

Revisions to Preemption Regulations for Locomotives and Locomotive Engines

Response to Comments



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Response to Comments

Compliance Division
and
Assessment and Standards Division

Office of Transportation and Air Quality
U.S. Environmental Protection Agency

Table of Contents

List of Commenters Included Verbatim in This Document.....	iii
1 Introduction.....	4
2 General Support.....	5
3 Critical Comments.....	29
3.1 Small Business Concerns.....	29
3.2 Concerns regarding the status of state-level controls.....	32
4 Miscellaneous Comments Unrelated to Preemption.....	46
Appendix A: Other Comments Received, Not Reproduced Verbatim in Text.....	84
Appendix B: List of Testifiers at Public Hearings.....	85

List of Commenters Included Verbatim in This Document

Organization
Allergy & Asthma Network et al.
American Free Enterprise Chamber of Commerce
American Short Line and Regional Railroad Association
American Soybean Association
American Thoracic Society
Association of American Railroads
California Air Resources Board
District of Columbia Department of Energy and the Environment
Environmental Defense Fund
Evergreen Action
International Council on Clean Transportation
Moving Forward Network et al.
National Association of Clean Air Agencies
Northeast States for Coordinated Air Use Management
South Coast Air Quality Management District
State of California et al.
Westinghouse Air Brake Technologies Corporation

1 Introduction

EPA's Proposed Rule: Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles - Phase 3 was signed by Administrator Michael Regan on April 11, 2023. A pre-publication version of the proposal was made available on EPA's website on April 12, 2023, after Administrator Regan's announcement of the program but prior to publication of the proposal in the Federal Register on April 27, 2023 (88 FR 25926 et seq.). The proposal indicated that the rule would be open for public comment until June 16, 2023. The Docket ID No. for the rule is EPA-HQ-OAR-2022-0985.

As part of that proposed rule, EPA also proposed revisions to our locomotive preemption regulations at 40 CFR part 1074. The locomotive preemption proposal shares a docket ID number with the Heavy-Duty Phase 3 proposal. We have decided to finalize this locomotive preemption portion of the proposal as a separate final rule. This Response to Comments (RtC) document is a compilation of public comments submitted to the public docket pertaining to the locomotive preemption portion of this rulemaking action, along with EPA's responses to those comments. Some aspects of our responses appear in the preamble to the separate locomotive preemption final rule. This RtC document is organized by category of comment topic. The original documents submitted by commenters, including any attachments, footnotes, tables, and figures are included in the docket.

Twenty written comments were submitted to the public docket related to the locomotive preemption portion of EPA's proposal. Most of these comments generally express support for the proposal, although some express concerns with its adoption. 17 of the comments provide specific information and feedback about particular aspects of EPA's proposal or other implications of the action and are reproduced verbatim in this RtC document. An alphabetical list of these commenters can be found at the beginning of this document. The unique comments are organized by issue topic in this document. The remaining unique comments are listed in Appendix A. These comments express general support for the proposal but without detailed data, information, or comment relating to specific provisions of the proposal or EPA's supporting analysis. The comments listed in Appendix A are not reproduced verbatim in this document, as these comments did not raise issues with reasonable specificity. EPA held a public hearing on the proposal, and the transcript of that hearing is included in the docket.¹ Appendix B contains a list of the testifiers.

The responses presented in this RtC document are intended to augment the rationale and responses to comments that appear in the preamble to the final rule and to address comments not discussed in the preamble to the final rule. To the extent there is any confusion or apparent inconsistency between this RtC document and the preamble, the preamble itself remains the definitive statement of the rationale for the final rule. This document and the preamble to the final rule should be considered collectively as EPA's response to all of the significant comments submitted on the locomotive preemption proposal.

¹ See docket ID EPA-HQ-OAR-2022-0985-2666. During the 2-day public hearing (May 2 and 3, 2023), dozens of individuals testified and 16 mentioned locomotive preemption.

2 General Support

Comments by Organizations

Organization: American Thoracic Society (ATS)

ATS supports EPA’s proposal to allow state and local regulation of diesel train engine emissions. The ATS urges EPA to finalize and implement its proposal to allow states and municipalities to regulate emissions from diesel train engines. For many communities, emissions from train engines, particularly switcher engines, are a significant modifiable source of local air pollution and GHG emissions. As noted in the proposed rule, current EPA regulations pre-empt state and municipal governments from requiring the adoption of readily available emissions control technology in non-new train engines. Because of the long-life cycle of train engines, blocking states and municipal governments from requiring these available emissions reductions places significant and long-term air pollution emissions burdens on local communities. The ATS support EPA’s proposal to rescind 40 CFR 1074.12 to give states and local governments the option to seek readily available improvements in non-new train engine emissions while still preserving EPA authority regarding emission from new and rebuilt train engines. [EPA-HQ-OAR-2022-0985-1517-A1, pp. 4-5]

Organization: Allergy & Asthma Network et al.

EPA Should Finalize Locomotive Amendments

We appreciate EPA’s proposal to correct course on preemption of locomotive regulations. The proposed language would enable EPA’s preemption regulations to more closely track to the language in the Clean Air Act and avoid unintended impediments to state policy development. [EPA-HQ-OAR-2022-0985-1532-A1, p. 4]

We support EPA’s proposed updates to the current locomotive preemption language. We believe this is a pragmatic approach that will continue to require EPA to judge the need for more health-protective state policies through the waiver review process, but will not prohibit more health-protective concept development by default. [EPA-HQ-OAR-2022-0985-1532-A1, p. 5]

Organization: California Air Resources Board (CARB)

Part III. Locomotive State Preemption Regulations

Affected pages: 26092-26096

A. Introduction

CARB staff submits these comments in support of the U.S. EPA proposed revisions to U.S. EPA’s Preemption Regulations for new locomotives and new engines used in locomotives (Locomotive Preemption Regulations), contained within the NPRM on GHG Emissions Standards for HDVs—Phase 3.²²³ This portion of the comment letter is limited to the portion of the proposed rulemaking addressing revisions to the Locomotive Preemption Regulations.²²⁴ [EPA-HQ-OAR-2022-0985-1591-A1, p.71]

223 U.S. EPA’s Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles—Phase 3, Proposed Rules, 88 Fed. Reg., April 27, 2023, pages 26092-26096. (revising 40 CFR 1074.10, 1074.12, and 1074.101) (hereafter Notice of Proposed Rulemaking or “NPRM”).
<https://www.govinfo.gov/content/pkg/FR-2023-04-27/pdf/2023-07955.pdf>

224 Ibid.

CARB staff urges U.S. EPA to adopt the proposed revisions to U.S. EPA’s Locomotive Preemption Regulations. Railroads continue to operate primarily older locomotives in California, and those older locomotives are currently subject only to emission controls less stringent than those currently applicable to new locomotives. CARB staff projects locomotive emissions will become the predominant source of freight emissions in California this year and, due to their proximity to disadvantaged communities, these emissions have a disproportionate impact on overburdened areas. Further, reducing locomotive emissions will be critical to California attaining National Ambient Air Quality Standards (NAAQS). [EPA-HQ-OAR-2022-0985-1591-A1, p.72]

The current regulatory language has the potential to cause confusion and deter California—as well as other states—from exercising its congressionally preserved authority to address the problem caused by emissions from non-new locomotives and locomotive engines under the CAA.²²⁵ The proposed revisions bring the Locomotive Preemption Regulations into clearer alignment with the statutory language in the CAA. Therefore, U.S. EPA should adopt the proposed revisions. [EPA-HQ-OAR-2022-0985-1591-A1, p.72]

225 This comment letter uses the term “non-new” to differentiate from “new,” as used in the NPRM. See NPRM at 26,092, fn. 1013.

3. Congress Preserved State Authority to Control Emissions from Non-New Locomotives

In the CAA, Congress expressly preserved California’s authority to control emissions from non-new locomotives and locomotive engines. The statute provides that states are prohibited from enforce emission control as to “the following new nonroad engines or nonroad vehicles” including “[n]ew locomotives or new engines used in locomotives.”²⁵³ [EPA-HQ-OAR-2022-0985-1591-A1, p.77]

253 42 U.S.C. § 7543(e)(1), (e)(1)(B) (italics added).

In the following subparagraph, the statute provides that U.S. EPA shall authorize California to enforce emission controls for “any nonroad vehicles or engines other than those referred to” in the preceding subparagraphs.²⁵⁴ Other states are permitted to adopt California’s standards and enforce them as state law, if they have received authorization from U.S. EPA.²⁵⁵ [EPA-HQ-OAR-2022-0985-1591-A1, p.77]

254 Id., § 7543(e)(2)(A).

255 Id., § 7543(e)(2)(B).

Thus, Congress’s intent with respect to the regulation of locomotive emissions is apparent on the face of the statute: California and other states are preempted only from regulating emissions from new locomotives, and the CAA expressly preserves California’s and the other states’ authority to regulate emissions from non-new locomotives.²⁵⁶ [EPA-HQ-OAR-2022-0985-1591-A1, p.77]

256 See also *Engine Mfrs. Ass'n v. U.S. E.P.A.*, 88 F.3d 1075, 1091 (D.C. Cir. 1996) (discussing Congress's intent to protect California's ability to continue to develop nonroad emission standards).

C. Discussion

1. The Proposed Revisions to the Locomotive Preemption Regulations Are Warranted to More Clearly Align with the CAA

U.S. EPA should adopt the proposed revisions to its Locomotive Preemption Regulations. As U.S. EPA recognizes, the current regulatory text could be interpreted as “extending preemption well beyond the CAA language.”²⁵⁷ [EPA-HQ-OAR-2022-0985-1591-A1, p.78]

257 NPRM at 26,092

As the NPRM discusses, the Locomotive Preemption Regulations contain two parts. The first part—subparagraph (a)—properly tracks the language of the CAA. It provides: “States and localities are preempted from adopting or enforcing standards or other requirements relating to the control of emissions from new locomotives and new engines used in locomotives.”²⁵⁸ It is the second part—subparagraph (b)—that has the potential to cause confusion and deter the proper exercise of state authority under the CAA. This part purports to extend preemption to a period equivalent to 133 percent of the useful life beginning at the point the locomotive or engine becomes new.²⁵⁹ As U.S. EPA observes in the NPRM, the CAA does not provide any useful life concept or other preemption period for nonroad vehicles and engines, and U.S. EPA has not adopted any similar preemption provision for other nonroad vehicles and engines.²⁶⁰ [EPA-HQ-OAR-2022-0985-1591-A1, p.80]

258 40 CFR § 1074.12(a).

259 *Id.*, § 1074.12(b); NPRM at 26,092.

260 NPRM at 26,092, fn. 1012.

“[A]gencies have no special authority to pronounce on pre-emption absent delegation by Congress.”²⁶¹ Congress specifically delimited the scope of preemption for locomotives and locomotive engines and did not delegate authority to U.S. EPA to change it.²⁶² Under section 209(e)(1), only U.S. EPA may adopt standards to control emissions from the new nonroad vehicles and engines specified therein, which includes new locomotives and engines.²⁶³ States are prohibited from adopting standards applying to such nonroad vehicles and engines.²⁶⁴ But section 209(e)(2) specifically preserves California's authority to adopt standards applicable to non-new locomotives and engines.²⁶⁵ Congress required U.S. EPA to authorize California emission regulations for all other nonroad vehicles and engines, unless U.S. EPA could make one of three factual findings.²⁶⁶ [EPA-HQ-OAR-2022-0985-1591-A1, p.78]

261 *Wyeth v. Levine*, 555 U.S. 555, 577 (2009); see also *Louisiana Pub. Serv. Comm'n v. FCC*, 476 U.S. 355, 357 (1986) (“[A]n agency literally has no power to act, let alone pre-empt the validly enacted legislation of a sovereign State, unless and until Congress confers power upon it.”).

262 42 U.S.C. § 7543(e).

263 *Id.*, §§ 7543(e)(1), 7547(a)(5).

264 *Id.*, § 7543(e)(1).

265 *Id.*, § 7543(e)(2).

266 *Id.*, § 7543(e)(2)(A).

Section 209(e) does not delegate U.S. EPA authority to alter the scope of preemption or the sources to which it applies. To the contrary, Congress chose to establish a waiver process mirroring the one applicable to motor vehicles in Section 209(b)(1) under which U.S. EPA routinely grants waivers, as directed in the statute.²⁶⁷ Nor does the direction to U.S. EPA contained in Section 209(e) to “issue regulations to implement this subsection” provide U.S. EPA with authority to expand the scope of categorical preemption Congress itself defined.²⁶⁸ The text provides no indication that “Congress intended [EPA] regulations ... to displace state law[s]” other than those Congress itself expressly chose to displace through the CAA.²⁶⁹ Indeed, where Congress intends to authorize U.S. EPA to categorically preempt state law under the CAA, it says so in no uncertain terms.²⁷⁰ The direction to “implement” the categorical preemption decisions Congress already made bears no resemblance to such provisions and, does not authorize U.S. EPA to change the scope of categorical preemption.²⁷¹ [EPA-HQ-OAR-2022-0985-1591-A1, p.79]

267 *Id.*, § 7543(b)(1).

268 *Id.*, § 7543(e) (final sentence).

269 See *Louisiana Pub. Serv. Comm’n*, 476 U.S. at 357.

270 E.g., 42 U.S.C. § 7545(c)(4)(A).

271 See *Nat. Res. Def. Council v. E.P.A.*, 777 F.3d 456, 473 (D.C. Cir. 2014) (vacating EPA implementation regulations based on exceeding and conflicting with the CAA); see also *S.E.C. v. Sloan*, 436 U.S. 103, 118 (1978) (courts reject agency interpretations that are inconsistent with the statute or frustrate congressional policy underlying the statute); *Ry. Lab. Executives’ Ass’n v. Nat’l Mediation Bd.*, 29 F.3d 655, 670 (D.C. Cir. 1994) (agency’s power is no greater than that delegated to it by Congress); *Callan v. G.D. Searle & Co.*, 709 F. Supp. 662, 668 (D. Md. 1989) (finding implementing regulations that exceed scope of preemption set forth in statute contradicts Congressional intent and is not based on a permissible construction of the statute).

U.S. EPA is correct to be concerned that its existing Locomotive Preemption Regulations could be read as extending preemption beyond the CAA.²⁷² Because U.S. EPA has no authority to extend categorical preemption beyond the scope Congress expressly delineated, U.S. EPA’s NPRM to clarify that it has not done so is entirely appropriate. As U.S. EPA correctly observes, the text of Section 209(e)(2)(A) clearly anticipates U.S. EPA making factual findings on a record that includes public comment, not pre-determining that certain regulations are categorically preempted.²⁷³ As part of that process, U.S. EPA may evaluate on a “case-by-case basis” whether it believes a given California law impermissibly regulates new locomotives or new engines.²⁷⁴ U.S. EPA’s proposed revisions to its regulations properly return to that approach as Congress intended. [EPA-HQ-OAR-2022-0985-1591-A1, p.79]

272 NPRM at 26,092.

273 *Id.* at 26,095; see also 42 U.S.C. § 7543(e)(2)(A).

274 NPRM at 26,095.

2. There Is No “Public Benefit” to Retaining the Current Regulatory Text; Retaining the Text Would Be Detrimental

U.S. EPA has asked for comments on “to what extent there would be public benefit if [it] were to retain the current regulatory text.”²⁷⁵ CARB staff does not believe there is any public benefit to retaining the existing text. At best, the text creates confusion; at worst, it creates an obstacle to state regulations Congress intended to permit. In either case, there is no benefit to keeping it, and the public is best served by U.S. EPA clarifying that it has no authority to expand the scope of categorical preemption and will, thus, consider whether a California regulation is preempted on a case-by-case basis as Congress intended. [EPA-HQ-OAR-2022-0985-1591-A1, p.80]

²⁷⁵ Ibid.

CARB staff agrees with U.S. EPA that there are potential state regulations that plainly regulate non-new locomotives but that some might claim are categorically preempted (i.e., ineligible for Section 209(e)(2)(A) authorization) by U.S. EPA’s existing regulation.²⁷⁶ U.S. EPA’s two examples are far from exhaustive, but they illustrate the need to clarify that U.S. EPA cannot, and has not, extended the scope of categorical preemption beyond Congress’s express design. Again, Congress expressly chose to preserve space for state regulation of non-new locomotive emissions. The finalization of the proposed regulatory changes will ensure that space remains available to states as Congress intended. That is in the public interest. [EPA-HQ-OAR-2022-0985-1591-A1, p.80]

²⁷⁶ NPRM at 26,095.

As explained above, it is critical for California to retain its congressionally preserved authority to regulate emissions from non-new locomotives. Locomotives make a significant contribution to harmful pollution, especially in communities already overburdened, and present a real obstacle to NAAQS attainment.²⁷⁷ [EPA-HQ-OAR-2022-0985-1591-A1, p.80]

²⁷⁷ See, supra, §§ II.A., B.

D. Conclusion

For all of the reasons stated above, CARB staff respectfully requests that U.S. EPA finalize the proposed revisions to its Locomotive Preemption Regulations. [EPA-HQ-OAR-2022-0985-1591-A1, p.80]

Organization: Environmental Defense Fund (EDF)

VIII. EDF supports EPA’s proposal to revise the locomotive preemption regulations

The Proposal includes a proposed change to EPA’s regulations that interpret the scope of preemption under CAA section 209(e)(1)(B), which precludes state or local “standard[s] or other requirement[s] relating to the control of emissions from ... [n]ew locomotives or new engines used in locomotives.” 42 U.S.C. § 7543(e)(1)(B); see 88 Fed. Reg. at 26,092-96. Specifically, EPA proposes to eliminate a longstanding regulation, 40 C.F.R. § 1074.12(b), that specifies a “preemption period” equivalent to 133% of the useful life of a new locomotive and that enumerates examples of preempted requirements. See *id.* As discussed below, we strongly support the proposed change, which would align EPA’s regulations with the text of the Clean Air Act and reflect the proper scope of state and local authority to regulate non-new locomotives. EDF has separately joined comments to this docket from the Moving Forward Network and

allied organizations, which likewise support EPA’s proposed change to the preemption regulations. [EPA-HQ-OAR-2022-0985-1644-A1, p. 93]

Although EPA has regulated emissions from new locomotives and engines since 1998, the agency recognizes that “[l]ocomotives remain a significant source of emissions, often disproportionately impacting the health of communities that are located near railyards and ports.”²⁵² This is due in part to the fact that “the very slow natural fleet turnover of this sector results in older locomotives and locomotive engines remaining in use for decades.”²⁵³ Indeed, “the service life of a locomotive can extend to 40 years and beyond.” 88 Fed. Reg. at 26,093. As such, state and local governments have expressed increasing interest “in addressing emissions from non-new locomotives for areas located along high traffic rail lines and/or in communities with environmental justice concerns.” *Id.* But EPA’s decades-old preemption regulations remain a barrier to innovative state regulations that could protect public health from dangerous locomotive emissions consistent with the CAA. *Id.* at 26,092. [EPA-HQ-OAR-2022-0985-1644-A1, p. 94-95]

252 Press Release, EPA Responds to Petitions to Address Harmful Emissions from Locomotives (Nov. 9, 2022), <https://www.epa.gov/newsreleases/epa-responds-petitions-address-harmful-emissions-locomotives>.

253 EPA, Petitions to Address Harmful Emissions from Locomotives (Jan. 4, 2023), <https://www.epa.gov/regulations-emissions-vehicles-and-engines/petitions-address-harmful-emissions-locomotives>.

Specifically, in a 1998 rulemaking, EPA established and defined a “preemption period” equivalent to 133% of the useful life of a new locomotive. 63 Fed. Reg. 18,978 (Apr. 16, 1998); 40 C.F.R. § 1074.12(b). “Useful life” is separately defined as “the period during which the locomotive engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as work output or miles”—approximately 10 years, in practice. 40 C.F.R. § 1033.901. EPA’s regulations specify that the preemption period applies to requirements that “include, but are not limited to ... emission standards, mandatory fleet average standards, certification requirements, retrofit and aftermarket equipment requirements, and nonfederal in-use testing requirements.” *Id.* § 1074.12(b). The preemption period is unique to locomotives; “EPA’s regulations do not set an equivalent period of preemption for any other class of nonroad engines.” 88 Fed. Reg. at 26,092, n.1012. [EPA-HQ-OAR-2022-0985-1644-A1, p. 95]

Now, EPA proposes to find that its existing regulations, including the regulatory definition of a preemption period, “extend[] preemption well beyond the CAA language ... to an extended point at which locomotives and engines are no longer new,” and therefore are “impeding states from adopting innovative programs to reduce locomotive emissions that may be permissible under CAA section 209(e)(2).” 88 Fed. Reg. at 26,092. We agree EPA should finalize its proposal to delete 40 C.F.R. § 1074.12(b). [EPA-HQ-OAR-2022-0985-1644-A1, p. 95]

The scope of CAA preemption of locomotive requirements is clear. The text of CAA section 209 plainly preempts only state and local regulation of “new” locomotives and engines, for which EPA sets emission standards, while preserving state and local authority to regulate non-new locomotives and engines. See 42 U.S.C. § 7543(e); see also *id.* § 7547(a)(5) (EPA “shall promulgate regulations containing standards applicable to emissions from new locomotives and new engines used in locomotives”). Congress’ intent to preserve state and local authority over non-new locomotives and engines is evident from the structure of CAA section 209(e), which

requires EPA, under certain criteria, to waive preemption of California emission standards or requirements for non-new locomotives and authorizes other states to adopt standards identical to California’s standards. Id. § 7543(e)(2)(A)-(B). [EPA-HQ-OAR-2022-0985-1644-A1, p. 95-96]

EPA’s existing regulations, however, prohibit state and local requirements that do not significantly affect the design or manufacture of new locomotives or locomotive engines. EPA’s regulations are misaligned with the CAA in two key ways. First, 40 C.F.R. § 1074.12(b) enumerates examples of state requirements, including “retrofit and aftermarket equipment requirements,” that do not necessarily affect the design and manufacture of new locomotives in every case and therefore are not categorically preempted. The overbreadth of EPA’s list of enumerated examples has become particularly evident in light of “rapid technological development” since EPA promulgated the regulations in 1998. 88 Fed. Reg. at 26,096. [EPA-HQ-OAR-2022-0985-1644-A1, p. 96]

Second, 40 C.F.R. § 1074.12(b) defines a preemption period equivalent to 133% of the useful life of a new locomotive—which, by its very terms, exceeds the point at which a locomotive is “new” and inappropriately intrudes on state and local authority over non-new locomotives.²⁵⁴ It would be unreasonable for EPA to retain a preemption period that impedes beneficial state regulation Congress authorized, and that is disconnected from EPA’s authority over new locomotives. [EPA-HQ-OAR-2022-0985-1644-A1, p. 96]

254 See EPA, Summary and Analysis of Comments on the Notice of Proposed Rulemaking for Emission Standards for Locomotives and Locomotive Engines, EPA-420-R-97-101, at 19 & app. C (Dec. 1997).

