Clean Air Act so that CARB can impose draconian greenhouse gas restrictions and electrification mandates on new cars and light trucks sold in California—not because of any local environmental problems peculiar to the state but in pursuit of a global climate agenda. Given that the California market is so big and economically significant, automakers have little choice but to engineer their entire fleets to conform to CARB's coercive demands, resulting in nationwide market distortions and calamitous effects inconsistent with true federalism.³¹

For those reasons, EPA's waiver decision greenlighting CARB's automotive climate rules is currently under strong legal challenge by [several states](#) and [industry groups](#) in the U.S. Court of Appeals for the D.C. Circuit.³²

The new locomotive rule is likely to face an even stronger court challenge.

Railroads are the paradigmatic instrumentality of interstate commerce, and so, not surprisingly, Congress has provided for exclusive federal regulation of railroad operations and locomotives—economic, environmental, and safety regulation.

The Interstate Commerce Commission Termination Act (ICCTA) gives the federal Surface Transportation Board (STB) sole regulatory authority over the economics and business practices of railroads,³³ and it preempts state regulations that “have the effect of managing or governing rail transportation” or “unreasonably burdening or interfering with” railroad operations.³⁴

Every part of CARB's locomotive rule is plainly barred by the ICCTA—the requirements to retire older locomotives from service and transition to new locomotive technologies, the restrictions on locomotive emissions

²⁴ See CARB, [Notice of Public Availability of Modified Text and Availability of Additional Documents and Information—Proposed In-Use Locomotive Regulation](#) (Mar. 1, 2023), p. 8.

²⁵ Section 2478.9.

²⁶ See section 2478.12.

²⁷ Section 2478.10.

²⁸ See section 2478.9(a).

²⁹ 40 CFR § 1033.115(g).

³⁰ Section 2478.9(b) & (c).

³¹ See Steven G. Bradbury, The Heritage Foundation, Commentary, [California's Radical Effort to Transform America's Auto Industry: Not Your Forefathers' Idea of Federalism](#) (Jan. 30, 2023).

³² *Ohio v. EPA*, Case No. 22-1081 (D.C. Cir.) (scheduled for oral argument Sept. 15, 2023, before Judges Wilkins, Childs, & Garcia).

³³ See 49 U.S.C. § 10501 (setting forth STB's exclusive jurisdiction over rail “transportation”); *see id.* § 10102(9) (defining rail “transportation”).

³⁴ *Delaware v. STB*, 859 F.3d 16, 19 (D.C. Cir. 2017) (internal quotation marks removed); *see* 49 U.S.C. § 10501(b).

and usage, the Spending Account obligations, the idling restrictions, the administrative fees, and even the reporting and recordkeeping obligations. They would all directly affect the management of railroads and impose substantial burdens on their business operations. If CARB can impose these requirements, then every other state could put different restrictions on railroads, defeating Congress's plan for uniform national regulation. Indeed, up until the current rulemaking, CARB had conceded that the ICCTA shields railroads from direct state regulation of locomotive emissions and usage.³⁵ It's now attempting to reverse course under orders from Governor Newsom.³⁶

In terms of environmental regulation, the Clean Air Act grants EPA exclusive authority to set emissions standards for new and remanufactured locomotives and locomotive engines and expressly preempts states from imposing any such standards of their own.³⁷ Unlike with automobiles, EPA is not allowed to grant any waiver from this preemption provision, but, if certain standards are met, it may authorize California to regulate emissions from *non-new locomotives and engines*,³⁸ which EPA interprets to mean a locomotive or engine that has reached 133 percent of its useful life following original manufacture or remanufacture.³⁹ Even putting ICCTA preemption aside, CARB cannot attempt to enforce its proposed rule without the EPA's regulatory authorization.

Although CARB is doubtless banking on cooperation from the Biden administration, EPA could not authorize CARB's locomotive rule without violating the Clean Air Act. CARB's proposed ban on older locomotives would sweep in some remanufactured locomotives that the EPA defines as "new" for purposes of preemption. Even if the ban were amended to cover only non-new locomotives, the Spending Account obligation and the provisions requiring locomotive operators to purchase or lease only zero-emission locomotives going forward would still constitute preempted regulation. The purpose and intended effect of these requirements are to ensure that all *new locomotives* purchased or leased for use in California (or for use anywhere by the Class I railroads) will satisfy CARB's preferred emissions standard (zero emissions). They therefore fall within the scope of Clean Air Act preemption because they undeniably "relat[e] to the control of emissions from" new locomotives.⁴⁰

Finally, the federal Locomotive Inspection Act governs the safety of all railroad equipment and operations. It provides that railroads may only use locomotives and other pieces of rail equipment that are "in proper condition and safe to operate" as determined in accordance with regulations issued by the Secretary of Transportation.⁴¹ The Supreme Court has held that this law "occup[ies] the entire field of regulating locomotive equipment" and prohibits any state rules that would "require railroads to equip their locomotives with parts meeting state-imposed specifications."⁴² Under this broad prohibition, the idling restrictions in CARB's proposed rule are barred.

Considering all these imposing legal barriers, CARB should scrap its locomotive rule. But that's not likely to happen: The agency has just taken public comment on some relatively minor revisions and is expected to finalize the rule soon. The latest version has an effective date of January 1, 2024. If CARB does move forward as expected, the two railroad associations, AAR and ASLRRRA, are primed to seek a preliminary injunction to block the rule from going into effect, and federal law is very much on their side.

³⁵ See CARB Office of Legal Affairs, June 2005 ARB/Railroad Statewide Agreement on Particulate Emissions from Rail Yards—Public Comments Raising Legal Issues and Agency Responses (Oct. 24, 2005), pp. 9-29 (discussing case law and STB precedents under ICCTA and recognizing substantial likelihood that state environmental restrictions directed at rail operations, including emissions limits, idling requirements, and others, would be preempted).

³⁶ See Gavin Newsom, Governor of California, [Executive Order N-79-20](#) (Sept. 23, 2020), § 2(c) (directing CARB to develop proposals "to achieve 100 percent zero-emission from off-road vehicles and equipment operations in the State by 2035"); CARB Staff Report, [Initial Statement of Reasons](#) (Sept. 20, 2022), p. 64 (explaining that the proposed locomotive rule is required to support the directive in Executive Order N-79-20).

³⁷ See 42 U.S.C. § 7547(a)(5) (granting EPA authority to set emissions standards for "new locomotives and new engines used in locomotives"); *id.* § 7543(e)(1) (preempting all state regulation "relating to the control of emissions from" new locomotives or locomotive engines); 40 CFR § 1033.901 (providing that when a locomotive or engine is "remanufactured," it "becomes new" for purposes of emissions controls); *id.* § 1074.12 (confirming scope of preemption).

³⁸ See 42 U.S.C. § 7543(e)(2).

³⁹ See 40 CFR § 1074.12(b); *id.* § 1033.101(g) (providing that the "useful life" is a minimum of ten years or a certain amount of usage but requiring the manufacturer to specify a longer period if the locomotive or engine is designed to last longer).

⁴⁰ 42 U.S.C. § 7543(e)(1).

⁴¹ See 49 U.S.C. § 20701. This regulatory authority is exercised by the Federal Railroad Administration.

⁴² *Kurns v. Railroad Friction Prods. Corp.*, 565 U.S. 625, 631, 636 (2012) (internal quotation marks removed).