Organization: Evergreen Action

Finally, we would like to express enthusiastic support for the portion of the rule relating to state control of locomotive emissions. Locomotives in the United States operate on some of the oldest and dirtiest technology, and must be regulated in a more comprehensive manner. Removing EPA’s likely inappropriate preemption language, which has always been in tension with the Clean Air Act and public health needs, and allowing states to finally have the power to regulate these emissions sources is an important step towards holistically addressing the full scope of emissions from the transportation sector, and we look forward to engaging with EPA on future freight regulations. [EPA-HQ-OAR-2022-0985-1595-A1, p. 3]

Organization: International Council on Clean Transportation (ICCT)

ICCT supports EPA’s proposed revision of its regulations addressing preemption of state regulation of locomotives and new engines used in locomotives. The proposal allows California to proceed with innovative programs and regulatory policies to address emissions from in-use locomotives. The proposal would permit the state to move forward with a pending locomotive in-use regulation, which would increase the pace at which locomotive emissions are reduced and increase the opportunity to transition to zero-emission locomotives. [EPA-HQ-OAR-2022-0985-1553-A1, p. 5]

Organization: Moving Forward Network (MFN) et al.

The comments below include a detailed analysis in strong support of EPA’s proposal to align its locomotive preemption regulations with the text of the Clean Air Act. EPA exceeded its statutory authority in adopting a period of preemption and categories of preempted control measures for both new and non-new locomotives and engines used in locomotives. Removing 40 CFR Section 1074.12(b) is necessary to align EPA’s preemption regulations with Section 209(e)(2) of the Clean Air Act and the cooperative federal system Congress designed in the Clean Air Act. [EPA-HQ-OAR-2022-0985-1608-A3, pp. 1 - 2]

II. The Clean Air Act’s cooperative federalism system requires the federal government and states to work together to control air pollution and improve air quality.

Congress purposefully designed the Clean Air Act (CAA) to require States and the federal government to work in partnership under a model of cooperative federalism to achieve clean air. Under the cooperative federalism framework, federal and state authorities have designated roles set forth in the text of the CAA. As Congress noted, federal leadership “is essential for the development of cooperative Federal, State, regional, and local programs to prevent and control air pollution,” while “air pollution control at its source is the primary responsibility of States and local governments.”¹⁴ [EPA-HQ-OAR-2022-0985-1608-A3, p. 11]

14 42 U.S.C. § 7401.

The designated roles in this partnership are as follows. The federal government promulgates the national ambient air quality standards, or NAAQS, for criteria pollutants that might “cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare.”¹⁵ Each state has “the primary responsibility for assuring air quality within the entire geographic areas” comprising the state.¹⁶ Every state must adopt a State Implementation Plan, or SIP, which prescribes “the manner in which . . . air quality standards will be achieved and maintained.”¹⁷ SIPs must include enforceable emission limitations and control measures as needed to meet the NAAQS.¹⁸ [EPA-HQ-OAR-2022-0985-1608-A3, pp. 11 - 12]

15 Id. § 7408.

16 Id. § 7407(a).

17 Id.

18 Id. § 7410(a)(2).

Importantly, except where the CAA enumerates areas for exclusive federal regulation, states retain the full extent of their inherent police powers to regulate emissions.¹⁹ The CAA provides that, except for specified preemptions of certain state regulation of mobile source emissions, “nothing . . . shall preclude or deny the right of any State or political subdivision thereof to adopt or enforce (1) any standard or limitation respecting emissions of air pollutants or (2) any requirement respecting control or abatement of air pollution.”²⁰ [EPA-HQ-OAR-2022-0985-1608-A3, p. 12]

19 Id. § 7416.

20 Id.

As relevant to locomotives, the CAA articulates that federal authorities are tasked with regulating new locomotives and locomotive engines. To this effect, Section 213(a)(5) provides that “the Administrator [of the EPA] shall promulgate regulations containing standards applicable to emissions from new locomotives and new engines used in locomotives.”²¹ [EPA-HQ-OAR-2022-0985-1608-A3, p. 12]

21 Id. § 7547(a)(5) (emphasis added).

In turn, the CAA does preempt state regulation of some—but notably not all—locomotives. Section 209(e) states that “[n]o State or any political subdivision thereof shall adopt or attempt to enforce any standard or other requirement relating to the control of emissions from . . . [n]ew locomotives or new engines used in locomotives.”²² In the following subsection, however, the CAA clarifies that States are authorized “to adopt and enforce standards and other requirements relating to the control of emissions from” any nonroad vehicles or engines other than new locomotives or new locomotive engines.²³ [EPA-HQ-OAR-2022-0985-1608-A3, p. 12]

22 Id. § 7543(e)(1) (emphasis added); see also id. § 7543(a) (similar preemption of state standards for new motor vehicles or new motor vehicle engines).

23 Id. § 7543(e)(1), (2)(A) (“In the case of any nonroad vehicles or engines other than those referred to in subparagraph (A) or (B) of paragraph (1),” which refers only to “[n]ew locomotives or new engines used in locomotives” and “[n]ew engines which are used in construction equipment or vehicles or used in farm equipment or vehicles and which are smaller than 175 horsepower.”).

Section 209(e)(2)(A) further states that EPA “shall . . . authorize” states to adopt and enforce standards for non-new locomotives and non-new engines used in locomotives unless (1) the State’s determination that its “standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards” is arbitrary and capricious; (2) the state does not need these standards “to meet compelling and extraordinary conditions”; or (3) the state standards and enforcement procedures are inconsistent with this section of the CAA.²⁴ [EPA-HQ-OAR-2022-0985-1608-A3, p. 12]

24 Id. § 7543(e)(2).

In sum, states are empowered to regulate non-new locomotives and non-new locomotive engines under the CAA, subject to harmonization with other federal laws. There can be no question of this. Otherwise, it is impossible to reconcile why Congress included Section 209(e)(2)(A)—which establishes the circumstances in which EPA must approve state regulations of non-new locomotives and non-new locomotive engines—in the CAA. [EPA-HQ-OAR-2022-0985-1608-A3, pp. 12 - 13]

Yet, EPA’s 1998 regulation preempted “categories of state regulations . . . even when applied to in-use locomotives and engines for a period equivalent to 1.33 times the useful life period, because of the significant effect such standards and requirements would have on the design and manufacture of new locomotives and new locomotive engines.”²⁵ Broad preemption of state and local efforts to reduce locomotive pollution does not align with the text and cooperative federalism principles underpinning the CAA and warrants EPA’s reconsideration. [EPA-HQ-OAR-2022-0985-1608-A3, p. 13]

25 63 Fed. Reg. 18,978, 18,993 (April 16, 1998).

A. States have a statutory duty to attain the federal air quality standards, including regulating locomotive pollution in line with the Clean Air Act.

Congress adopted the Clean Air Act to “protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population” and “to encourage or otherwise promote reasonable Federal, State, and local government actions . . . for pollution prevention” among other goals.²⁶ As discussed above, under this cooperative federalism regulatory scheme, states have “primary responsibility for assuring air quality” within a given region by submitting implementation plans to achieve and maintain the NAAQS.²⁷ When an area is in “nonattainment” of a standard, such as ozone or particulate matter, the state must develop a comprehensive State Implementation Plan (SIP) describing how it will achieve that standard.²⁸ [EPA-HQ-OAR-2022-0985-1608-A3, p. 13]

26 42 U.S.C. §§ 7401(b), (c).

27 Id. § 7407(a).

28 Id. §§ 7407(d)(1)(A), 7410(a), 7501(2).

The Clean Air Act explicitly recognizes the authority of states to regulate non-new locomotives in achieving the NAAQS.³² The legislative history of section 209(e) is illustrative. Congress intentionally preempted state regulation of new nonroad vehicles, including locomotives, due to concerns about impeding interstate commerce. However, Congressional members were concerned that these sources were contributing to air quality problems and that their relative contribution to air quality problems were likely to increase over time, furthering the need for EPA to swiftly adopt regulations for new vehicles and to preserve the right of states to regulate nonnew vehicles.³³ Concerned that limiting state authority over nonroad sources would impede air pollution reduction, simultaneously to preempting state regulation of new vehicles, Congress intentionally and expressly maintained state and local government authority to regulate nonnew, in-use locomotives:

As the members know, it was with great reluctance that the Senate conferees agreed to the partial preemption of state authority to control emissions from some new nonroad engines and vehicles. We did so only after the preemption was strictly limited to that it applied only to new engines in three distinct categories States also fully retain existing authority to regulate emissions from all types of existing or in-use nonroad engines or vehicles by specifying fuel quality specifications, operational modes or characteristics or measures that limit the use of nonroad engines or equipment.³⁴ [EPA-HQ-OAR-2022-0985-1608-A3, pp. 14 - 15]

32 42 U.S.C. § 7543(e).

33 U.S. Senate, 136 Cong. Rec. S16895-01, Clean Air Act Amendments-Conference Report (Oct. 27, 1990), 1990 WL 164490, at *S16976 [emphasis added].

34 U.S. Senate, 136 Cong. Rec. S16895-01, Clean Air Act Amendments-Conference Report (Oct. 27, 1990), 1990 WL 164490, at *S16976 (emphasis added).

Another Congressional report explained that “because the preemption is limited to new engine standards only, States can continue to require existing and in-use nonroad engines to reduce emissions by setting fuel requirements, operational conditions or limits on the use of such equipment.”³⁵ [EPA-HQ-OAR-2022-0985-1608-A3, p. 15]

35 U.S. Senate, 136 Cong. Rec. S17232-01, Clean Air Act Amendments-Conference Report (Oct. 26, 1990), 1990 WL 165459, at *S17237.

As such, it's clear under the Clean Air Act that states retain authority to regulate non-new locomotives. And in fact, it's critical for states to regulate these vehicles in order to develop SIPs and attain federal air quality standards. [EPA-HQ-OAR-2022-0985-1608-A3, p. 15]

B. State and local governments must reduce pollution from locomotives to protect public health and advance civil rights.

State and local governments also retain authority to address locomotive pollution to protect public health and advance civil rights. This authority resides in both the state's historic police powers and civil rights statutes. [EPA-HQ-OAR-2022-0985-1608-A3, p. 15]

Railyards, rail corridors, and rail maintenance yards impose significant burdens on neighboring communities. They produce noise, vibrations, and dangerous air pollutants. These facilities are known to expose residents to dangerous and toxic air pollution that contributes to high rates of asthma, cancer, and premature death for the communities living in the shadow of these facilities. CARB studies on California's 18 largest rail yards suggest that residents living within 0.5 miles (2,640 feet) of a rail yard face unacceptable cancer risk because of harmful diesel particulate matter emissions.³⁶ Most often, these are communities of color and low-income communities. These communities often face cumulative impacts due to the concentration of other industrial sources and pollution exposure in their communities, and socioeconomic stressors, meaning that the same amount of pollution can result in more harm than it would if it was located in communities who do not face such stressors. [EPA-HQ-OAR-2022-0985-1608-A3, p. 15]

36 Railyard Health Risk Assessments and Mitigation Measures, Cal. Air Res. Bd., <https://ww2.arb.ca.gov/resources/documents/railyard-health-risk-assessments-and-mitigation-measures> (last visited June 5, 2023) (containing links for 18 Health Risk Assessments).

Thus, it is critical that states and local governments address locomotive operations and reduce pollution from these activities in order to protect public health. Courts have long recognized that state police powers encompass the control of air pollution to protect public health.³⁷ As the Ninth Circuit noted, "[a]ir pollution prevention falls under the broad police powers of the states, which include the power to protect the health of citizens in the state."³⁸ Indeed, over six decades ago, the U.S. Supreme Court found that "[l]egislation designed to free from pollution the very air that people breathe clearly falls within the exercise of even the most traditional concept of what is compendiously known as the police power."³⁹ Vindicating the right for residents to breathe clean air is a well-established and fundamental power of state and local governments. [EPA-HQ-OAR-2022-0985-1608-A3, pp. 15 - 16]

37 Pac. Merch. Shipping Ass'n v. Goldstene, 639 F.3d 1154, 1166 (9th Cir. 2011).

38 Exxon Mobil Corp. v. US EPA, 217 F.3d 1246, 1255 (9th Cir. 2000).

39 Huron Portland Cement Co. v. City of Detroit, 362 U.S. 440, 442 (1960).

This historic police power is maintained within the Clean Air Act and aligned with the purpose of section 209(e), which leaves regulation of non-new locomotives to state and local governments. Indeed, the Clean Air Act contains an explicit, broad provision pertaining to the retention of state authority and stating that nothing within the Act "shall preclude or deny" the

right of a state or local government to adopt or enforce “(1) any standard or limitation respecting emissions of air pollutants or (2) any requirement respecting control or abatement of air pollution.”⁴⁰ Courts have long recognized that there is a presumption “to protect a state’s historic police power in protecting the health and safety of its citizenry unless the clear and manifest purpose of Congress dictates otherwise.”⁴¹ [EPA-HQ-OAR-2022-0985-1608-A3, p. 16]

40 42 U.S.C. § 7416.

41 *Pac. Merch. Shipping Ass’n v. Goldstene*, 639 F.3d 1154, 1166 (9th Cir. 2011) ((ER33 (citing *Rice v. Santa Fe Elevator Corp.*, 331 U.S. 218, 230, 67 S.Ct. 1146, 91 L.Ed. 1447 (1947))).

Historic police powers continue to be an important basis of authority for states and local governments to address rail-related activity. In cases examining state and local regulation of locomotive operations, courts have explicitly recognized that local governments retain historic police powers to address rail-related activity, subject to specific limitations of other federal preemption schemes.⁴² [EPA-HQ-OAR-2022-0985-1608-A3, p. 16]

42 See, e.g., *Green Mountain R.R. Corp. v. Vermont*, 404 F.3d 638, 643 (2d Cir. 2005) (“States and towns may exercise traditional police powers over the development of railroad property, at least to the extent that the regulations protect public health and safety, are settled and defined, can be obeyed with reasonable certainty, entail no extended or open-ended delays, and can be approved (or rejected) without the exercise of discretion on subjective questions.”).

IV. EPA must delete 40 CFR § 1074.12(b) because it inappropriately reaches beyond the scope of the agency’s statutory authority in broadly preempting state and local governments from adopting locomotive control measures.

As the agency recognized in the Notice of Proposed Rulemaking (NPRM), Section 1074.12(b) results in preemption rules that reach beyond the scope of Section 209(e)(1)’s prohibition on requirements that relate to new locomotives and new engines used in locomotives. We support EPA’s proposal to remove Section 1074.12(b) and to make the proposed changes to more closely align the preemption regulations with the CAA. In addition, we ask EPA to confirm that state and local authorities are not preempted from adopting regulations that may relate to the manufacture and design of retrofitting emission controls. [EPA-HQ-OAR-2022-0985-1608-A3, p. 17]

A. EPA’s proposed changes to 40 CFR § 10 to 40 CFR § 101.

In the NPRM, EPA proposed the following changes to its preemption regulations in 40 CFR § 1074.10 to 40 CFR § 101.

1) In 40 CFR § 1074.10, EPA proposes to revise subsection (b) to contain text that is currently located in section 1074.12(a), and move the current text of subsection (b) into a new subsection (c). The proposed section 1074.10 would appear as follows:

- § 1074.10 Scope of preemption.
 - § (a) States and localities are preempted from adopting or enforcing standards or other requirements relating to the control of emissions from new engines smaller than 175 horsepower that are primarily used in farm or construction equipment or vehicles, as defined in this part. For equipment that is used in applications in addition to farming or construction activities, if the equipment is primarily used as

farm and/or construction equipment or vehicles (as defined in this part) it is considered farm or construction equipment or vehicles.

- § (b) States and localities are preempted from adopting or enforcing standards or other requirements relating to the control of emissions from new locomotives and new engines used in locomotives.
- § (c) For nonroad engines or vehicles other than those described in paragraph (a) of this section and § 1074.12, States and localities are preempted from enforcing any standards or other requirements relating to control of emissions from nonroad engines or vehicles except as provided in Subpart B of this part. [EPA-HQ-OAR-2022-0985-1608-A3, pp. 17 - 18]

2) EPA proposes to delete 40 CFR § 1074.12 in its entirety. This proposal would remove the explicit period of preemption as well as the listed categories of state control measures. Because EPA also proposed to relocate current section 1074.12(a) to section 1074.10(b), the proposal would delete the following section only:

- § 1074.12 Scope of preemption-specific provisions for locomotives and locomotive engines . . .
 - § (b) During a period equivalent in length to 133 percent of the useful life, expressed as MW-hrs (or miles where applicable), beginning at the point at which the locomotive or engine becomes new, those standards or other requirements which are preempted include, but are not limited to, the following: emission standards, mandatory fleet average standards, certification requirements, retrofit, and aftermarket equipment requirements, and nonfederal in-use testing requirements. The standards and other requirements specified in the preceding sentence are preempted, whether applicable to new or other locomotives or locomotive engines. [EPA-HQ-OAR-2022-0985-1608-A3, p. 18]

3) EPA proposes a minor housekeeping edit to paragraph (a) of 40 CFR § 1074.101 to refer to the relocated text in section 1074.10(b) that is proposed to move out of 1074.12. The proposal would read as follows:

- § 1074.101 Procedures for California nonroad authorization requests.
 - § (a) California must request authorization from the Administrator to enforce its adopted standards and other requirements relating to control of emissions from nonroad engines or vehicles that are not preempted by § 1074.10(a) or § 1074.10(b). The request must include the record on which the state rulemaking was based.
 - § (b) After receiving the authorization request, the Administrator will provide notice and opportunity for a public hearing regarding such requests. [EPA-HQ-OAR-2022-0985-1608-A3, pp. 18 - 19]

B. Delete the period of preemption for non-federal authorities to adopt locomotive emission controls.

As discussed, states and local governments are empowered to protect public health and must attain federal air quality standards under the Clean Air Act. Section 209(e) of the CAA puts an outer limit on this authority but does not revoke it. Section 209(e)(1) provides that “[n]o State or any political subdivision thereof shall adopt or attempt to enforce any standard or other

requirement relating to the control of emissions from . . . [n]ew locomotives or new engines used in locomotives.”⁴⁴ Section 209(e)(2) establishes the parameters under which the Administrator of the EPA must authorize California’s regulations for any locomotives other than new locomotives or new engines used in locomotives.⁴⁵ [EPA-HQ-OAR-2022-0985-1608-A3, p. 19]

44 42 U.S.C. § 7543(e)(1).

45 Id. § 7543(e)(2).

In 1998, when EPA adopted the first locomotive emission regulations, it also adopted broad preemption regulations. As part of this regulatory package, EPA extended the period during which non-federal authorities are preempted from participating in efforts to reduce locomotive pollution to 133 percent of the useful life of a locomotive. The useful life of a locomotive is defined using the typical period that a locomotive engine is expected to be properly functioning, which is about 10 years.⁴⁶ This preemption language was codified in 40 CFR § 1074.12(b). This preemption period is not found in the language of the CAA or other statutory directives. [EPA-HQ-OAR-2022-0985-1608-A3, p. 19]

46 62 Fed. Reg. 6366, 6378 (Feb. 11, 1997); 40 CFR § 1033.101(g).

At the same time, EPA adopted 40 CFR § 1033.901, which set forth various definitions relating to locomotives.⁴⁷ Importantly, EPA defined “new”—the critical word in the context of locomotive preemption—to include “[a] locomotive or engine . . . if its equitable or legal title has never been transferred to an ultimate purchaser,” as well as “[a] locomotive or engine . . . if it is remanufactured or refurbished.”⁴⁸ [EPA-HQ-OAR-2022-0985-1608-A3, p. 19]

47 63 Fed. Reg. 18980 (April 16, 1998).

48 40 CFR § 1033.901.

Because locomotives have very long service lives—up to 60 or 70 years in some cases—they must undergo several extensive remanufacturing operations to continue service. Remanufacturing is typically needed every 7 to 10 years. Under EPA’s regulations, these remanufactured locomotives were deemed “new” at that point. Once a locomotive regains “new” status as a remanufactured locomotive, it remains under the same or a largely similar emissions tier. In effect, this means a locomotive remains under the same emissions tier from the year it was originally built until the year the engine block is finally unable to continue operations and the locomotive must be retired, several decades later. [EPA-HQ-OAR-2022-0985-1608-A3, p. 19]

In the NPRM, EPA noted that this period of preemption “may be overly restrictive in precluding state consideration of potential measures to reduce emissions from existing locomotives,” and “instead may result in our 1998 preemption rules inappropriately reaching beyond the scope of section 209(e)(1)’s prohibition on requirements that relate to new locomotives and new engines used in locomotives.”⁴⁹ We agree. [EPA-HQ-OAR-2022-0985-1608-A3, pp. 19 - 20]

49 81 Fed. Reg. 26095 (April 27, 2023).

By extending the period of preemption to 133 percent of the useful life of a locomotive, EPA exceeded its statutory authority set forth in Section 209(e)(1) of the CAA. We strongly support EPA’s proposal to remove this period of preemption by deleting 40 CFR § 1074.12(b) and

therefore more closely aligning EPA’s regulations with the CAA. [EPA-HQ-OAR-2022-0985-1608-A3, p. 20]

There is nothing in the text of the CAA or in the legislative history that directs EPA to establish a period in which states and local governments are preempted from adopting or enforcing standards for non-new locomotives or locomotive engines. [EPA-HQ-OAR-2022-0985-1608-A3, p. 20]

Moreover, the effect of this lengthy period of preemption runs contrary to the intent of CAA section 209(e)(2). By adding in a period of preemption (coupled with a definition of “new” that includes remanufactured), EPA communicated to states and local governments that they lack authority to adopt controls for any locomotives in operation in the United States, even though this prohibition is not found in the statutory text. To date, no state or local authority has sought authorization under section 209(e) for any program to address emissions from non-new locomotives or engines. Meanwhile, locomotive pollution has become one of the most significant sources of diesel pollution across the country and the bulk of locomotives remain under the oldest, dirtiest tiers. [EPA-HQ-OAR-2022-0985-1608-A3, p. 20]

At the same time, the period of preemption communicated to locomotive operators that they can continue to operate out of the purview of non-federal control so long as locomotives are remanufactured before the approximately 13-year mark (or 133 percent of useful life). Again, this was never the intent of Section 209(e)(1), as is made clear by the presence of Section 209(e)(2), which sets forth parameters under which the Administrator “shall” authorize California’s regulations for non-new locomotives and engines used in locomotives. [EPA-HQ-OAR-2022-0985-1608-A3, p. 20]

We urge EPA to delete 40 CFR § 1074.12(b) and more closely align EPA’s regulations with the CAA because, in addition to other reasons noted below, the period of preemption exceeds the scope of EPA’s authority. [EPA-HQ-OAR-2022-0985-1608-A3, p. 20]

C. Remove the categorical preemption of specific state control measures.

When EPA adopted 40 CFR § 1074.12(b) in its 1998 regulations, it also prescribed certain categories of state and local action as preempted control measures when applied to both new locomotives and non-new locomotives. Specifically, the regulation declares that states are preempted from adopting: “emission standards, mandatory fleet average standards, certification requirements, retrofit and aftermarket equipment requirements, and nonfederal in-use testing requirements.”⁵⁰ The regulation goes further to claim that such state-specific control measures are preempted “whether applicable to new or other locomotives or locomotive engines.”⁵¹ In adopting this provision, EPA exceeded its statutory authority. EPA must remove this categorical preemption to align with the Clean Air Act. [EPA-HQ-OAR-2022-0985-1608-A3, pp. 20 - 21]

⁵⁰ 40 CFR § 1074.12(b).

⁵¹ Id.

First, this regulation is contrary to federal law because it inappropriately attempts to limit state measures that address pollution from non-new locomotives. As explained in detail in section ___, supra, the Clean Air Act explicitly retains state authority to regulate non-new locomotives.⁵² As noted above, when crafting section 209(e), Congress explicitly recognized that states could

regulate non-new locomotives, including, for example, “by setting fuel requirements, operational conditions or limits on the use of such equipment.”⁵³ It was an overreach for EPA to limit state authority to regulate non-new locomotives in this regulation. EPA should remove this section in order to align with section 209(e)(1)(B). [EPA-HQ-OAR-2022-0985-1608-A3, p. 21]

52 42 U.S.C. § 7543(e)(1)(B).

53 U.S. Senate, 136 Cong. Rec. S17232-01, Clean Air Act Amendments-Conference Report (Oct. 26, 1990), 1990 WL 165459, at *S17237.

Second, the categories of preempted controls listed in this section are inappropriately broad, covering measures that would not significantly affect the design or manufacture of new locomotive engines or vehicles. These regulations were adopted 25 years ago. Technology has developed, further demonstrating that these prescribed categories are outdated and inconsistent with preemption as defined by the statute. As EPA points out in the NPRM, there are several existing technologies, such as the retrofitting of an auxiliary power unit to support engine shutdown for idle reduction, that are available today to control emission reductions of non-new locomotives. This technology and other aftermarket treatments or retrofits can be applied to in-use locomotives without impacting their design and manufacture. Deleting these categorical preemption provisions is essential to aligning the regulations with the reality of emission controls today. [EPA-HQ-OAR-2022-0985-1608-A3, p. 21]

Rather than categorically preempting state action, it is more appropriate for EPA to determine on a case-by-case basis whether individual rules would significantly affect the design and manufacture of new locomotives and engines, and therefore be preempted. Under Clean Air Act section 209(e)(2), EPA is required to review and authorize, subject to certain criteria, California’s adoption and enforcement of standards and other requirements relating to control of emissions from nonroad vehicles or engines other than those referred to in paragraph 209(e)(1), which would include non-new locomotives and non-new engines used in locomotives.⁵⁴ One of the criteria for this review is whether the control measure is consistent with section 209(e) of the Clean Air Act.⁵⁵ Thus, during this inquiry, EPA must determine whether a state action is preempted by applying to “new” locomotives, or if it is a valid exercise of state authority over “non-new” locomotives. The case-by-case analysis will allow for consideration of specific control measures, and needed flexibility as technologies develop. In addition, individuals will have an opportunity to request a hearing and provide public comment on EPA’s review. Given these procedures, there is no risk to removing this categorical preemption. EPA will still need to determine whether an individual rule runs afoul of preemption, and a case-by-case analysis allows for a far more nuanced and accurate analysis than the current overly broad buckets of categorical preemption. [EPA-HQ-OAR-2022-0985-1608-A3, pp. 21 - 22]

54 42 U.S.C. § 7543(e)(2).

55 Id. § 7543(e)(2)(A)(3).

D. Make the accompanying housekeeping edits.

EPA’s proposed housekeeping edits would provide clarity in the regulatory scheme and further alignment with the statutory text of the Clean Air Act. We support these proposed revisions. [EPA-HQ-OAR-2022-0985-1608-A3, p. 22]

EPA proposes to revise subsection 40 CFR § 1074.10(b) to contain text currently located in section 1074.12(a) and move the current text of subsection (b) into a new subsection (c). This would be solely a housekeeping measure, which we support. [EPA-HQ-OAR-2022-0985-1608-A3, p. 22]

After making this change, EPA proposes to delete 40 CFR § 1074.12 in its entirety. This change accounts for the removal of the period of preemption and the categorical preemption of specific state control measures. For the reasons noted in sections __ and __, supra, we support this change. [EPA-HQ-OAR-2022-0985-1608-A3, p. 22]

E. Confirm that non-federal authorities are not preempted from adopting control measures relating to the manufacture and design of retrofitting emission controls.

In the NPRM, EPA notes that where the agency’s proposal is adopted, “[a]ny state authorization application received by EPA would need to demonstrate why the submitted control measure would not significantly affect the design or manufacture of a new locomotive.”⁵⁶ EPA proposes to evaluate authorization applications “on a case-by-case basis” subject to the criteria outlined in section 209(e)(2).⁵⁷ We agree that this standard is appropriate and in line with the plain text and intent of Section 209(e). [EPA-HQ-OAR-2022-0985-1608-A3, p. 22]

56 81 Fed. Reg. 26096 (April 27, 2023).

57 Id.

This standard aligns with the CAA in that it does not extend preemption beyond new locomotives or new engines used in locomotives. Rather, this standard limits preemption to control measures that would “significantly affect the design or manufacture of a new locomotive,” which matches the language in Section 209(e)(1). In turn, this language does not appear to categorically preempt states from requiring the development or use of retrofitting emission controls on locomotives. We believe this reading of the standard is required under Section 209(e)(1) and (2), and seek confirmation of this from EPA. [EPA-HQ-OAR-2022-0985-1608-A3, p. 22]

Recognizing that any evaluation of a locomotive control measure must be considered on a case-by-case basis, we ask EPA to clarify that the ‘significant effect’ test only pertains to the manufacturing and design of new locomotives or engines used in locomotives and does not relate to the manufacturing or design of new aftermarket retrofitting emission controls, as this would exceed the scope of EPA’s statutory authority under CAA section 209(e). [EPA-HQ-OAR-2022-0985-1608-A3, p. 22]

One suggestion is for EPA to expand the example provided in the NPRM regarding the retrofitting of an auxiliary power unit (APU) to support engine shutdown for idle reduction to clarify this inquiry. As EPA notes, “[i]n this scenario, installation of such an APU on a locomotive with an engine shutdown timer can enable the main engine to shut down while maintaining power to auxiliary functions such as air brake pressure and battery state of charge.”⁵⁸ Because of significant advances in locomotive retrofit technology, “[t]here may be sufficient space and fluids onboard to accommodate this component without disrupting the existing equipment or design of new remanufacturing kits.”⁵⁹ Importantly, EPA notes that this technology—which involves the design of pollution control technology that is being bolted on, not the design of a new locomotive or engine—would appear to be within state and local authorities’

control. We ask EPA to confirm that state and local authorities are not categorically preempted from adopting control measures relating to the manufacture and design of retrofitting emission controls. [EPA-HQ-OAR-2022-0985-1608-A3, p. 23]

58 Id. at 26095.

59 Id.

We support EPA taking the critical action of revising its regulations to align with federal law, reinforcing states' rights to regulate emissions from locomotives and rail. EPA's 1998 regulations are overly broad and inconsistent with the Clean Air Act, claiming to preempt states from regulating locomotives during 133 percent of a locomotive's useful life, and inappropriately prescribing categories of preempted state action. These provisions in 40 CFR § 1074.12(b) extend beyond the Clean Air Act, and we strongly support EPA removing this language in this action. Please refer to our comments submitted under separate cover, which focus on the following:

- Locomotive pollution has a significant negative impact on frontline and fenceline communities' health, regional air quality, and climate.
- The Clean Air Act's cooperative federalism system requires the federal government and states to work together to control air pollution and improve air quality.
- States and local governments must reduce locomotive pollution to protect public health and attain federal air quality standards
- We support EPA's proposed changes to its regulatory language. [EPA-HQ-OAR-2022-0985-1608-A1, pp. 123 - 124]

Organization: National Association of Clean Air Agencies (NACAA)

Revise Locomotive Regulations as Proposed

In addition to addressing GHG emissions from heavy-duty trucks EPA includes in the proposal a provision 'to revise its [1998] regulations addressing preemption of state regulation of new locomotives and new engines used in locomotives, to more closely align with language in the Clean Air Act.' Finalizing this provision will remove an impediment to certain state and local actions to address emissions from non-new (i.e., in-use) locomotives. To be clear, NACAA has, for years, advocated for federal action to substantially reduce emissions from all new, remanufactured and in-use locomotives, which are major sources of harmful pollutants that adversely affect public health, particularly that of people who reside in communities near rail yards and railways. Far more protective federal locomotive standards across the board are imperative and will improve air quality everywhere in the country by reducing emissions of NOx and fine particulate matter, including toxic diesel PM. Such controls can also reduce GHG emissions. We continue to urge EPA to make such comprehensive federal action a top priority. At this time, NACAA supports EPA's proposed revision and views it as a modest – but important – first step toward fulfilling a much larger federal responsibility. [EPA-HQ-OAR-2022-0985-1499-A1, pp. 9-10]

The CAA does not bar states from preventing the oldest and dirtiest locomotives from operating within their jurisdictions. Neither does the CAA prevent states from ensuring that

locomotive operators properly use the Automatic Engine Start/Stop Systems (that reduce locomotive idling and related emissions) required by EPA. As with other heavy-duty mobile sources, preventing unnecessary idling is a traditional state role under the CAA. NACAA concurs with EPA that its prohibition of state regulations, as included in 40 C.F.R. 1074.12(b), extends preemption well beyond the scope of CAA section 209(e)(1) and, further, ‘imped[es] states from adopting innovative programs to reduce locomotive emissions that may be permissible under CAA section 209(e)(2).’¹⁷ NACAA further concurs that ‘locomotive emission controls have developed significantly since the 1998 rule, and some of these developments call into question the factual underpinnings of EPA’s prior decision to categorically preempt certain controls up to 133 percent of the regulatory useful life.’¹⁸ [EPA-HQ-OAR-2022-0985-1499-A1, p. 10]

17 Supra note 1, at 26,092

18 Id. at 20,094

As EPA discusses in its proposal, locomotive emission controls can now be used for non-new locomotives without affecting the design and manufacture of new locomotives and/or new engines used in locomotives. EPA identifies two examples of such controls: 1) retrofitting of an auxiliary power unit to support engine shutdown for idle reduction and 2) installation of a new load control calibration strategy that better manages load on the main engine while the locomotive is in line haul service. The agency also writes in the proposal, ‘the very nature of rapid technological development suggests that it is not necessary or possible for EPA to prejudge, as under the current text of 40 CFR 1074.12, all potential forms of state control of existing locomotives regarding whether they should remain preempted with no possibility of authorization under CAA section 209(e)(2). EPA further believes that the examples discussed show there is sufficient information available to more generally call into question the conclusion that all the forms of state control explicitly preempted by the current text in 40 CFR 1074.12(b) would necessarily affect how manufacturers and remanufacturers design new locomotives and new engines used in locomotives.’¹⁹ [EPA-HQ-OAR-2022-0985-1499-A1, p. 10]

19 Supra note 1, at 26,095

EPA should finalize its proposal with respect to locomotives by deleting 40 C.F.R. 1074.12(b) in its entirety and making all other revisions as necessary to fulfill the purpose of this proposed action. Once final, state and local air agencies across the nation will have an opportunity to address emissions that contribute to nonattainment or may push areas on the cusp of nonattainment over the edge. [EPA-HQ-OAR-2022-0985-1499-A1, pp. 10-11]

Organization: Northeast States for Coordinated Air Use Management (NESCAUM) and the Ozone Transport Commission (OTC)

Revision to Preemption Regulation for Locomotives

We agree with EPA that the prohibition of state locomotive regulation contained in 40 C.F.R. § 1074.12(b) exceeds the scope of preemption in CAA Section 209(e)(1)(B), and that the factual underpinnings of EPA’s 1998 final rule establishing Emissions Standards for Locomotives and Locomotive Engines no longer apply. As discussed in the NPRM, locomotive emission controls have advanced significantly since 1998 and can be employed for existing locomotives without affecting the design and manufacture of new locomotives and engines. The NPRM identifies two

potential examples: retrofitting an auxiliary power unit to support engine shutdown for idle reduction; and installing a load control calibration strategy to better manage load on the main engine while the locomotive is in line haul service. Moreover, given the rapid pace of technological development, it is not necessary or possible for EPA to prejudge all potential forms of state control of existing locomotives with no possibility of authorization under CAA Section 209(e)(2). Similarly, as discussed in the NPRM, there is sufficient reason to question EPA's 1998 conclusion that all the forms of state control listed in the current text in 40 C.F.R. § 1074.12(b) would necessarily affect how manufacturers and remanufacturers design new locomotives and locomotive engines. [EPA-HQ-OAR-2022-0985-1562-A1, p. 15]

EPA's proposal, if finalized, would provide California with greater flexibility to explore and develop a specific program to reduce emissions from locomotives, and allow EPA to evaluate a request for authorization from the state on its merits with the benefit of an administrative record. If so authorized, states would gain an important tool to help achieve and maintain the NAAQS. As such, we strongly support EPA's proposal to delete 40 C.F.R. § 1074.12(b) in its entirety and make the other procedural and housekeeping revisions discussed in the NPRM. [EPA-HQ-OAR-2022-0985-1562-A1, p. 15]

Organization: South Coast Air Quality Management District (South Coast AQMD)

Locomotives are projected to emit approximately 16 tons per day of NO_x within the Basin by 2037, which is more than a quarter of the total amount of NO_x we can have in our region and still meet the 2015 8-hour ozone standard. Absent meaningful federal actions it has become incumbent upon CARB, as well as the South Coast AQMD, to identify innovative control strategies using our limited authority to reduce emissions from railroad operations. [EPA-HQ-OAR-2022-0985-1575-A1, p. 4]

South Coast AQMD is therefore supportive of the proposed amendment to delete 40 CFR Section 1074.12 – Scope of preemption-specific provisions for locomotives and locomotive engines. This amendment would remove current regulatory preemption restrictions beyond the original intent of the Clean Air Act. In lieu of a categorical preemption approach per 40 CFR Section 1074.12(b), the U.S. EPA is now proposing to review California's nonroad authorization request on a case-by-case basis, based on the statutory authorization criterion in the Clean Air Act Section 209(e)(1)(B) and 42 U.S.C. 7543(e)(1)(B), namely the demonstration of why the submitted control measure would not significantly affect the design or manufacture of a new locomotive or locomotive engine. However, aside from giving two potential examples of such controls, the Notice of Proposed Rulemaking did not clearly indicate whether a more systematic guidance would be provided in relation to the parameters to be considered in the case-by-case review. Without such guidance, the determination process may be potentially subject to too much uncertain discretion and suffer from inconsistent interpretations of the statutory authorization criterion depending on a particular administration. [EPA-HQ-OAR-2022-0985-1575-A1, p. 4]

We further recommend that, as part of the case-by-case determination process and in a manner consistent with the statutory authorization criterion, the U.S. EPA consider additional factors including: 1) clear air quality need within the state, either in terms of attainment and requirements under the CAA and/or environmental justice consistent with Title VI and applicable presidential executive orders, 2) whether rail sources appear to be less regulated and

cause a disproportionate impact relative to other sources, due to the fact that the state and its political subdivisions have controlled other sources within their authority to the maximal extent possible in terms of technological and economic feasibilities, and 3) whether the proposed level of control being imposed on locomotives is no more stringent than the level of control on other sources of emissions under state authority, such that the submitted control measure is consistent with a broad program aimed at reducing emissions [EPA-HQ-OAR-2022-0985-1575-A1, pp. 4-5]

Organization: State of California et al. (1)

The States of California,¹ Connecticut, Delaware, Maine, Maryland, New Jersey, New York, Oregon, Washington, the Commonwealths of Massachusetts and Pennsylvania, and the District of Columbia (collectively, “our States”) respectfully submit these comments in support of the Environmental Protection Agency’s (“EPA”) proposed revisions to “Preemption of State Standards and Requirements for New Locomotives or New Engines Used in Locomotives,” (Proposed Revisions), contained within the Notice of Proposed Rulemaking for “Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles—Phase 3,” 88 Fed. Reg. 25,926 (April 27, 2023) (NPRM).² [EPA-HQ-OAR-2022-0985-1526-A1, p. 1]

1 The California Attorney General submits these comments pursuant to his independent power and duty to protect the environment and natural resources of the State. See Cal. Const., art. V, § 13; Cal. Gov. Code, §§ 12511, 12600-12612; *D’Amico v. Bd. of Medical Examiners*, 11 Cal.3d 1, 1415 (1974).

2 See NPRM at 26,092-96 (revising 40 C.F.R. 1074.10, 1074.12, and 1074.101).

Our States commend EPA for revisiting its preemption regulation specific to locomotives and locomotive engines, 40 C.F.R. § 1074.12 (Locomotives Preemption Regulation), in order to better align it with the Clean Air Act (“CAA”). [EPA-HQ-OAR-2022-0985-1526-A1, p. 1]

Congress preserved state authority in the CAA to regulate locomotive emissions by requiring the EPA Administrator to authorize California to control emissions from locomotives and locomotive engines that are not new (“non-new”).⁴ Other states may adopt and enforce California’s standards as well.⁵ EPA’s proposed deletion of subsection (b) of 40 CFR 1074.12 will advance Congressional intent by clarifying the States’ authority to regulate emissions from non-new locomotives. [EPA-HQ-OAR-2022-0985-1526-A1, p. 2]

Under EPA’s regulations for the control of emissions from locomotives, a locomotive, including its engine, is no longer new once legal or equitable title has transferred, or after it is placed into service.⁶ By contrast, EPA’s Locomotives Preemption Regulation references a period equivalent to 133 percent of the useful life of a locomotive or engine.⁷ This has the potential to cause significant confusion, as the regulation could be interpreted to preempt California and other States from regulating well after a locomotive is no longer considered new—in other words, during the period when the locomotive is non-new and, thus, subject to potential state regulation. [EPA-HQ-OAR-2022-0985-1526-A1, p. 2]

6 40 C.F.R. § 1033.901 (def. of “new”).

7 *Id.*, § 1074.12(b).

II. Legal Background

A. Congress Preserved State Authority to Control Emissions from Non-New Locomotives

The CAA requires EPA to promulgate standards to achieve the greatest degree of emission reduction achievable through the application of technology applicable to emissions from new locomotives and new engines used in locomotives.⁸⁶ As described above, EPA has set emission standards. The CAA also provides that no State or any political subdivision thereof shall adopt or attempt to enforce any standard or other requirement relating to the control of emissions from “[n]ew locomotives or new engines used in locomotives.”⁸⁷ But the statute expressly preserves state authority to regulate non-new locomotives and engines. The CAA mandates that EPA authorize California to enforce standards to control emissions from “any nonroad vehicles or engines other than those referred to” in the preceding subparagraphs—e.g., other than new locomotives and their engines.⁸⁸ Other States are permitted to adopt and enforce California’s standards.⁸⁹ [EPA-HQ-OAR-2022-0985-1526-A1, pp. 12-13]

86 42 U.S.C. § 7547(a)(5).

87 *Id.*, § 7543(e)(1), (e)(1)(B) (italics added).

88 42 U.S.C. § 7543(e)(2)(A).

89 *Id.*, § 7543(e)(2)(B).

Thus, Congress’s intent with respect to the regulation of locomotive emissions is apparent on the face of the statute: California and the other States are preempted only from regulating emissions from new locomotives and their engines, which is under the exclusive purview of the EPA, but may regulate emissions from non-new locomotives and their engines.⁹⁰ [EPA-HQ-OAR-2022-0985-1526-A1, p. 13]

90 See also *Engine Mfrs. Ass’n v. U.S. E.P.A.*, 88 F.3d 1075, 1091 (D.C. Cir. 1996) (discussing Congress’s intent to protect California’s ability to continue to develop nonroad emission standards).

III. Discussion

A. The Proposed Revisions Are Warranted to More Clearly Align the Locomotive Preemption Regulation with the CAA

As defined in EPA’s regulations for the control of emissions from locomotives (not reopened here), a locomotive, including its engine, is no longer “new” once legal or equitable title has transferred, or after it is placed into service.⁹¹ EPA’s Locomotive Preemption Regulation could be read as “extending preemption well beyond the CAA language,” i.e., far beyond the point at which locomotives and engines are no longer “new.”⁹² [EPA-HQ-OAR-2022-0985-1526-A1, p. 13]

91 40 C.F.R. § 1033.901 (def. of “new”).

92 NPRM at 26,092.

The first subsection of EPA’s Locomotive Preemption Regulation reflects the language in Section 209(e): “States and localities are preempted from adopting or enforcing standards or other requirements relating to the control of emissions from new locomotives and new engines used in locomotives.”⁹³ [EPA-HQ-OAR-2022-0985-1526-A1, p. 13]

93 40 C.F.R. § 1074.12(a).

The second subsection, however, could lead to confusion and deter the States from exercising the authority preserved under the CAA. This part appears to extend preemption to “a period

equivalent in length to 133 percent of the useful life, expressed as MW-hrs (or miles where applicable), beginning at the point at which the locomotive or engine becomes new....”⁹⁴ As discussed in the NPRM, the Locomotive Preemption Regulation also provides specific examples of standards and other requirements that would presumptively be preempted during the specified period, including “retrofit and aftermarket equipment requirements,” “whether applicable to new or other locomotives or locomotive engines.”⁹⁵ [EPA-HQ-OAR-2022-0985-1526-A1, p. 13]

94 *Id.*, § 1074.12(b); NPRM at 26,092.

95 *Id.*, § 1074.12(b) (italics added); NPRM at 26,092.

As described above, Congress itself defined the scope of preemption for locomotives and locomotive engines and did not delegate EPA authority to change it.⁹⁶ “[A]gencies have no special authority to pronounce on pre-emption absent delegation by Congress....”⁹⁷ Section 209(e)(2) specifically preserves California’s authority to adopt and enforce standards applicable to non-new locomotives and engines.⁹⁸ Congress required EPA to authorize such California regulations, unless evidence supports one of three factual findings that can be a basis for denial.⁹⁹ [EPA-HQ-OAR-2022-0985-1526-A1, pp. 13-14]

96 42 U.S.C. § 7543(e).

97 *Wyeth v. Levine*, 555 U.S. 555, 577 (2009); see also *Louisiana Pub. Serv. Comm’n v. FCC*, 476 U.S. 355, 374 (1986) (“[A]n agency literally has no power to act, let alone pre-empt the validly enacted legislation of a sovereign State, unless and until Congress confers power upon it.”).

98 42 U.S.C. § 7543(e)(2).

99 *Id.*, § 7543(e)(2)(A).

Congress’s direction to EPA contained in Section 209(e) to “issue regulations to implement this subsection” does not provide EPA with authority to expand the scope of categorical preemption.¹⁰⁰ The text provides no indication that “Congress intended [EPA] regulations ... to displace state law[s]” other than those Congress itself expressly chose to displace through the CAA.¹⁰¹ When Congress authorizes EPA to categorically preempt state law under the CAA, it does so in clear language that bears no resemblance to Section 209(e).¹⁰² The direction to “implement” the categorical preemption decisions Congress already made bears no resemblance to such provisions.¹⁰³ [EPA-HQ-OAR-2022-0985-1526-A1, p. 14]

100 *Id.*, § 7543(e) (final sentence).

101 See *Louisiana Pub. Serv. Comm’n*, 476 U.S. at 374.

102 E.g., 42 U.S.C. § 7545(c)(4)(A).

103 See also *Nat. Res. Def. Council v. E.P.A.*, 777 F.3d 456, 473 (D.C. Cir. 2014) (vacating EPA implementation regulations based on exceeding and conflicting with the CAA); *S.E.C. v. Sloan*, 436 U.S. 103, 118 (1978) (courts reject agency interpretations that are inconsistent with the statute or frustrate congressional policy underlying the statute); *Ry. Lab. Executives’ Ass’n v. Nat’l Mediation Bd.*, 29 F.3d 655, 670 (D.C. Cir. 1994) (agency’s power is no greater than that delegated to it by Congress).

EPA’s proposal is an appropriate clarification of its Locomotive Preemption Regulation that will prevent a misinterpretation that EPA intended to expand the scope of congressionally-defined preemption. As EPA correctly observes, the text of Section 209(e)(2)(A) calls for EPA to make factual findings on a record that includes public comment. The CAA does not direct, or even authorize, EPA to predetermine that certain regulations of non-new locomotives and their

engines are categorically preempted.¹⁰⁴ Rather, EPA may evaluate whether a given California law impermissibly regulates new locomotives or new engines on a “case-by-case basis.”¹⁰⁵ The Proposed Revisions bring EPA’s Locomotive Preemption Regulation into alignment with the statute. [EPA-HQ-OAR-2022-0985-1526-A1, p. 14]

104 NPRM at 26,095; see also 42 U.S.C. § 7543(e)(2)(A).

105 NPRM at 26,095.

B. Retaining the Current Regulatory Text Would Be Detrimental to the Public

EPA asks for comments on “to what extent there would be public benefit if [it] were to retain the current regulatory text.”¹⁰⁶ There is no public benefit to retaining the existing text; rather, it would be detrimental to the public. [EPA-HQ-OAR-2022-0985-1526-A1, p. 14]

106 Id.

As explained above, there is a great need for the States to be able to exercise their congressionally-preserved authority to regulate emissions from non-new locomotives. Locomotive emissions present an increasing proportion of the harmful air pollutants endangering public health and the environment, and plaguing environmental justice communities. State action is needed to respond to this critical situation and also to attain and maintain NAAQS. The current regulatory text has the potential to create confusion and to unintentionally and inappropriately serve as a deterrent to the States exercising their authority. [EPA-HQ-OAR-2022-0985-1526-A1, p. 15]

IV. Conclusion

For all of the reasons stated above, our States respectfully request that EPA finalize and adopt the proposed revisions to its Locomotive Preemption Regulation. [EPA-HQ-OAR-2022-0985-1526-A1, p. 15]

EPA Summary and Response:

Summary:

The commenters listed above in this section expressed support for EPA’s proposed action, for a variety of reasons. Among the comments of support were a few other remarks which EPA believes merit a response. In particular, ICCT commented that the proposal would permit the state to move forward with a pending locomotive in-use regulation. The Moving Forward Network (MFN) asked us to clarify whether the “significant effect” test would apply to the manufacturing or design of new aftermarket retrofitting emission controls. MFN also asked us to confirm that state and local authorities are not preempted from adopting regulations that may relate to the manufacture and design of retrofitting emission controls. The South Coast AQMD suggested that we provide additional guidance for how EPA evaluate future case by case decisions. They also recommended additional factors we should consider when making future evaluations. The Moving Forward Network and the State of California et al. commented that states may regulate emissions from non-new locomotives and their engines.

Response:

We appreciate the support and agree this action should be finalized as proposed. We wish to clarify that this action does not evaluate whether an authorization can be granted for California's proposed in-use locomotive rule. We don't concede that we exceeded our statutory authority set forth in Section 209(e)(1) of the CAA in the 1998 rule, rather we now view the previous rule as unnecessarily specifying preempted elements that the statute does not require and that we now think are not in all cases appropriate.

In response to MFN's comment about the significant effect test, in this action EPA cannot make any determination about whether any retrofitting requirements would or would not be preempted as significantly impacting the design and manufacture of new locomotives or new engines used in locomotives. We cannot 'confirm' that retrofitting requirements in general could be authorized under CAA section 209(e)(2). We will evaluate any future request from California on a case-by-case basis.

As we discussed in our 1998 rule adopting the first locomotive emission standards, requirements on non-new locomotives could potentially affect the design and manufacturing of new locomotives.² For this reason, we cannot definitively state that the 'significant effect' test and the scope of preemption would not relate to aftermarket retrofitting emission controls.

In response to the suggestion from South Coast AQMD, EPA does not currently have any plans to issue guidance regarding the specific additional factors suggested by this commenter to govern future authorization reviews.

In response to the comment from the Moving Forward Network and the State of California et al. asserting that states may regulate non-new locomotives and engines, this is true only up to a point. Even for non-new locomotives, California and other states are preempted from unilaterally regulating non-new locomotives and engines, but under CAA section 209(e)(2)(A) California may seek EPA's authorization. If granted by EPA, under CAA section 209(e)(2)(B) other states may adopt and enforce standards identical to those authorized by EPA, but other states are not free to independently regulate non-new locomotives or their engines and even California may not do so without EPA's authorization under section 209(e)(2)(A).

3 Critical Comments

3.1 Small Business Concerns

Comments by Organizations

Organization: American Short Line and Regional Railroad Association (ASLRRA)

The American Short Line and Regional Railroad Association ("ASLRRA"),¹ on behalf of itself and its member railroads, submits the following comments in response to the

² See Emission Standards for Locomotives and Locomotive Engines, Final Rule, 63 FR 18978, 18994 (April 16, 1998).

Environmental Protection Agency (“EPA”)’s April 27, 2023, Notice of Proposed Rulemaking (“NPRM”) on “Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles – Phase 3”.²

These comments supplement comments that ASLRRA has already submitted in this docket jointly with the Association of American Railroads. In addition to the points raised previously, these comments focus on an issue specific to small business railroads: the failure of EPA to comply with the Regulatory Flexibility Act.³ [EPA-HQ-OAR-2022-0985-1563-A1, p. 1]

1 ASLRRA is a non-profit trade association representing approximately 500 short line and regional railroad members and hundreds of railroad supply company members in legislative and regulatory matters.

2 88 Fed. Reg. 25,926 (April 27, 2023).

3 5 U.S.C. 601 et seq.

The NPRM’s Proposed Change to Locomotive Preemption Targets Small Business Railroads

The NPRM proposes a dramatic change to EPA’s regulations on the scope of preemption-specific provisions for locomotives and locomotive engines, which stand to disproportionately impact small business railroads.¹⁷ Current regulations at 40 C.F.R. § 1074.12 states that States and localities are preempted from adopting or enforcing standards or other requirements relating to the control of emissions from new locomotives and new engines used in locomotives, and further specifies the period of time, 133 percent of the useful life of the locomotive or engine, and types of requirements that are preempted, including emission standards, mandatory fleet average standards, certification requirements, retrofit and aftermarket equipment requirements, and nonfederal in-use testing requirements. The NPRM proposes to eliminate section 1074.12 and combine existing section 1074.10 with a new paragraph (b) that only specifies, “States and localities are preempted from adopting or enforcing standards or other requirements relating to the control of emissions from new locomotives and new engines used in locomotives.”¹⁸ [EPA-HQ-OAR-2022-0985-1563-A1, p. 4]

17 88 Fed. Reg. at 26,092.

18 Id. at 26,161.

EPA states that the service life of a locomotive “can extend to 40 years and beyond,” and that “States have expressed interest in regulating non-new locomotives.”¹⁹ Further, the NPRM provides that 93% of the locomotives of Class II and Class III railroads (short line railroads) are older, Tier 2 or earlier locomotives.²⁰ This appears to be a reasonable assertion, as most short line railroads buy used locomotives and maintain and use their locomotive fleets for decades.²¹ This change would have a dramatic impact on short line railroads. Often operating on razor-thin margins, small business railroads currently rely on preemption explicitly granted in the regulation that prevents States and localities from enacting their own regulations on locomotive emissions. [EPA-HQ-OAR-2022-0985-1563-A1, pp. 4 - 5]

19 Id. at 26,093.

20 Id. Seventy-four percent of Class I railroad locomotives are Tier 2 or earlier.

21 While there is not a complete data set on short line locomotives, information from the Universal Machine Language Equipment Registry (UMLER) shows that only 11% of short line locomotives that have been used in interchange service were built after 2000. For information on UMLER, see public.railinc.com.

The NPRM Fails to Follow the Regulatory Flexibility Act

EPA states that the changes proposed in the NPRM will not have a significant impact on a substantial number of small entities, but only addresses the changes proposed to EPA’s Phase 2 greenhouse gas requirements, but it does not mention the locomotive preemption change and its impact to small business railroads.²² Thus, the NPRM fails to assess how such a transformative change would significantly impact a substantial number of short line railroads in accordance with the Regulatory Flexibility Act (“RFA”), as amended by the Small Business Regulatory Enforcement Fairness Act (“SBREFA”) – and it also declines to provide regulatory relief or consider less burdensome alternatives for small businesses.²³ Further, the RFA, as amended by SBREFA, also requires the EPA to convene a Small Business Advocacy Review (“SBAR”) panel for most proposed rules unless the agency can certify that a rule will not have a significant economic impact on a substantial number of small entities.²⁴ [EPA-HQ-OAR-2022-0985-1563-A1, p. 5]

22 88 Fed. Reg. at 26,097.

23 5 U.S.C. 601 et seq.

24 5 U.S.C. § 609(b).

Most Class II and Class III railroads fit the SBA’s definition of a small entity in the railroad industry, as they have fewer than 1,500 employees.²⁵ As 93% of the locomotives operated by the approximately 600 short line railroads are Tier 2 or older, the change in preemption coverage would impact a substantial number of these small entities. [EPA-HQ-OAR-2022-0985-1563-A1, p. 6]

25 NAICS Code 48211, “Short Line Railroads,” at SBA, “Table of Small Business Size Standards Matched to North American Industry Classification System Codes.” Effective Dec. 19, 2022. Available at: <https://www.sba.gov/document/support-table-size-standards>.

EPA Response:

Response:

We disagree with the commenter’s assertion that the revisions to the locomotive preemption regulation would have any direct impact on small entities and require convening of a small business panel under the Regulatory Flexibility Act. This rule simply revises EPA’s regulations to align with section 209 of the Clean Air Act and to preserve for separate future adjudicatory actions under CAA section 209(e)(2) whether any particular state rule addressing non-new locomotives or engines would impermissibly relate to the control of emissions from new locomotives or engines under section 209(e)(1). This action does not directly regulate any small entity, or a fortiori, the commenter or any of its members. *See Cement Kiln Recycling Coal. v. EPA*, 255 F.3d 855, 867-69 (D.C. Cir. 2001) (agencies need conduct Regulatory Flexibility Act analyses and certifications only with regard to small entities that are directly “subject to the proposed regulation—that is, those ‘small entities to which the proposed rule will apply’”). Moreover, as explained in the preamble, the agency made a finding that this rule would not have a significant economic impact on a substantial number of small entities. Consequently, the NPRM did not need to assess how the rule revision might impact a substantial number of short line railroads in accordance with the RFA, as amended by the Small Business Regulatory Enforcement Fairness Act (“SBREFA”). Likewise, it was unnecessary to convene a Small

Business Advocacy Review (“SBAR”) panel, and the Administrator properly certified that this rule will not have a significant economic impact on a substantial number of small entities.

3.2 Concerns regarding the status of state-level controls

Comments by Organizations

Organization: American Free Enterprise Chamber of Commerce (AmFree) et al.

III. EPA’s Attempt To Permit State Regulation Of Locomotives Is Unlawful

The proposed rule also seeks to provide California—and California alone— with new authority to experiment with regulation of certain locomotives and locomotive engines. This effort is barred by the settled constitutional principle of equal state sovereignty. And even if it were constitutional, EPA has failed adequately to explain its sudden reversal of its two-decades-old position that California lacks authority under the Clean Air Act to regulate locomotives and locomotive engines for 133 percent of their useful lives. For either or both of these reasons, EPA cannot move forward with the proposed grant of new regulatory authority to California. [EPA-HQ-OAR-2022-0985-1660-A1, pp. 67 - 68]

The specific action EPA proposes is to rescind 40 C.F.R. § 1074.12(b), promulgated in 1998 and unchanged since. See 63 Fed. Reg. 18,978, 18,993–94 (Apr. 16, 1998). That regulation implemented Section 209(e)(1)(B) of the Clean Air Act, 42 U.S.C. § 7543(e)(1)(B), which prohibits any state regulation “relating to the control of emissions” from “[n]ew locomotives or new engines used in locomotives.” The original regulation swept broadly. EPA interpreted the statutory phrase “relating to the control of emissions” to bar even state regulation of non-new locomotives or engines where the regulation “would be expected to affect how a manufacturer designs a new locomotive or new locomotive engine.” 62 Fed. Reg. 6366, 6397 (Feb. 11, 1997).¹³ As a result, when EPA proceeded to enumerate specific areas, such as “emission standards,” in which States were forbidden to act, EPA made clear that federal preemption extended to both “new or other locomotives or locomotive engines,” for “133 percent” of their useful lives. 40 C.F.R. § 1074.12(b) (emphasis added). [EPA-HQ-OAR-2022-0985-1660-A1, p. 68]

¹³ A locomotive or engine is considered to be “new” both when it is freshly manufactured and when it has been “remanufactured.” 40 C.F.R. § 1033.901.

The wide preemptive scope of the regulation was intended to provide “clarity and certainty to the industry and states,” given the “interstate nature of locomotive travel and the fact that regulation of locomotives is generally national in scope.” 62 Fed. Reg. at 6396. As EPA noted at the time, “compelling policy reasons” supported “uniform, national regulation of locomotive emissions,” including the “significant interstate commerce concerns raised by state-by-state regulation of locomotives.” *Id.* at 6397; see also *id.* (noting concern raised by Congress that “State efforts to regulate locomotive emissions or operations would impose an unconstitutional burden on interstate commerce”). [EPA-HQ-OAR-2022-0985-1660-A1, p. 68]

Now, two decades into this regime, with all of the reliance that interests that have accrued, EPA proposes to reverse course and “allow California the opportunity to explore, develop, and justify” its own regulations of non-new locomotives. 88 Fed. Reg. at 26,096. EPA offers a

California-centric course of action because Section 209(e) permits only California to promulgate regulations “relating to the control of emissions,” on which other States may then seek to piggyback. 42 U.S.C. § 7543(e)(2)(A). This proposal is twice unlawful. [EPA-HQ-OAR-2022-0985-1660-A1, p. 69]

First, by granting special privileges to California that are not granted to other States, Section 209(e) violates the equal sovereignty of the States—and, as a consequence, so too does EPA’s proposed implementation of that provision. It is a well-settled constitutional “principle that all States enjoy equal sovereignty.” *Shelby County v. Holder*, 570 U.S. 529, 535 (2013); see *Franchise Tax Bd. of Cal. v. Hyatt*, 139 S. Ct. 1485, 1497 (2019) (noting that “[e]ach State[]” has “equal dignity and sovereignty under the Constitution”). For that reason, the Supreme Court has repeatedly condemned congressional efforts to enact legislation that preferences (or disfavors) some States over others. See, e.g., *Shelby County*, 570 U.S. at 544 (“[D]espite the tradition of equal sovereignty, the [Voting Rights Act’s preclearance requirements] appl[y] to only nine States.”); *Nw. Austin Mun. Util. Dist. No. One v. Holder*, 557 U.S. 193, 203 (2009) (“The [Voting Rights Act] also differentiates between the States, despite our historic tradition that all the States enjoy ‘equal sovereignty.’” (citation omitted)); see also, e.g., *Nat’l Pork Producers Council v. Ross*, 143 S. Ct. 1141, 1164 (2023) (plurality op.) (suggesting that giving voters in some States greater constitutional authority “to regulate in-state sales” of goods than voters in other States would violate the “fundamental principle of equal sovereignty” (quoting *Shelby County*, 570 U.S. at 544)). [EPA-HQ-OAR-2022-0985-1660-A1, p. 69]

Section 209(e) transgresses this principle. There is no question that Section 209(e), like other provisions of the Clean Air Act, provides power to California not afforded to other States. Only California may deviate from the federal government and propose its own emissions standards, see 42 U.S.C. § 7543(e)(2)(A); the other States are relegated to either following the trail blazed by California or observing the federal standards, see *id.* § 7543(e)(2)(B). Nor can EPA resort to an argument—as it has elsewhere, see, e.g., *EPA Br. 34, Ohio v. EPA*, No. 22-1081 (D.C. Cir. Jan. 13, 2023)—that the Clean Air Act simply grandfathered in existing California programs. Whatever the merits of that argument may be in other contexts, here EPA is proposing to expand California’s authority and to permit the State, for the first time, to regulate emissions from non-new locomotives and locomotive engines. That selective grant of additional, unprecedented authority to California violates equal sovereignty. See Thomas B. Colby, *In Defense of the Equal Sovereignty Principle*, 65 *Duke L.J.* 1087, 1157 (2016) (identifying the Clean Air Act’s preferencing of California as “a classic example of unequal sovereignty”). [EPA-HQ-OAR-2022-0985-1660-A1, pp. 69 - 70]

Second, even if EPA’s proposal were constitutional, it nonetheless is arbitrary and capricious. “[A]n agency changing its course by rescinding a rule is obligated to supply a reasoned analysis for the change beyond that which may be required when an agency does not act in the first instance.” *State Farm*, 463 U.S. at 42; see *Physicians for Soc. Resp. v. Wheeler*, 956 F.3d 634, 644 (D.C. Cir. 2020) (“Reasoned decision-making requires that when departing from precedents or practices, an agency must offer a reason to distinguish them or explain its apparent rejection of their approach.” (quotation marks omitted)). Here, however, EPA appears to have changed its approach for no reason other than that States have begun to express interest in regulating non-new locomotives to “obtain[] greater emissions reductions from this sector” and that some potential state regulations may fit within the bounds of the Clean Air Act. 88 *Fed. Reg.* at 26,093, 26,095. EPA has not, as required, confronted or rebutted the “compelling policy reasons”

supporting a national regulatory approach identified in its prior rulemaking. 62 Fed. Reg. at 6397. EPA is also silent on the unconstitutional burden on interstate commerce, see *id.*, that may be presented by turning the country into a quilt of States adopting two competing emissions standards. These gaps in the agency’s reasoning make the proposed rescission of the prior regulation arbitrary and capricious. Cf. *MISO Transmission Owners v. FERC*, 45 F.4th 248, 264 (D.C. Cir. 2022) (agency action was not the result of “reasoned decision-making” where agency “failed to adequately explain why” its previous concerns “no longer mattered” and did not “engage[] with” those concerns). [EPA-HQ-OAR-2022-0985-1660-A1, p. 70]

Organization: Association of American Railroads (AAR), American Short Line and Regional Railroad Association (ASLRRRA)

The Associations’ members own (or lease) and operate locomotives and are part of the national freight and passenger rail network. The Associations and their members therefore have a significant interest in this rulemaking. [EPA-HQ-OAR-2022-0985-1492-A1, p. 2]

The freight rail industry is not a combination of discrete, unconnected railroads. Rather, it is a single interconnected system of six Class I railroads and hundreds of short line railroads that own and maintain over 160,000 route-miles of track throughout North America. In most areas of the United States where passenger railroads operate, they do so over track owned by the freight railroads. [EPA-HQ-OAR-2022-0985-1492-A1, p. 2]

It is not just the track that is connected: approximately 5 to 10% of the line-haul locomotives being operated by the six Class I railroads are owned or leased by another railroad, a practice known as “locomotive run-through interoperability.” This allows the railroads to maximize the efficiency of locomotive use in moving freight trains and reduces transportation time by eliminating the need to exchange locomotives when moving from one railroad’s line to another’s. As a result, it is common to see line-haul locomotives from railroads in the United States, Canada, and Mexico operating far from the owning railroad’s tracks. It would not be uncommon to see a CPKC or Norfolk Southern locomotive operating on track in California owned by BNSF or Union Pacific. The Class I freight railroads manage their operations with a focus on efficiency by pulling a single train across long distances and through many states, thereby reducing the idling and switching of locomotives. For example, it is a regular occurrence for trains to leave Chicago, Illinois, for a destination in California without a single change to the locomotive(s) pulling that train. [EPA-HQ-OAR-2022-0985-1492-A1, p. 3]

A key factor in maximizing locomotive interoperability is the minimization of technical and operational differences among locomotives in each railroads’ fleet. Increasingly, railroads not only operate each other’s locomotives but also perform routine maintenance on other carriers’ locomotives to minimize non-productive time involved in returning a locomotive to its owning railroad for maintenance. [EPA-HQ-OAR-2022-0985-1492-A1, p. 3]

It is for these precise reasons, and the overall interoperability of the North American rail network, that Congress has passed many laws making clear that railroad regulation must occur at the national level and preempting the regulation of the rail industry by state and local jurisdictions.⁴ Congress recognized that if the rail network is going to function safely and efficiently while meeting the needs of the nation’s supply chain, railroads cannot be subject to a patchwork of different state and local regulations across the country. This is why, in Section 209

of the Clean Air Act, Congress expressly prohibited individual states from “adopt[ing] or attempt[ing] to enforce any standard or other requirement relating to the control of emissions” from “new locomotives or new engines used in locomotives.”⁵ While the regulation of non-new locomotives and locomotive engines was not categorically preempted by the statute, the law does require states to obtain waivers from EPA for such regulations. Notably, as EPA recognized in 1998 when it published its implementing regulations, and recognizes again now, the statute prohibits EPA from granting waivers to states seeking to regulate non-new locomotives or non-new locomotive engines in a manner that would significantly affect the design and manufacture of new locomotives or new locomotive engines.⁶ [EPA-HQ-OAR-2022-0985-1492-A1, p. 3-4]

4 See, e.g. *United Transp. Union v. Long Island R.R.*, 455 U.S. 678, 688 (1982) (“the Federal Government has determined that a uniform regulatory scheme is necessary to the operation of the national rail system.”).

5 42 U.S.C. § 7543(e)(1)(B). The Clean Air Act is not the only federal statute that preempts state regulation of the rail industry. Congress has enacted multiple statutes that preempt attempts by state and local authorities to regulate railroad operations, including the Interstate Commerce Act, as amended by the ICC Termination Act of 1995 (“ICCTA”) and the Locomotive Inspection Act. 49 U.S.C. § 10501(b); 49 U.S.C. § 20701. Through these statutory schemes, Congress recognized that a patchwork of state and local regulations attempting to regulate different aspects of the rail industry is unworkable and would interfere with interstate commerce and the global supply chain.

6 42 U.S.C. § 7543(e)(2); 88 Fed. Reg. 26096 (April 27, 2023).

Although the Proposed Rule removes the categorical preemption of certain types of state regulations EPA has, to date, deemed likely to significantly affect the design and manufacture of new locomotives or new locomotive engines, EPA is still required to evaluate applications for waiver on a case-by-case basis against the same statutory limitation.⁷ And while EPA repeatedly notes “developments since 1998,” the same important realities that underlay EPA’s 1998 decision to create categories of preempted state regulations continue to apply. Clarity in the scope of preemption remains important. Locomotives remain very long-lived assets. Remanufactured engines continue to improve the emissions performance of locomotives. And it remains the fact that a locomotive may travel through 48 states, Canada, and Mexico, and conflicting state requirements can interfere with the national rail network in significant ways. This is the problem Congress specifically prevented through the inclusion of Section 209(e) in the Clean Air Act and the various other statutes that reserve regulation of the rail industry solely to the federal government. EPA’s pivot to a case-by-case approach to waiver requests will not obviate these critical considerations. [EPA-HQ-OAR-2022-0985-1492-A1, p. 4-5]

7 88 Fed. Reg. 26096 (April 27, 2023).

Organization: Westinghouse Air Brake Technologies Corporation (Wabtec)

In summary, Wabtec’s comments conclude that: (1) EPA should not remove the list of preempted state-level controls from 40 C.F.R. 1074.12(b) of its federal preemption rules for new locomotives and new locomotive engines; (2) EPA should not permit state-level controls that affect the design or manufacture of new locomotives or new engines used in locomotives; and (3) EPA should require notice-and-comment rulemaking regarding any new state-level controls and should obtain OEM input on any such controls. [EPA-HQ-OAR-2022-0985-1580-A1, p. 2]

IV. EPA’S PROPOSED FEDERAL PREEMPTION REVISIONS MUST BE DESIGNED TO PREVENT A PATCHWORK OF STATE AND LOCAL REGULATIONS

Wabtec is concerned that proposed revisions to EPA’s federal preemption regulations could create an untenable patchwork of locomotive state and local regulatory requirements. Congress expressly preempted state and local governments from adopting or enforcing “any standard or other requirement relating to the control of emissions from . . . new locomotives or new engines used in locomotives” in Section 209(e) of the Clean Air Act (“CAA”).¹⁶ EPA established implementing preemption regulations accordingly, and defined “new” locomotives to include both newly manufactured and existing locomotives that are remanufactured or rebuilt, which has provided important stability and predictability to OEMs and their customers and facilitated further investments and improvements across the rail industry.¹⁷ [EPA-HQ-OAR-2022-0985-1580-A1, pp. 8 - 9]

16 See 42 U.S.C. § 7543(e).

17 See 40 CFR § 1033.901.

Congress and EPA recognized that a predictable federal program to address manufacturing, remanufacturing, and in-use compliance of locomotive emissions provides the rail industry regulatory certainty. Any revisions to EPA’s federal preemption regulations must ensure that the federally-uniform locomotive emissions program continues and locomotive manufacturers and rail operators are not unduly burdened by state and local requirements. [EPA-HQ-OAR-2022-0985-1580-A1, p. 9]

A. State-Level Controls Over New Locomotives or New Locomotive Engines Will Greatly Impede the Rail Industry

State-level controls impacting new locomotives and new engines used in locomotives, such as California’s In-Use Locomotive Regulation, will adversely impact rail operations in surrounding states and interstate rail operations, and have significant practical and legal implications for the rail industry – both OEMs and railroad operators. The U.S. railroad system includes complex infrastructure of nearly 140,000 miles of track across 49 states and the District of Columbia.¹⁸ Wabtec estimates that there are at least 1,000 locations where the railroad system crosses state lines.¹⁹ The current uniform federal regulatory structure allows seamless passage of locomotives and their cargo (freight or passenger) across state lines. [EPA-HQ-OAR-2022-0985-1580-A1, p. 9.] [See Docket Number EPA-HQ-OAR-2022-0985-1580-A1, page 10, for Figure of Class 1, Passenger, and Main Line Rail routes in the continental United States.]

18 U.S. Department of Transportation, Federal Railroad Administration, The Freight Rail Network, <https://railroads.dot.gov/rail-network-development/freight-rail-overview#:~:text=The%20Freight%20Rail%20Network, freight%20system%20in%20the%20world>.

19 This a low-end estimate based on data analysis from the Federal Railroad Administration. (<https://railroads.dot.gov/crossing-and-inventory-data/grade-crossing-inventory/highwayrail-crossing-database-files>). However, the true number may be much higher using different data.

This seamlessly integrated network would be significantly disrupted if states are permitted to establish state-specific locomotive controls that affect new locomotives and new engines used in locomotives. Railroads with interstate operations, for example, would be forced to ensure their interstate-bound locomotives comply with the most stringent state requirements along a given route for every consist. To comply, railroads would need to either (1) invest significant resources to create new infrastructure for switching out locomotives at certain state crossings, or (2) purchase locomotives capable of complying with the most stringent of varying state

regulations where they have interstate railroad operations. [EPA-HQ-OAR-2022-0985-1580-A1, p. 10]

First, switching out locomotives at certain state crossings is not feasible. Train cargo cannot be easily transferred from one consist to another. Assembling a train consist requires large rail yards, complex infrastructure, and trained personnel. Line-haul locomotives are attached to cargo at yards and may be placed in the middle of the consist to provide the train with distributed power. Bringing a train to a full stop in order to switch out every locomotive at a state crossing would physically slow down cargo, while increasing railroad operation costs, complexity, and staffing needs. Such switching operations also would waste energy and increase emissions. [EPA-HQ-OAR-2022-0985-1580-A1, p. 10]

Second, ensuring a locomotive complies with the most stringent of many varying state regulations is impractical and directly impacts OEMs like Wabtec. California's In-Use Locomotive Regulation (discussed further in Section V, below), for example, would require any locomotive operating in California with an engine build date of 2030 or later to operate in a zero-emission configuration. Railroads with interstate operations purchasing new model year 2030 and later locomotives will need to ensure that their locomotives operate in a zero-emission configuration in California. OEMs must therefore design and manufacture new locomotives and new locomotive engines to comply with this California-specific standard rather than the uniform federal standard. California's rule therefore impermissibly affects the design and manufacture of new locomotives and new locomotive engines and is preempted. [EPA-HQ-OAR-2022-0985-1580-A1, pp. 10 - 11]

B. EPA Should Ensure that State-Level Controls are Subject to Case-by-Case Evaluation Through Public Notice and Comment

Because Wabtec designs, manufactures, and services freight and passenger rail equipment and technology, Wabtec is well positioned to offer EPA valuable insight and technical expertise about proposed state-level locomotives or locomotive engine controls. EPA specifically requested comment about potentially "removing the language in 40 CFR 1074.12(b)."²¹ EPA stated that any nonroad authorization requests from California "under 40 CFR 1074.101 through 1074.115 would still be evaluated by a case-by-case basis" through the mandatory public comment provisions under those sections.²² EPA also requested comment on the "extent there would be public benefit if [EPA] were to retain the current regulatory text."²³ [EPA-HQ-OAR-2022-0985-1580-A1, p. 11]

²¹ 88 FR 25926, 26095 (Apr. 27, 2023).

²² Id.

²³ Id.

Wabtec urges EPA not to change 40 C.F.R. 1074.12(b). Section 1074.12(b) lists the types of standards and requirements that states are preempted from adopting or enforcing, including "emission standards, mandatory fleet average standards, certification requirements, retrofit and aftermarket equipment requirements, and nonfederal in-use testing requirements."²⁴ EPA asserts that removing this language will stop unnecessarily discouraging states from enacting permissible state-level locomotive regulations. However, the majority of enumerated standards and requirements in section 1074.12(b) go to the heart of "control of emissions from . . . new

locomotives or new engines used in locomotives” and are reserved for federal regulation under the Clean Air Act.²⁵ Removing 1074.12(b) would encourage otherwise preempted state regulatory proposals, make less clear the limits of state-level controls, and send the wrong message to OEMs and the rail industry about the primacy of federal locomotive regulations and the associated regulatory certainty on which these stakeholders rely. [EPA-HQ-OAR-2022-0985-1580-A1, p. 11]

24 40 C.F.R. § 1074.12(b).

25 42 U.S.C. § 7543(e)(1)(B).

If EPA were to remove Section 1074.12(b), Wabtec supports EPA’s commitment to “include evaluation of the temporal nature of any submitted state controls as part of its evaluation of any authorization request under 40 CFR 1074.101 through 1074.115.”²⁶ Wabtec respectfully submits that EPA should require that state-level control authorization requests expressly address useful life and other associated considerations. OEMs and railroad operators will be well positioned to provide meaningful and comprehensive input to EPA on the temporal aspects of proposed state-level controls. [EPA-HQ-OAR-2022-0985-1580-A1, p. 11]

26 88 FR 25926-01, 26096.

Wabtec supports maintaining the existing procedural safeguards in Part 1074 Subpart B, which requires that EPA “provide notice and opportunity for a public hearing” if California requests authorization to enforce any standards regarding non-new locomotives or non-new engines used in locomotives.²⁷ This process ensures that potentially affected stakeholders can evaluate and provide critically important input to EPA. Locomotive and locomotive engine manufacturers — like Wabtec — are uniquely suited to offer technical expertise because they design and manufacture products to comply with applicable regulatory requirements. In particular, manufacturers are best positioned to speak to whether a proposed action will have the practical effect of imposing a “standard or other requirement related to the control of emissions from . . . [n]ew locomotives or new engines used in locomotives” that the Clean Air Act prohibits.²⁸ Transparent, open, and informed decision-making is crucial to ensuring that the North American railroad system is regulated in the most safe, effective, and sustainable manner possible. [EPA-HQ-OAR-2022-0985-1580-A1, pp. 11 - 12]

27 40 C.F.R. § 1074.101.

28 42 U.S.C. § 7543(e)(1)(B).

Allowing stakeholders to comment on EPA proposals to authorize state locomotive and locomotive engine actions will also allow EPA to develop a robust administrative record. Locomotive regulation decisions have broad and long-lasting impacts given the nature of the rail industry and the longevity of locomotives, and implicate many issues, ranging from technological feasibility to rail industry economics and funding impacts. Wabtec therefore respectfully submits that having a robust administrative record benefits all stakeholders and furthers the Agency’s commitment to transparency. [EPA-HQ-OAR-2022-0985-1580-A1, p. 12]

C. EPA’s State-Level Control Determinations Benefit from OEM Input

EPA’s Proposed Rule discusses two post-1998 emission control examples that states currently may not impose on locomotives through 133% of their useful life under 40 C.F.R. Section

1074.12(b).²⁹ EPA believes the two examples may “not significantly affect the design or manufacture of a new locomotive or locomotive engine” and thus could be the type of state-level control of non-new locomotives that would be permissible under Section 209(e).³⁰ Wabtec explains below why it generally agrees with EPA’s conclusions for one example, but disagrees with EPA on the other, underscoring why OEMs must be able to opine whether proposed state-level controls impact on new locomotive or locomotive engine design and manufacture and may be preempted under Section 206 of the Clean Air Act. Wabtec supports EPA’s public notice and comment process to ensure a robust administrative record is developed related to the impact on the design and manufacture of new locomotives and new locomotive engines when EPA is determining whether such state controls are preempted. [EPA-HQ-OAR-2022-0985-1580-A1, p. 12]

29 88 FR at 26094-95 (Section X.C).

30 Id. at 26095.

1. Requiring Auxiliary Power Units Would Affect New Locomotive Design and Manufacture

EPA asserts in the Proposed Rule that requiring “retrofitting of an auxiliary power unit (APU) to support engine shutdown for idle reduction “might not be preempted.”³¹ An APU enables a locomotive’s main engine to shut down while maintaining power to auxiliary functions (e.g., air brake pressure, battery state of charge). EPA believes requiring an APU retrofit “would not significantly affect the design or manufacture of a new locomotive or new locomotive engine.”³² [EPA-HQ-OAR-2022-0985-1580-A1, pp. 12 - 13]

31 Id.

32 Id.

Wabtec respectfully disagrees with EPA’s assessment.³³ Accommodating an APU retrofit could implicate the locomotive engine’s design given an engine’s space constraints, weight considerations, piping configurations, and logistical standards. A locomotive first must have an engine shutdown timer to be compatible with an APU. A number of locomotives and locomotive engines in operation do not have engine shutdown timers and not all non-new engines and locomotives can accommodate an APU retrofit. This can be due to space constraints and logistical challenges such as fueling an APU. Even when an APU uses the same fuel tank as the main locomotive, the APU takes up physical space on the locomotive. An APU retrofit could involve re-routing a locomotive’s existing piping and wiring. It may also require changing the locomotive engine’s control logic, such as the algorithmic programming that determines when to turn an APU on or off based on engine temperature, air pressure, or other operational measures.³⁴ [EPA-HQ-OAR-2022-0985-1580-A1, p. 13]

33 Wabtec recognizes that EPA was assessing an APU retrofit requirement in the hypothetical without doing a full analysis of what would be required for all locomotives to actually be retrofitted. Id. EPA made this clear by stating, for example, “there may be sufficient space and fluids onboard to accommodate this component without disrupting the existing equipment or the design of new remanufacturing kits,” leaving open the possibility that might not be the case. Id. (emphasis added).

34 While Wabtec has not performed the studies necessary to determine the compatibility of Wabtec-manufactured locomotives and locomotive engines with an APU retrofit, these observations and considerations are based on Wabtec’s technical expertise and experience.

2. Requiring New Load Control Calibration Strategy Could Affect New Locomotive Design and Manufacture

According to EPA, requiring the “installation of new load control calibration strategy to better manage load on the main engine while the locomotive is in line-haul service” could be a permissible, non-preempted state-level control.³⁵ Wabtec generally agrees with EPA’s assessment that in some circumstances requiring non-new locomotives to install a load control calibration strategy or system to better manage load on the main engine during line-haul service may not affect the design or manufacture of a new locomotive or locomotive engine. However, there may be technical considerations due to the age and configuration of the particular locomotive control systems that may inhibit the ability to install such systems on all non-new locomotives. [EPA-HQ-OAR-2022-0985-1580-A1, p. 13]

35 88 FR at 26095.

For example, as EPA is aware, Wabtec offers the Trip Optimizer™ control system to accomplish these tasks.³⁶ Trip Optimizer™ generally does not require a locomotive or engine to have any particular mechanical attributes. Trip Optimizer™ typically can be deployed by installing new software with a few hardware components. However, depending on the age and version of the locomotive control system, there could be significant upgrades, or even replacement, of certain hardware and software to be compatible with an energy management system like Trip Optimizer™. In addition, there have been significant improvements to locomotive telecommunication systems from satellite systems to the cellular network, and now, today’s locomotives are using the Positive Train Control network system. It is possible that telecommunication systems on non-new locomotives may not be compatible with the energy management software’s telecommunication system. Lastly, Wabtec’s Trip Optimizer™ solution does require adequate space on the locomotive to install certain hardware. Depending on the age and type of locomotive, it may be necessary to remove obsolete equipment to make room for such hardware. As EPA looks to evaluate state-level controls on a case-by-case basis, it will be important to consider the OEM’s technical considerations. [EPA-HQ-OAR-2022-0985-1580-A1, pp. 13 - 14]

36 Id. at fn.1036; Wabtec Corp., Trip Optimizer™, <https://www.wabteccorp.com/digital-intelligence/energy-management/trip-optimizer>.

D. EPA Should Revise its Regulations to Provide Expressly that State Level Controls May “Not Significantly Affect the Design and Manufacture of New Locomotives or Engines”

EPA’s action is premised, in part, on the ostensible need “to better align our regulatory text with the plain language of the Clean Air Act to provide regulatory space for state controls that do not inappropriately affect the design and manufacture of new locomotives or new engines used in locomotives.”³⁷ Wabtec agrees with EPA that state-level controls may not affect the design or manufacture of new locomotives or new engines used in locomotives. However, Wabtec is concerned that EPA’s proposed revisions fall short of providing the rail industry and other stakeholders that assurance. Wabtec therefore respectfully requests that if EPA revises its Part 1074 preemption regulations, EPA should incorporate an express requirement that state-level controls may not “significantly affect the design and manufacture” of new locomotives and new engines used in locomotives into the “Procedures for Authorization” in Sections 1074.101-1074.115. [EPA-HQ-OAR-2022-0985-1580-A1, p. 14]

VI. FEDERAL REGULATION CAN ADDRESS LOCAL AIR QUALITY ISSUES

Wabtec respectfully submits that existing federal regulations provide workable and uniform mechanisms to address local air quality issues and GHG emissions. Existing locomotive standards, such as Tier 4 standards, can continue to reduce NOx, PM, and GHG emissions, and OEMs and railroads have already developed and implemented new equipment and operating technologies accordingly. By using existing standards to address air quality and emissions, EPA can take action that the commercial rail market is ready to implement and capable of deploying at scale. [EPA-HQ-OAR-2022-0985-1580-A1, p. 18]

EPA Summary and Response:

Summary:

The American Free Enterprise Chamber of Commerce (“AmFree”) asserts first that CAA section 209(e) itself is unconstitutional and second that EPA has failed adequately to explain its reasons for its regulatory amendments.

Wabtec raised many issues, the first of which urges EPA not to change 40 C.F.R. 1074.12(b).

Wabtec provided a preliminary evaluation of the impact of requiring APUs or new load control calibration strategies on the design and manufacture of new locomotives and engines. They did not believe APU’s could be added to locomotives without affecting the design of new locomotives, but agreed that changing load controls calibration strategies could.

Wabtec also expresses concerns that the nationally integrated rail network and the stability of a Federally-uniform regulatory program would be disrupted if states were permitted to establish state-specific locomotive controls that affect new locomotives and new engines used in locomotives. AAR similarly asserts that conflicting state requirements could interfere with the national rail network, and that Congress intended to prevent that problem with the inclusion of CAA section 209(e).

Wabtec requested EPA to consider useful life and associated time-related aspects of a state control measure in its review of future authorization requests.

Wabtec further requests EPA to incorporate an express requirement that state-level controls may not “significantly affect the design and manufacture” of new locomotives and new engines used in locomotives into the “Procedures for Authorization” in Sections 1074.101-1074.115.

Response:

We disagree with AmFree that CAA section 209(e) is unconstitutional.³ The preemption framework in Section 209 falls within Congress’s plenary Commerce Clause power. In employing this power to regulate air pollution, Congress may preserve pre-existing State programs; it is not obliged to preempt them indiscriminately. Moreover, Congress appropriately

³ The commenter also suggests, without elaboration, that the regulation itself is unconstitutional. However, as we explain in the preamble, the final rule revises the regulation to align with the text of the statute. The regulation is not conferring on California additional authority in excess of what Congress itself conferred in enacting section 209(e).

recognized the benefits for the nation to be derived from permitting California to improve upon “its already excellent program of emissions control” and continuing to serve as a forum for innovation. *Motor & Equip. Mfrs. Ass’n v. EPA*, 627 F.2d 1095, 1109-10 (D.C. Cir. 1979) (*MEMA I*). It also appropriately recognized the benefits to be derived from allowing California to address the State’s particularly severe air quality problems.

The regulation of mobile source emissions in Clean Air Act Title II, including the preemption framework in Section 209, is an appropriate exercise of Commerce Clause power.⁴ The Commerce Clause power plainly encompasses Federal regulation of air pollution. *Miss. Comm’n on Env’t Quality v. EPA*, 790 F.3d 138, 180-83 (D.C. Cir. 2015). Consequently, the only constitutional question presented is whether “Congress acted rationally in adopting” this specific preemption framework. *Hodel v Va. Surface Mining & Reclamation Ass’n*, 452 U.S. 264, 276 (1981). There is no bar “expressed in plain terms” precluding Congress from making reasonable preemption distinctions between states or the regions they represent. *Gibbons v. Ogden*, 22 U.S. 1, 196 (1824). The Constitution provides very few promises of equality among the states, and it articulates those with particularity. For example, it provides for uniform duties, imposts, and excises throughout the United States. U.S. Const. art. I, § 8, cl. 1. It provides for uniform naturalization and bankruptcy regulation, and that no preferences shall be given to the ports of one state over those of another. *Id.* art. I, § 8, cl. 4; § 9, cl. 6. These specific guarantees of equal treatment reflect the *absence* of any more general principle that Congress’s enactments must broadly provide for identical standards across different states.

The Commerce Clause is not among the provisions for which the Constitution prescribes a need for geographic uniformity. Its text makes as much clear, allowing Congress “[t]o regulate commerce ... among the several States.” U.S. Const. art. I, § 8, cl. 3. The Supreme Court has thus pronounced: “There is no requirement of uniformity in connection with the commerce power ... such as there is with respect to the power to lay duties, imposts and excises.” *Currin v. Wallace*, 306 U.S. 1, 14 (1939); *see also Hodel*, 452 U.S. at 332 (a claim of arbitrariness in evaluating exercise of Commerce Clause authority “cannot rest solely on a statute’s lack of uniform geographic impact”). Thus, while a “guarantee of uniformity in treatment amongst the states cabins some of Congress’ powers,” “no such guarantee limits the exercise of Commerce Clause Power.” *NCAA v. Governor of N.J.*, 730 F.3d 208, 238 (3d Cir. 2013), *abrogated on other grounds by Murphy v. NCAA*, 138 S. Ct. 1461 (2018). “This only makes sense: Congress’ exercises of Commerce Clause authority are aimed at matters of national concern and finding national solutions will necessarily affect states differently.” *Id.* at 238.

Consistent with these principles, Congress may rationally create principled preemption distinctions when creating new federal programs. The United States Code is replete with examples where Congress elected to treat states disparately with respect to preemption, either by including grandfather provisions or otherwise. For example, Congress exempted Texas’ intrastate electric grid from the full panoply of federal public utility regulation, thereby allowing Texas alone to retain certain sovereign authority over power transmission not enjoyed by any other state. 16 U.S.C. §§ 824k(k), 824p(k), 824q(h), 824t(f). And beyond differentiating with respect to preemption, Congress routinely legislates in other ways intended to benefit and

⁴ *See* EPA Br. 34, *Ohio v. EPA*, No. 22-1081 (D.C. Cir. Jan. 13, 2023). While EPA’s brief in *Ohio v. EPA* addresses the constitutionality of the preemption framework in section 209(b), section 209(e) is constitutional for substantively similar reasons.

empower only certain states. For example, Congress has created numerous regional commissions, such as the Appalachian Regional Commission, that are partnerships between the Federal government and selected states to foster regional development. *See* 40 U.S.C. Chapters 143, 153.

In one distinct area of federal power outside of the Commerce Clause context, the Supreme Court recognized that principles of equal sovereignty may operate to limit certain exercises of Congress's power. Specifically, in *Shelby County, Ala. v. Holder*, 570 U.S. 529 (2013) (*Shelby County*) the Court held that equal-sovereignty principles applied to limit Congress's Fifteenth-Amendment authority to impose disparate restrictions on state election procedures. The circumstances in *Shelby County* are not comparable to those here. Indeed, that case makes clear that equal-sovereignty principles do not constrain ordinary Commerce Clause legislation. In *Shelby County*, the Supreme Court took pains to emphasize the "extraordinary" nature of the Voting Rights Act's preclearance provisions. 570 U.S. at 545. Those provisions required a disfavored small subset of states to obtain federal permission before any of their laws related to voting could take effect; indeed, the Court understood the provisions to constrain those states from even "enacting" such laws. *Id.* at 534-35. Such requirements intruded into a sensitive area of state policymaking – local election regulation – that had traditionally been the exclusive province of the states. In that sensitive and specific context, the Supreme Court found a "principle of equal sovereignty" to be "highly pertinent." *Id.* at 530.

The principles of federalism that animated the heightened standard applied in the voting procedure context do not apply to the regulation of air pollution from mobile sources. Unlike Congress's Article I powers, the Fifteenth Amendment operates directly on states and displaces state powers historically recognized as core sovereign ones. Concerns about "federal intrusion into sensitive areas of state and local policymaking," *id.* at 545, have considerably less salience where, as here, Congress is exercising the quintessentially federal power of regulating interstate commerce. This principle has special force in the present context, as air pollution – by its nature – crosses state borders. *See EPA v. EME Homer City Generation, L.P.*, 572 U.S. 489, 496 (2014).

And unlike the situation present in *Shelby County*, neither Section 209(e) nor California's potential regulatory efforts could impose any sovereignty burden. In *Shelby County*, Congress had singled out a handful of states for *disfavored* treatment, obligating them to take additional steps not required of other states. In contrast, Section 209(e)(2) *enhances* state sovereignty in a regulatory area where states otherwise would have retained no power. Indeed, under Section 209(e)(2)(B), which allows other states to opt-in to California standards for non-new locomotives if authorized by EPA, Congress increased the regulatory options available to *all* states – while requiring nothing of states that prefer to have locomotive emissions in their borders subject only to the federal standards for new locomotives. The preemption exception for California is thus nothing like the "extraordinary departure from the traditional course of relations between the States and the Federal Government" described in *Shelby County*. 570 U.S. at 545.

Even in the far more sensitive context of state voting procedures, the Supreme Court has affirmed that principles of equal sovereignty do not operate "as a *bar* on differential treatment." *Shelby Cnty.*, 570 U.S. at 544 (citation omitted) (emphasis in original). Congress's choices may still be upheld if the legislation addresses exceptional conditions and there is "a showing that a

statute's disparate geographic coverage is sufficiently related to the problem that it targets." *Id.* at 542 (quoting *Nw. Austin Mun. Util. Dist. No. One v. Holder*, 557 U.S. 193, 203 (2009)). Even if equal-sovereignty principles applied here in the same manner as in *Shelby County*, Section 209(e) would easily clear this bar. Here, the differentiated geographic preemption coverage within section 209 is "sufficiently related to the problem that it targets" – *i.e.*, ameliorating threats to public health and welfare caused by mobile source pollution. *Id.* Commenters fail to demonstrate otherwise. Despite *Shelby County*, they rely exclusively upon their theory that equal-sovereignty principles categorically bar differentiated treatment of states. Commenters advance no alternative fact-based argument that Section 209 fails a "sufficiently-related" standard, much less the applicable rational-basis standard.

Regarding AmFree's contention that the stated rationale for this rule revision does not sufficiently address the concerns underlying the 1998 rule, EPA disagrees. As explained in section IV of the preamble, EPA's final rule aligns with the plain text of the CAA, is well supported by the factual record including developments since the 1998 final rule, and better achieves the legislative intent of providing for exclusive Federal authority for the regulation of new locomotives and new locomotive engines while preserving the opportunity for California to obtain authorization to regulate non-new locomotives and engines under its state rulemaking authority. We further expand on the preamble response in this Response to Comments document.

As explained in the proposal, since the 1998 rule was adopted there have been significant changes in technology and some forms of emission control are possible today that would not have been in the past. The NPRM explained our reasons for revisiting our prior categorical conclusions, and we stand by that rationale in the final rule. In reconsidering our earlier regulations, the EPA found examples of recently-developed technologies, methods, and practices precluded from authorization under the 1998 rule, that do not necessarily affect the design of new locomotives or locomotive engines. Our intention with this action is not to evaluate or consider every possible action that states may try to adopt. Specifically, we are not in this action evaluating for purposes of CAA section 209(e)(2) any aspect of any specific state regulation currently under development by California, and therefore are not responding to any commenter's points raised regarding any specific rule at this time. Rather, now that we have determined that our prior categorical conclusions listed in section 1074.12(b) are no longer necessarily correct in all cases we are adjusting our regulations to not preclude evaluation of possible future waiver requests. Hence, determinations regarding whether a state rule addressing non-new locomotives or engines impermissibly relates to control of emissions from new locomotives or engines can be made on a case-by-case basis.⁵

We disagree with Wabtec's first argument that the preempted state-level controls listed at 40 CFR 1074.12(b) should not be removed. As explained above and in section IV of the preamble, EPA has identified sufficient reasons for removing this regulatory provision. Moreover, by their own preliminary analysis and comments, emissions control technologies exist that do not affect

⁵ The commenter also asserts that a policy change is unwarranted in light of the reliance interests accrued since the 1998 rule. However, the commenter fails to detail such reliance interests with reasonable specificity, precluding EPA's ability to specifically respond to this aspect of the comment. See CAA section 307(d)(7)(B). In any event, even assuming reliance interests have accrued, which EPA disputes, EPA's rationale more than satisfies the legal requirements for making a policy change. See *F.C.C. v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009) (requiring "a more detailed justification" where a "prior policy has engendered serious reliance interests that must be taken into account").

the design of new locomotives and thus could potentially, depending upon how a state rule was scoped and structured, be allowable methods under section 209(e) that would not impermissibly relate to control of emissions from new locomotives or engines. As other comments noted, and described in the proposal, subject to EPA authorization under CAA section 209(e)(2) California retains the right to seek to regulate non-new locomotives and locomotive engines under the CAA. EPA's rule revision provides latitude for the development of state approaches to addressing emissions from non-new locomotives and their engines.

This final revised rule aligns our regulations to the CAA and allows for an authorization to be requested and evaluated by EPA. It does not remove or change the statutory criteria by which an authorization will be evaluated or granted. Any such request received by the EPA will be evaluated on a case-by-case basis against statutory requirements, subject to the procedural requirements of section 209(e)(2)(A). The EPA is not in this action reaching any conclusions that any version of the types of standards previously preempted under 1074.12(b) may or may not be permitted. Such evaluations will be undertaken separately. Rather we are ensuring that waiver requests can be submitted to the agency and that EPA will be able to fairly evaluate them on a case-by-case basis on their merits and against statutory requirements, without categorically precluding entire classes of controls from possible authorization.

We appreciate Wabtec's technical input on the potential technological approaches mentioned by EPA in the proposal. We would note however, that, like EPA, Wabtec did not conduct a full analysis of all potential applications of APU. While highlighting that it may be challenging to accomplish, their analysis does not demonstrate that APU retrofits could not work for any locomotive without impermissibly relating to control of emissions from new locomotives or engines. To the extent Wabtec believes that a future authorization request for APU-related controls runs afoul of the Clean Air Act, Wabtec could submit its comments on such a future request and then provide a detailed evaluation of the specific controls.

We disagree with the characterization by Wabtec, AAR, and AmFree that authorizing a future California regulation addressing non-new locomotives and engines that other states could then adopt could result in a "patchwork" or "quilt" of potentially conflicting or "competing" requirements. This is incorrect, as the Federal and California rules would address different aspects of locomotives. Irrespective of EPA's proposed revisions at 40 CFR part 1074, at most there could only be two sets of regulations that do not overlap: (1) EPA's Federal regulations addressing new locomotives and engines, and (2) California's regulations addressing non-new locomotives and engines.⁶ In a hypothetical scenario where another state wishes to adopt state-level locomotive regulations, in addition to EPA's rules addressing new locomotives, such state must adopt a program with controls identical to those adopted by California and authorized by EPA. Even in that result, there would be no inconsistency or difference between the Federal versus the state regulations in the way any particular aspect of locomotives would be addressed – they would simply regulate different aspects of locomotives and engines, without any competition or conflict between them, EPA's rules exclusively addressing new locomotives and engines, and state rules addressing non-new, with no overlap. Consequently, we think the

⁶ This hypothetical scenario assumes EPA authorizes California's locomotives standards in a future action. EPA is not authorizing any California regulations for locomotives in today's action or prejudging any future authorization request. We are offering this hypothetical scenario solely to address the comment's concern about a patchwork of state locomotives regulations.

“patchwork quilt” analogy used by commenters is misplaced. In this action to revise part 1074, we take no position on whether any particular state program of controls on emissions from locomotives would likely be authorized by EPA.

Regarding Wabtec’s recommendation that EPA should require notice-and-comment rulemaking regarding any new state-level controls and should obtain OEM input on any such controls, EPA’s established process for considering requests for authorization includes public input, including from manufacturers.⁷ Whenever California files an authorization request, EPA publishes a notice for public hearing and written comment in the *Federal Register*. The written comment period remains open for a period of time after the public hearing. Once the comment period expires, EPA reviews the comments and the Administrator determines whether the requirements for obtaining an authorization have been met.⁸

Regarding Wabtec’s request that we consider the useful life of a locomotive and other time-related aspects of a state control measure in review of future authorization requests, the extent to which we consider these measures will be dependent upon the specific authorization request and associated standards, the comments received during the public comment process described above, and the statutory criteria in section 209(e)(1)(A).

We are not following Wabtec’s suggestion to expressly provide in the rule that state controls may not significantly affect the design and manufacture of new locomotives. The final rule adheres to the approach of following the statutory language without further elaboration. There is no statutory requirement to codify this requirement by regulation. As explained in the preamble, EPA acts well within its discretion in evaluating this issue on a case-by-case basis in adjudicating individual authorization requests.

4 Miscellaneous Comments Unrelated to Preemption

Comments by Organizations

Organization: American Short Line and Regional Railroad Association (ASLRRRA)

Short Line Railroads Are Vital to the Freight Rail Network

Short lines are proud to be part of the U.S. freight rail network – the most environmentally-friendly way to move freight over land. Railroads account for roughly 40 percent of U.S. long-distance freight volume but account for only approximately 1.9 percent of transportation-related emissions according to the U.S. Environmental Protection Agency.⁴ Additionally, railroads can move one ton of freight nearly 500 miles per gallon of fuel and are 3-4 times more fuel efficient than trucks.⁵ [EPA-HQ-OAR-2022-0985-1563-A1, pp. 1 - 2]

⁷ EPA does not agree with Wabtec that a rulemaking process is necessary for authorization requests. The statute does not require rulemaking, and Wabtec has failed to articulate a persuasive reason as to why rulemaking is needed, on top of the notice, comment, and public hearing process, already provided by the statute.

⁸ See “Vehicle Emissions California Waivers and Authorizations” <https://www.epa.gov/state-and-local-transportation/vehicle-emissions-california-waivers-and-authorizations>

4 U.S. EPA, Fast Facts on Transportation Greenhouse Gas Emissions, <https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions> (last updated July 14, 2022).

5 Association of American Railroads, Freight Rail and Preserving the Environment, <https://www.aar.org/wp-content/uploads/2020/06/AAR-Sustainability-Fact-Sheet.pdf> (October 2022).

Short line railroads are a critical part of the U.S. freight network. The nation's approximately 600 short line carriers provide the first and last mile service for one in every five rail cars moving each year.⁶ Operating nearly 50,500 route miles, or about 30 percent of the freight rail mileage in the U.S., they play a vital role in the transportation network.⁷ Short line rail service provides safe, efficient, competitive, and environmentally responsible access to transportation for nearly 10,000 rail customers.⁸ [EPA-HQ-OAR-2022-0985-1563-A1, p. 2]

6 Short Line and Regional Railroad Facts and Figures. American Short Line and Regional Railroad Association, 2017; reprint Dec. 2019. Page 1.

7 Id.

8 See Id.; and Webber, Michael. Freight trains are our future. Popular Science, May 9, 2019. <https://www.popsci.com/power-trip-excerpt/>. (last visited July 28 2022)

While almost all are considered small businesses, short line railroads come in many shapes and sizes.⁹ Some short lines are small but have some centralized functions as part of larger short line holding companies, some are larger regional railroads with hundreds of miles of track, and many are small, independent family-owned businesses. Together they represent a diverse, dynamic and entrepreneurial collection of small businesses that make wise use of the limited resources available to them. These small businesses operate the most vulnerable segments of the railroad system and, in many cases, are the only connection for rural businesses to the domestic and global marketplace. They maintain their viability by competing aggressively for business from existing and new customers, investing a significant percentage of their revenues, often 25 percent or more, into their rail infrastructure.¹⁰ They frequently partner with their customers to offer rail transportation alternatives that would otherwise be unavailable to those customers, and they pride themselves on custom, “white glove” service to allow their customers to succeed. The majority of railroads operating across America’s rail network are privately owned and pay for their own infrastructure – a point of departure from other transportation modes that utilize publicly funded roads and waterways.¹¹ [EPA-HQ-OAR-2022-0985-1563-A1, pp. 2 - 3]

9 See 13 C.F.R. § 121.201 and North American Industry Classification System code 482112, “Short Line Railroad.”

10 Facts and Figures, *supra*, at 3.

11 McGurk, Russ. Five Reasons Freight Rail is an Infrastructure Leader. GoRail, May 14, 2018. <https://gorail.org/infrastructure/five-reasons-freight-rail-is-an-infrastructure-leader>.

Short line railroads are further divided into Class II and Class III railroads.¹² Class II railroads have an average revenue of \$79 million and employ an average of 204 people.¹³ The average Class II railroad operates 48 locomotives and serves 73 customers.¹⁴ Class III railroads, the smallest, represent 84 percent of short line and regional railroad miles. Class III railroads have the widest range of operations. Half of Class III railroads operate fewer than 47 track miles.¹⁵ Class III railroads serve an average of 15 customers per railroad and have an annual total freight revenue of only \$4.7 million. They employ an average of 22 people per railroad. Class III

railroads have a median of only six locomotives per railroad.¹⁶ [EPA-HQ-OAR-2022-0985-1563-A1, pp. 3 - 4]

12 See 49 C.F.R. part 1201, General Instructions § 1-1(a). The Surface Transportation Board groups railroads into one of three classes for purposes of accounting and reporting. The class to which any rail carrier belongs is determined by its annual operating revenues after application of a revenue deflator adjustment. 49 C.F.R. pt. 1201, § 1-1(b)(1). Currently, Class I carriers have annual operating revenues of over \$900 million, Class II railroads have annual operating revenues of less than \$900 million but in excess of \$40.4 million, and Class III railroads have annual operating revenues of \$40.4 million or less.

13 Facts and Figures, *supra*, at 13.

14 *Id.*

15 Facts and Figures, *supra*, at 9.

16 Facts and Figures, *supra*, at 12.

Organization: Allergy & Asthma Network et al.

California's unique air quality challenges necessitate that the state be able to set stronger emissions cleanup measures for locomotives as it does for other vehicles. Diesel-powered line haul trains, passenger trains and other locomotives create a significant health burden from their emissions, especially in communities located near railyards. The California Air Resources Board (CARB) estimates that operational emissions from a single train exceed those of more than 400 heavy-duty trucks⁶ [EPA-HQ-OAR-2022-0985-1532-A1, p. 4]

6 California Air Resources Board. Staff Presentation: Proposed In-Use Locomotive Regulation at Slide 4. April 23, 2023. <https://ww2.arb.ca.gov/sites/default/files/barcu/board/books/2023/042723/23-4-1pres.pdf>

In April 2023, the California Air Resources Board concluded a rulemaking, the In-Use Locomotive Standards, to modernize and clean up locomotive emissions through a variety of operational standards. Combined, these actions represent the single largest share of state actions identified in the California State Implementation Plan (SIP) to achieve ozone standards by 2037. The locomotive operations program will achieve over 30 percent of the NOx reductions needed to meet California's ozone SIP commitments. The rules are projected to result in over 3,000 lives saved, tens of billions of dollars in public health benefits and a 90% average cancer risk reduction (cases per million people) in communities nearest California railyards by 2045. [EPA-HQ-OAR-2022-0985-1532-A1, pp. 4 - 5]

The policies are designed to ensure that locomotives over 23 years old will no longer operate in California, bringing cleaner engine technologies into the fleet. This is crucial given that Tier 4 engines represent less than 5 percent of the locomotives operating in California today, while Tier 0 - or earlier - engines make up nearly a quarter of in-state locomotives. CARB approved enforceable idling limits, and created a framework for investment in cleaner technologies. The policy also includes reporting requirements and a framework for phasing zero-emission technologies across California rail operations over the coming decades. [EPA-HQ-OAR-2022-0985-1532-A1, p. 5]

In addition to finalizing this change, we urge EPA to work toward its own more stringent Tier 5 and Zero-Emission standards for locomotive engines to address this major source of air pollution. [EPA-HQ-OAR-2022-0985-1532-A1, p. 5]

Organization: American Soybean Association (ASA)

ASA appreciates the recent work of the EPA to convene a working group to address emissions and reevaluate preemption language as it relates to locomotives. Rail represents one of the most fuel-efficient *methods to* transport cargo. According to the Texas A&M Transportation Institute, railroads have a fuel efficiency of 472 ton-miles per gallon of fuel.⁴

4 Kruse, C.J.; Farzaneh, R., et al. (2022). A Modal Comparison of Domestic Freight Transportation Effects on the General Public: 2001-2019. (<https://www.nationalwaterwaysfoundation.org/file/28/tti%202022%20final%20report%202001-2019%201.pdf>)

The U.S. rail network continues to serve as an important, fuel-efficient artery to move soybeans to ports for export, specifically for those that are exported through the Pacific Northwest. In total, freight rail moves 20% of the soybean tonnage within the United States.

Across the board, Class I railroads are shifting to biodiesel, renewable diesel, and other technologies to significantly reduce their emissions. In addition to hauling soybeans and soybean meal for export, freight rail continues to play an essential role in transporting biomass-based diesel and soybean oil destined for renewable fuel processing to market. Ensuring streamlined regulations will ensure transportation of cargo without service delays that could arise from a patchwork of state locomotive regulations. [EPA-HQ-OAR-2022-0985-1549-A1, pp. 3-4]

Organization: American Thoracic Society (ATS)

For many communities, emissions from train engines, particularly switcher engines, are a significant modifiable source of local air pollution and GHG emissions. As noted in the proposed rule, current EPA regulations pre-empt state and municipal governments from requiring the adoption of readily available emissions control technology in non-new train engines. Because of the long-life cycle of train engines, blocking states and municipal governments from requiring these available emissions reductions places significant and long-term air pollution emissions burdens on local communities. [EPA-HQ-OAR-2022-0985-1517-A1, pp. 4-5]

Organization: Association of American Railroads (AAR), American Short Line and Regional Railroad Association (ASLRRRA)

More specifically, the Associations comment below on EPA's proposal to revise its existing locomotive preemption regulation implementing Section 209(e) of the Clean Air Act. [EPA-HQ-OAR-2022-0985-1492-A1, p. 1]

Railroads are the most fuel-efficient way to move freight long distances over land. On average, railroads are three to four times more fuel efficient than trucks, with a single train removing several hundred trucks from the nation's congested highways.² This is important because the rail industry accounts for roughly 40% of U.S. long-distance freight volume – more than any other mode. Railroads are also critical to the national and global supply chains and are an integral part of the nation's transportation infrastructure, while representing only 1.7% of the nation's transportation-related greenhouse gas emissions.³ [EPA-HQ-OAR-2022-0985-1492-A1, p. 2]

2 Association of American Railroads, Freight Railroads & Climate Change (June 2023) (<https://www.aar.org/wp-content/uploads/2023/06/AAR-Climate-Change-2023-Report.pdf>).

3 Id.

Organization: California Air Resources Board (CARB)

B. Factual and Legal Background

1. Locomotive Emissions Cause Adverse Public Health Impacts in California, Including in Disadvantaged Communities, and Impede NAAQS Attainment

Close proximity to rail operations threatens the health of communities throughout California due to increased exposure to harmful emissions. Diesel-powered locomotives emit a complex mixture of air pollutants, including diesel PM and gases. The gaseous pollutants include NO_x, which can lead to the formation of ozone and the secondary formation of PM.²²⁶ [EPA-HQ-OAR-2022-0985-1591-A1, p.72]

226 9 Cal. Code Regs., tit. 17, § 93000; CARB, Overview Diesel Exhaust & Health, available at: <https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health>.

California has the only extreme nonattainment areas for ozone in the country, South Coast Air Basin, San Joaquin Valley Air Basin and the Coachella Valley. California also has the only area in the country still not meeting the 15 micrograms per cubic meter (ug/m³) annual PM_{2.5} standard established in 1997. [EPA-HQ-OAR-2022-0985-1591-A1, p.72]

The deadly toxic pollution emitted by locomotives is disproportionately concentrated in the most economically disadvantaged communities in the State. Diesel engine emissions are classified as a Toxic Air Contaminant that has no threshold exposure level below which no significant adverse health effects are anticipated from exposure to the identified substance.²²⁷ Many of the communities near rail operations throughout California are classified as disadvantaged by the California Environmental Protection Agency.²²⁸ Studies show that people who live or work near railyards may experience a high level of exposure to diesel PM.²²⁹ Economic disadvantage, environmental pollution, and increased health risks are closely tied. Exposure to diesel particles in disadvantaged communities is, on average, twice the levels experienced in non-disadvantaged communities.²³⁰ Emissions from locomotives are a significant contributor to air pollution and associated health effects in many impacted communities. [EPA-HQ-OAR-2022-0985-1591-A1, pp.72-73]

227 CARB, Identified Toxic Air Contaminants, available at: <https://ww2.arb.ca.gov/resources/documents/carb-identified-toxic-air-contaminants>.

228 Hazard Assessment.

229 Hazard Assessment, p. 48.

230 CARB, Air Quality Progress in California Communities (July 23, 2016), available at: <https://www.arb.ca.gov/board/books/2016/062316/16-6-2pres.pdf>.

For most nonattainment areas in California, to attain the NAAQS ozone standard, all potential reductions, including reductions in locomotive emissions, must be pursued.²³¹ [EPA-HQ-OAR-2022-0985-1591-A1, p.73]

231 2022 State SIP Strategy, p. 6.

The CAA requires U.S. EPA to set and regularly review and revise federal health-based ambient air quality standards for “criteria pollutants,” including PM_{2.5}, NO_x, and ground-level ozone.²³² These NAAQS aim to protect public health from air pollution resulting from emissions of criteria air pollutants and precursors. Depending on whether the air quality in an area meets the NAAQS for a particular pollutant, U.S. EPA designates the area as being in “attainment” or “nonattainment.” U.S. EPA further classifies areas that are in nonattainment according to the severity of their air pollution problem, and areas with more severe pollution levels are given more time to meet the standard while being subject to more stringent control requirements. [EPA-HQ-OAR-2022-0985-1591-A1, p.73]

232 42 U.S.C. §§ 7408-7409.

The NAAQS for ozone, established in 2015 and retained in 2020, is an 8-hour standard with a level of 70 parts per billion, although U.S. EPA recently announced that it may reconsider the previous administration’s decision to retain the ozone NAAQS.²³³ U.S. EPA is also implementing the previous 8-hour ozone standard, set in 2008 at a level of 75 parts per billion. For PM_{2.5}, there are two NAAQS that were set in 1997, revised in 2006 and 2012, and retained in 2020: an annual standard (12.0 ug/m³) and a 24-hour standard (35 ug/m³). Although U.S. EPA is currently considering revising the annual standard to within the range of 9.0 to 10.0. U.S. EPA is also taking comment on an annual PM_{2.5} standard in the range of 8-11 ug/m³ and a 24-hour standard of 25 ug/m³.²³⁴ [EPA-HQ-OAR-2022-0985-1591-A1, pp.73-74]

233 See U.S. EPA, “Ozone National Ambient Air Quality Standards (NAAQS),” available at: <https://www.epa.gov/ground-level-ozone-pollution/ozone-national-ambient-air-quality-standards-naaqs>; U.S. EPA, “EPA to Reconsider Previous Administration’s Decision to Retain 2015 Ozone Standards,” available at: <https://www.epa.gov/ground-level-ozone-pollution/epa-reconsider-previous-administrations-decisionretain-2015-ozone>.

234 U.S. EPA, Proposed Decision for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter (PM), February 3, 2023, available at: <https://www.epa.gov/pm-pollution/proposed-decision-reconsideration-national-ambient-air-quality-standards-particulate>; U.S. EPA, “National Ambient Air Quality Standards (NAAQS) for PM,” available at: <https://www.epa.gov/pm-pollution/national-ambient-air-quality-standards-naaqs-pm>.

As of May 31, 2021, California had nineteen 8-hour ozone nonattainment areas and the only three extreme nonattainment areas in the nation are located in the South Coast Air Basin, San Joaquin Valley, and Coachella Valley of California.²³⁵ South Coast Air Basin and San Joaquin Valley Air Basin currently fail to meet ambient air quality standards for ozone and PM_{2.5}.²³⁶ In the South Coast Air Basin, excess NO_x emissions have led to the highest ozone levels in the nation.²³⁷ For the South Coast Air Basin to meet the latest federal ozone standards, overall NO_x emissions need to be reduced to 60 tons per day in 2037, an approximately 80 percent reduction from 2018 levels.²³⁸ [EPA-HQ-OAR-2022-0985-1591-A1, p.74]

235 CARB, 2016 State Strategy for the State Implementation Plan for Federal Ozone and PM_{2.5} Standards (March 7, 2017), available at: <https://ww2.arb.ca.gov/resources/documents/2016-state-strategy-state-implementation-plan-federalozone-and-pm25-standards>

236 U.S. EPA, Status of California Designated Areas, available at: https://www3.epa.gov/airquality/urbanair/sipstatus/reports/ca_areabypoll.html

237 Ibid.

238 South Coast Air Quality Management District, 2022 Clean Air Management Plan, Chapter 5, available at: <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-airquality-management-plan/08-ch5.pdf?sfvrsn=8#:~:text=%E2%80%A2Without%20additional%20control%20measures%2C%20the%20South%20Coast%20Air,is%2071%20percent%20lower%20than%20the%202037%20baseline>

More than half (21 million out of nearly 40 million) of Californians live in areas that exceed the most stringent 70 ppb ozone standard.²³⁹ Further, a disproportionate number of California's population live in areas that are deemed extreme nonattainment, meaning they are most impacted by high ozone levels.²⁴⁰ These Californians often live in low-income and disadvantaged communities that experience greater exposure to diesel exhaust and other toxic air pollutants compared to surrounding areas. NOx emission reductions are key to reducing ozone and are especially necessary in the large parts of California that are out of attainment or overburdened by NOx and ozone pollution. [EPA-HQ-OAR-2022-0985-1591-A1, p.74]

239 U.S. EPA, Status of California Designated Areas, available at: https://www3.epa.gov/airquality/urbanair/sipstatus/reports/ca_areabypoll.html; U.S. Census Bureau, Annual Estimates of the Resident Population for Counties; California: April 1, 2020 to July 1, 2022, available at: <https://www2.census.gov/programs-surveys/popest/tables/2020-2022/counties/totals/co-est2022-pop-06.xlsx>

240 Ibid.

NOx emission reductions are also key to reducing PM2.5 pollution, as NOx contributes to the formation of secondary PM2.5 and ground level ozone.²⁴¹ In the San Joaquin Valley, NOx emission reductions are key to reducing both PM2.5 and ozone air pollution and reaching attainment.²⁴² [EPA-HQ-OAR-2022-0985-1591-A1, p.75]

241 U.S. EPA, Ground Level Ozone Basics, available at: <https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics>; U.S. EPA, Evaluating the Contribution of PM2.5 Precursor Gases and Re-entrained Road Emissions to Mobile Source PM2.5 Particulate Matter Emission p.22, available at: <https://www3.epa.gov/ttnchie1/conference/ei13/mobile/hodan.pdf>

242 CARB, Staff Report Proposed SIP Revision for the 15 ig/m3 Annual PM2.5 Standard for the San Joaquin Valley, page 1, August 13, 2021, available at: <https://ww2.arb.ca.gov/sites/default/files/2021-08/SJV%2015%20ug%20SIP%20Revision%20Staff%20Report%20FINAL.pdf>

Given the extraordinary challenges that California is facing to attain and maintain ozone and PM2.5 NAAQS, substantial emission reductions beyond those currently being achieved by state regulatory programs are critically necessary. Mobile sources such as trucks and locomotives, and the fossil fuels that power them, are the largest contributors to the formation of PM2.5, NOx, and ozone emissions in California. The 2022 State Implementation Plan (SIP) Strategy, which describes how the state will meet its air quality commitments, states that for California to meet air quality standards, it is imperative to reduce emissions from locomotives.²⁴³ [EPA-HQ-OAR-2022-0985-1591-A1, p.75]

243 CARB, 2022 State Strategy for the State Implementation Plan, p. 92 (September 22, 2022), available at: https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf (hereinafter 2022 State SIP Strategy).

Under the CAA, California is required to submit a SIP for areas that exceed the health-based NAAQS. The SIPs discuss California's intention and pathway to attaining the standards by specific dates. As part of the South Coast 2016 Air Quality Management Plan, CARB included a

SIP Strategy which was approved by U.S. EPA that describes CARB's commitment to achieve the mobile source and consumer products reductions needed to meet federal air quality standards over the next 15 years.²⁴⁴ Additionally, California Senate Bill 44 signed into law in 2019 acknowledges the ongoing need to evaluate opportunities for mobile source emission reductions.²⁴⁵ [EPA-HQ-OAR-2022-0985-1591-A1, p.75]

244 CARB, Revised Proposed 2016 State Strategy for the State Implementation Plan (March 7, 2017), available at: <https://www.arb.ca.gov/planning/sip/2016sip/rev2016statesip.pdf>

245 Senate Bill 44 (Skinner, Stats. 2019, ch. 297), Medium- and heavy-duty vehicles: comprehensive strategy (September 23, 2019), available at: http://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=201920200SB44

2. Railroads Continue to Operate Old Locomotives Creating Emissions that Are Projected to Eclipse Emissions from Trucks

The two Class I railroads operating in California—Union Pacific (UP) and BNSF Railway (BNSF)—operate approximately 12,000 freight interstate line haul locomotives annually within the State, representing about 85 percent of the statewide locomotive activity and emissions. UP and BNSF also operate switcher locomotives, or those traveling around rail yards, representing about five percent of the statewide locomotive activity and emissions. A much smaller number of Class II and III railroads, industrial operators, and passenger railroads also operate in the State. [EPA-HQ-OAR-2022-0985-1591-A1, p.76]

In spite of the wide commercial availability of new, cleaner locomotives that could cut average emissions by up to 80 percent, locomotive operators have continued to use older, heavily polluting locomotives. U.S. EPA has adopted 5 emission standards tiers for locomotives, Tiers 0 through 4, with Tier 0 being the least stringent and Tier 4 being the most stringent.²⁴⁶ Per U.S. EPA regulations, a locomotive is classified in an emissions Tier based on its original manufacture date. But a locomotive may remain in the emissions tier applicable to its original manufacture date if it is remanufactured, as defined in U.S. EPA's regulations, whereas a freshly manufactured locomotive would be subject to the Tier 4 standards.²⁴⁷ Class I locomotive operators in California have remained at a Tier 2 average since 2010, and Class III and Industrial locomotive operators operate at a Tier 0/0+ average.²⁴⁸ [EPA-HQ-OAR-2022-0985-1591-A1, p.76]

246 40 CFR § 1033.101.

247 Ibid.

248 CARB, Rail Emission Reduction Agreements, Table: 2021 Fleet Activity Data for the South Coast Air Basin, available at: <https://ww2.arb.ca.gov/resources/documents/rail-emission-reduction-agreements>; The Tier 0-2 standards were made more stringent in 2008 and these current standards are sometimes differentiated by the previous standards by using a "+" symbol to signify the 2008 standards. Locomotives, Table 1, April 2009, available at: <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100500B.pdf#:~:text=EPA%20has%20estimated%20average%20emission%20rates%2C%20given%20in,explanation%20of%20which%20standards%20apply%20to%20which%20locomotives>. See also NPRM at 26,093 (current in-service fleet in the U.S. dominated by Tier 2 and earlier locomotives).

NOx emission reductions from locomotives have not kept pace with NOx reductions in other freight transport sectors. Trucks in California have become much cleaner over the last decade and are moving towards ZE technology. NOx emissions from LDVs, HD trucks, and off-road

equipment in the South Coast Air Basin have declined by 75 percent since 2000, while emissions from locomotives and other federally regulated sources have declined by half that amount over the same period.²⁴⁹ [EPA-HQ-OAR-2022-0985-1591-A1, p.76]

249 CARB, 2020 Mobile Source Strategy, p. 74 (October 28, 2021) available at: https://ww2.arb.ca.gov/sites/default/files/2021-12/2020_Mobile_Source_Strategy.pdf

Locomotives are quickly becoming one of the top mobile-source polluters in the State, on a per transport-container basis.²⁵⁰ By 2030, locomotive emissions are projected to contribute 14 percent of the State’s PM2.5 freight emissions and 16 percent of the State’s NOx freight emissions.²⁵¹ This is due in part to how much progress California has made through the regulation of other freight sources. For example, HD freight trucking fleets are subject to regulations that require upgrading to newer trucks with cleaner emissions technologies, while older, dirtier locomotives using outdated emissions technology continue to operate throughout the State. CARB staff’s analysis concludes that trucks will be the cleaner mode to move freight this year.²⁵² [EPA-HQ-OAR-2022-0985-1591-A1, p.77]

250 CARB, Draft Truck vs. Train Emissions Analysis (September 2020), available at: <https://ww2.arb.ca.gov/resources/fact-sheets/draft-truck-vs-train-emissions-analysis> (hereinafter Truck vs. Train Analysis).

251 CARB, 2022 State Strategy for the State Implementation Plan, p. 92 (September 22, 2022), available at: https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf (hereinafter 2022 State SIP Strategy).

252 Truck vs. Train Analysis.

Organization: District of Columbia Department of Energy and the Environment (DOEE)

California Rail Preemption

EPA is also proposing to revise 40 CFR 1074 in this rulemaking to ensure that the preemption of California’s adoption of locomotive standards more accurately implements the language found in the Clean Air Act. DOEE is supportive of this revision. California, through the promulgation of the “In-Use Locomotive Regulation,” is undertaking innovative policies to tackle emissions from the in-use locomotive fleet. Given that this regulation appears to meet the strict text of the Clean Air Act, and in the spirit of federal cooperation, DOEE finds EPA’s proposal to remove this preemption timely and beneficial. [EPA-HQ-OAR-2022-0985-1620-A1, p. 2]

Environmental Justice Implications

Reducing rail emissions is important to the District. According to the 2020 National Emissions Inventory, 7.4% of oxides of nitrogen emissions in the District are from the rail sector. While that might seem small, half of those emissions are concentrated in the Ivy City rail yard near Union Station. Ivy City is a historically overburdened community that is a focus for both the District’s and EPA Region 3’s environmental justice efforts. Additionally, the Ivy City rail yard produces approximately three tons of fine particulate matter annually, and a large portion of those emissions come from switcher trains that operate entirely within the District’s borders. It is exemplary that EPA is moving toward allowing California to implement new approaches to reduce rail emissions, some of which may be beneficial to the District if they are adoptable by the District and other states. [EPA-HQ-OAR-2022-0985-1620-A1, p. 2]

Organization: Environmental Defense Fund (EDF)

As EPA has recognized, pollution from locomotives contributes significantly to unhealthy air quality and climate change and interferes with state and local governments' ability to achieve and maintain compliance with air quality standards.²⁴⁶ Locomotives directly emit multiple dangerous air pollutants, including particulate matter, nitrogen oxides, volatile organic compounds, sulfur dioxide, carbon monoxide, air toxics, and greenhouse gases, as well as harmful noise. [EPA-HQ-OAR-2022-0985-1644-A1, p. 93]

246 See, e.g., 73 Fed. Reg. 37,095, 37,099-100 (June 30, 2008).

Locomotive pollution is a substantial and growing problem for many regions; cargo volume and intermodal rail traffic have increased in recent decades and are projected to continue to grow.²⁴⁷ [EPA-HQ-OAR-2022-0985-1644-A1, p. 93]

247 See, e.g., THE Impact Project, Tracking Harm: Health and Environmental Impacts of Rail Yards 3 (2012), <https://envhealthcenters.usc.edu/wp-content/uploads/2016/11/Tracking-Harm.pdf>.

Recent data show that the in-service locomotive fleet continues to be dominated by older, dirtier locomotives subject to EPA's less stringent emissions standards. Less than a quarter of today's fleet meets Tier 3 or Tier 4 standards (the most protective standards that were adopted in 2008).²⁴⁸ [EPA-HQ-OAR-2022-0985-1644-A1, p. 94]

248 Proposal at 26093.

Locomotive pollution is also an environmental justice issue. Those living, working, and attending school near railyards, ports, railways, and other major sources of locomotive pollution are disproportionately low-income and people of color.²⁴⁹ Research shows, for instance, that young children of color and low-income children living near a major freight railyard are more likely to experience asthma-related emergency room visits.²⁵⁰ Locomotive pollution also adversely affects the health of railroad industry workers.²⁵¹ [EPA-HQ-OAR-2022-0985-1644-A1, p. 94]

249 See, e.g., Andrea Hricko et al., Global Trade, Local Impacts: Lessons from California on Health Impacts and Environmental Justice Concerns for Residents Living near Freight Rail Yards, 11 Int'l J. Env't. Res. Pub. Health 1914 (2014).

250 R. Spencer-Hwang et al., Association of major California freight railyards with asthma-related pediatric emergency department hospital visits, 13 Preventive Med. Rep. 73 (2019).

251 See, e.g., Eric Garsick et al., Lung cancer in railroad workers exposed to diesel exhaust, 112 Env't. Health Perspectives 1539 (2004).

Organization: Hillyard, Caitlin

My husband and I worked hard to save for our first home, which is located along the railroad tracks. We know our home is next to the tracks (we bought what we could afford where it was available). But we're not stupid. We expected trains to pass by and we don't mind when they do. Unfortunately, the railroad uses the tracks for a different, more disruptive purpose - to stage trains for crew changes, something we didn't know before we purchased our home. Trains with three or four engines sit there for hours each day emitting diesel fumes less than 500 feet from our residential block. We've seen over 100 trains since late January 2023. As they idle, we notice

our throats, eyes and noses become irritated. Diesel fumes are associated with adverse health outcomes, including many harmful cancers. Because of that, we worry about our long-term health, as well as the health of the retired people and families with children who live on our block. We know from our research that we're not the only family to endure this in our state or across the nation. We would like the railroad to idle trains in another location, away from residences. The railroad knows about our issue, but is dragging its feet. We're just little people trying to have a good-faith negotiation with a giant corporation. No state laws protect us. We've spoken to the EPA and the FRA, as well as state-level government offices. The railroad essentially regulates itself. Why should they get to do that when others have to follow nuisance laws? What gives them the right to put us at risk?

That said, state senators have introduced a bill to bar such convenience idling due to the harmful impact of emissions from locomotives. Without this rule change, bills like this one have no teeth. But residents like us want to give our state government the power to protect us. Local context matters where public health is concerned. Our neighborhood, city and state experience different impacts from freight emissions than other places. That's why we need state-level oversight over emissions - because it would allow our state representatives to react to our local context. Our home sits in a formerly redlined neighborhood in an Environmental Justice Tract. The families here are long overdue for respite from industrial pollution. Many other neighborhoods like it need the same. We hope this rule change can finally give us recourse. [EPA-HQ-OAR-2022-0985-1739]

Organization: Moving Forward Network (MFN) et al.

No matter the city, there are certain shared features of living alongside the global freight system: First, communities of color and low income communities are consistently on the frontlines/fenceline of pollution from the freight sector; Second, any equipment with emissions affects community health; and Third, industry very rarely, if ever, volunteers to transition its equipment to zero-emissions. [EPA-HQ-OAR-2022-0985-1608-A3, p. 1]

The rail industry remains one of the most significant sources of pollution in communities across the country. Our communities live near railyards and freight rail routes, where some of the dirtiest switcher and line-haul locomotives, some 50 to 60 years old, belch diesel particulate matter daily. Tracks are located feet from our homes, schools, playground, and workplaces. Children, families, and workers in our communities have had to pay for the rail industry's pollution with their health for decades and continue to suffer devastating short- and long-term health consequences from exposure to diesel pollution. [EPA-HQ-OAR-2022-0985-1608-A3, p. 1]

Diesel locomotives, the most widely used in the United States, have significant and long-lasting negative impacts on public health, including increased childhood asthma, lung disease, and premature death. Low-income communities and communities of color often suffer the most from the locomotive industry's life-threatening pollution because railyards and rail routes are typically located in, on, and near these communities. [EPA-HQ-OAR-2022-0985-1608-A3, p. 1]

“We have high-risk zip codes where asthma, heart disease, and cancer are above the national average and are the same areas sliced by the second largest rail system in the nation.” – Atenas Mena, CleanAirNow (Kansas City, Kansas) [EPA-HQ-OAR-2022-0985-1608-A3, p. 1]

We also ask EPA to take affirmative actions to reduce locomotive pollution, including by adopting a Tier 5 zero-emission locomotive emission standard, requiring all locomotives and engines used in locomotives meet a Tier 5 zero-emission locomotive emission standard by 2045, and working with our organizations to develop strategies to reduce railyard pollution. [EPA-HQ-OAR-2022-0985-1608-A3, p. 2]

In sum, the freight sector continues to radically impact the health and well-being of communities across the country. Locomotives remain on the shortlist of polluting industries. There is a dire need for all levels of government to act as soon as possible to hold Class I, II, and III operators accountable for upgrading their fleets to cleaner tiers and zero-emission technology. [EPA-HQ-OAR-2022-0985-1608-A3, p. 2]

I. Locomotive pollution has significant negative impacts on our health, regional air quality, and climate.

A. The global freight system pollutes our communities.

The freight system—the intricate network transporting huge volumes of goods from places of manufacturing origin to the marketplace to local businesses, governments, communities, and the homes of consumers, and then waste—continues to be one of the most significant sources of pollution and environmental injustice in the United States. Hundreds of thousands of diesel trucks, locomotives, ships, and cargo handling equipment dump tons of dangerous criteria pollutants into our airways daily. Cargo facilities that serve as hubs in the goods movement network, like ports, railyards, and warehouses, and the channels that carry this huge machinery, like freeways and rail lines, are more often than not inhumanely close to where people live and work. Decades of racist zoning policies have practically ensured that these polluting facilities are located in low-income communities and communities of color, creating an environmental justice disaster. Not only this, but it is commonplace for multiple polluting facilities to be concentrated in these communities. If there is a nearby railyard, there is more likely to be a nearby port, freeways, warehouses, or refineries—or all of the above. People who bear the brunt of the negative effects of one polluting facility are much more likely to suffer the consequences of multiple cumulative impacts. It is woefully unjust for communities to bear the cumulative impacts from railyards and locomotives, which include public health concerns, economic impacts, public safety fears, and housing issues. [EPA-HQ-OAR-2022-0985-1608-A3, p. 2]

We rely on our air regulators at the federal, state, and local levels to prioritize the need for industry to eliminate its pollution. Until then, communities on the frontlines will continue to pay with our health. [EPA-HQ-OAR-2022-0985-1608-A3, p. 2]

B. Railyard pollution has created a national public health crisis.

There is no debate that rail pollution negatively affects the health, safety, and well-being of communities across the country. Exposure to diesel exhaust from locomotives is deadly. Exposure to the pollutants in diesel exhaust—especially long-term exposure—has clear, adverse health effects. More than 90% of diesel exhaust consists of ultra-fine particles that are less than 1 micron in diameter. These ultra-fine particles are so small that they can cross the air-blood

barrier in the lungs and enter the bloodstream, allowing them to travel to virtually any organ system in the body and disrupt normal cell function. [EPA-HQ-OAR-2022-0985-1608-A3, pp. 2 - 3]

The California Air Resources Board (CARB) performed health risk assessments for every major railyard in California from 2005 to 2008. While these reviews are dated, they remain some of the most robust studies of health risks from railyard pollution. This speaks to the need for more current, detailed health assessments of the impacts of railyard pollution on local communities. Thankfully, the U.S. Federal Railroad Administration (FRA) has recognized that there is a disparity in the communities who suffer from railyard pollution. The FRA is developing a mapping tool overlaying railyards on environmental justice communities to assess where these harms are being inflicted. We look forward to engaging with the FRA on the development of this tool. In addition, we urge EPA to work with sister agencies to invest in developing public health research in railyard hubs around the country, including but not limited to Chicago, Kansas City, Charleston, Houston, and New Jersey. [EPA-HQ-OAR-2022-0985-1608-A3, p. 3]

In the meantime, CARB's data paints a vivid picture about the significantly elevated cancer and other health risks from living or working in close proximity to a railyard. In 2008, the estimated diesel emissions from railyard operations at BNSF San Bernardino, BNSF Barstow, and UP Colton railyards in Southern California was 66.4 tons of PM emissions.¹ Residents living near each of the San Bernardino County railyard facilities experienced between 575 to 3,300 in a million increased risk of cancer from railyard pollution alone—excluding any additional cancer risk from other cumulative impacts or regional air pollution.² The UP Colton railyard, which is 5.5 miles long and one-third of a mile wide, is just 350 feet from the nearest homes and neighbors a local high school.³ Locomotive operations account for 99% of diesel PM emissions at UP Colton, highlighting the need for stricter locomotive regulations.⁴ Residents and local workers near these San Bernardino County railyards were also found to be at increased risk for asthma-related emergency room visits, increased risk of death from cardiopulmonary issues, and increased hospitalizations for cardiovascular and respiratory illness.⁵ [EPA-HQ-OAR-2022-0985-1608-A3, p. 3]

1 Ed Avol, Professor of Environmental Health, Keck School of Medicine of University of Southern California, testimony (“Avol Testimony”), at Q55.

2 See Avol Testimony at Q44, Q47, Q52.

3 See Avol Testimony at Q51.

4 See Avol Testimony at Q51.

5 See Avol Testimony at Q44.

CARB's assessment also highlights the communities that are saddled with these health risks. For example, residents who live near the BNSF San Bernardino and UP Colton railyards are more likely to be low-income and to self-identify as Latinx than residents in other parts of San Bernardino, Barstow, and Colton.⁶ [EPA-HQ-OAR-2022-0985-1608-A3, p. 3]

6 See Avol Testimony at Q46, Q50, Q54.

Given that some of these railyards have since grown and adoption of Tier 4 locomotives remains at less than 5% in California, we can expect that these health impacts have not improved

much, and in fact, may have worsened over the last 15-20 years. [EPA-HQ-OAR-2022-0985-1608-A3, p. 4]

Moreover, a study in Newark, New Jersey, found that “[e]missions of PM2.5, black carbon, and NOx from non-roadway sources, particularly locomotives and port operations, have the highest air quality impact in the total study area, followed by medium- and heavy-duty vehicles.”⁷ Critically, emissions from locomotives and port operations “contribute around 95 percent of the total emissions” from the area, which included much of southeast Newark and north Elizabeth, including Newark Airport and the ports of Newark and Elizabeth, New Jersey.⁸ [EPA-HQ-OAR-2022-0985-1608-A3, p. 4]

7 MJ Bradley & Associates, Newark Community Impacts Mobile Source Emissions - Community-Based Participatory Research Analysis, (Nov. 2020), https://njeja.org/wpcontent/uploads/2021/06/NewarkCommunityImpacts_MJBA.pdf.

8 Id.

In addition to local health effects, locomotive pollution makes up a considerable portion of regional air pollution and therefore presents challenges for states to reduce regional air quality and to achieve attainment of the federal air quality standards. The Clean Air Act’s cooperative federalism scheme holds both states and the federal government accountable for reducing regional air pollution—all parties must do more. Regardless of who is responsible for reducing this pollution, there is no question that locomotive emissions are a major contributor to states’ total pollution. Again, we lack sufficient data about the amount of pollution from locomotives in each state, so California’s data must serve as a stand in. In California, rail pollution contributes 15% of all freight sector NOx emissions and 11% of all freight sector PM2.5 emissions in 2022.⁹ In California’s case—and likely in the case of other states—it is next to impossible to achieve the National Ambient Air Quality Standards (NAAQS) without addressing locomotive pollution. [EPA-HQ-OAR-2022-0985-1608-A3, p. 4]

9 CARB, In-Use Locomotive Regulation Presentation (Nov. 18, 2022), at 5, <https://ww2.arb.ca.gov/sites/default/files/barcu/board/books/2022/111722/placeholder/22-15-6pres.pdf>.

C. The dirtiest, oldest switcher locomotives operate in community railyards.

Railyard pollution, in particular, remains exceptionally harmful to the health of people who live and work near these facilities. Switcher locomotives make up the largest share of railyard locomotives, yet they are also notoriously some of the most outdated and highest-polluting locomotives. The following table shows that two-thirds of Class I locomotives operating in railyards in 2020 were Tier 0 or Tier 0+. This means that 67% of the locomotives that operate closest to where people live are emitting at extremely high levels. [EPA-HQ-OAR-2022-0985-1608-A3, p. 4]

Even more concerning is that Class I railyard fleets became dirtier over time. From 2017 to 2020, locomotive fleets used in railyards moved toward older technology and away from cleaner, higher tier engines. This trend should be deeply concerning to EPA, just as it is to our members. [EPA-HQ-OAR-2022-0985-1608-A3, p. 4. See Table 1 2017-2020 Yard Engine Fleet Composition Comparison on p. 5 of docket number EPA-HQ-OAR-2022-1608-A3.]

This shocking information communicates three things clearly: First, railroads have no interest in being good neighbors to frontline communities living near railyards; Second, railroads cannot

be trusted to voluntarily adopt cleaner technology over time—and in fact, will revert to older, dirtier technology if given the choice; and Third, twenty-five years after EPA adopted its first locomotive emission standard, federal, state and local regulations to address rail pollution remain far too weak. [EPA-HQ-OAR-2022-0985-1608-A3, p. 5]

The impacts of this crisis are being felt across the country. Class I railyards are located in almost every single state, as shown in the following figure.¹⁰ [EPA-HQ-OAR-2022-0985-1608-A3, p. 5.] [See Figure 1 Rail Yard Locations in the United States on p. 6 of docket number EPA-HQ-OAR-2022-1608-A3.]

10 2020 National Emissions Inventory Locomotive Methodology Prepared for U.S. Environmental Protection Agency by Eastern Research Group, Inc. (May 19, 2022), at 8, https://gaftp.epa.gov/air/nei/2020/doc/supporting_data/nonpoint/Rail/2020_NEI_Rail_062722.pdf.

But the harms from railyards do not stop with public health. Living near a railyard comes with a slew of other debilitating consequences. Stadium-style lights beam into neighboring homes at all hours of the night; trains blare their horns unexpectedly and at jarring levels¹¹; and the vibrations from passing trains rumble homes like an earthquake. There have also been numerous reported instances of emergency vehicles being unable to travel to where they need to be because a miles-long train or idling locomotive stops them in their path. Trains are also often stopped for hours and days at a time, creating safety issues for children walking to school. All of these side effects result in significantly reduced quality of life and shorter average lifespans in our communities. The generational trauma from these cumulative incidents carries the legacy of these dangerous facilities through our communities' family lines. [EPA-HQ-OAR-2022-0985-1608-A3, p. 6]

11 Emily Baumgaertner, Jsaon Jao, Eleanor Lutz, Josephine Sedgwick, Rumsey Taylor, Noah Throop, Josh Williams, Noise Could Take Years Off Your Life. Here's How, (June 9, 2023), <https://www.nytimes.com/interactive/2023/06/09/health/noise-exposure-health-impacts.html>.

D. Members from freight hubs around the United States tell their stories of living near railyards.

Community members across the country, from Kansas City to Chicago to San Bernardino, share their stories of living with railyard pollution. [EPA-HQ-OAR-2022-0985-1608-A3, pp. 6 - 7]

Kansas City, Kansas. Atenas Mena, CleanAirNow

- My hometown, Kansas City, is home to the second-largest rural transportation center in the country. In fact, the rail industry remains one of the most significant sources of this environmental injustice for many of our communities. Diesel-powered locomotives emit large quantities of nitrogen oxide, diesel particulate matter, and volatile organic compounds. Residents of Armourdale, which is a neighborhood in Kansas City, Kansas, predominantly Latino, Hispanic working class, is enclosed between large rail yards, dirty industry, and heavily trafficked highways. They experience a life expectancy of 22 years shorter, according to the CDC. This is the same neighborhood where you will not find any electric charging stations or access to transportation. Healthcare and other resources are limited, and climate change weather patterns are felt regularly with record-breaking heat waves, floods, droughts, and concerning poor air quality days. KCK is not siloed in this large and impactful discrepancy. Our nation has been overburdening environmental

justice communities by having them bear the brunt of systemic racism with the legacy of redlining, zoning and dumping practices, leaving families without access to clean air, water, and land. [EPA-HQ-OAR-2022-0985-1608-A3, p. 7]

Chicago, Illinois – Jose Acosta, Little Village Environmental Justice Organization

- Oh, there are also schools and parks and other things that are near these rail yards (in Chicago). But these are essentially inland ports, right? They function as a port, although they're not... they don't have access to water, but they're just as busy. If you look at all of our 19 ports, our 19 inland ports, they're all just as busy as... almost as busy as the Los Angeles and Long Beach ports... where the intermodal are located, people of color are also living. So this is an issue that primarily impacts black and brown communities, and as a result, we're dealing with the most concentrated pollution. And in addition to the intermodal, you also have other logistics activities that locate as closely as possible to these intermodal, right, so distribution centers and warehouses and trucks, other trucking yards, and just all other logistics facilities want to be as close to these as possible. In addition, many of these are also close to highways, so there's that combination of that as well. [EPA-HQ-OAR-2022-0985-1608-A3, p. 7]

San Bernardino, California – Ivette Torres, People's Collective for Environmental Justice

- Two of the biggest rail communities in the Inland Empire, California, are Colton and San Bernardino... Colton is not only worried about freight. Colton is a small community. There are no official sensors and no official monitoring. Yet, they're impacted by two industry highways, gas plants, cement plants, huge warehouse logistics, as well as the expansion of rail coming their way through BNSF and Union Pacific. For San Bernardino, we have the BNSF in our facility that has been in San Bernardino since the beginning, at least the rail. But the facility has expanded throughout the years and continues to expand. This last year they're adding, they passed, the city council passed another rail expansion, another line, and that is displacing homes and buying out homes on the west side community of San Bernardino, which is already really impacted by the thousands of trucks and trains that come out of that community. And those are during COVID, they took advantage and bought out some homes, and most of these people are renters, so they had no idea they were going to be kicked out of their homes so the BNSF could expand their day-to-day trade. [EPA-HQ-OAR-2022-0985-1608-A3, pp. 7 - 8]

Detroit, Michigan – Raquel Garcia, Southwest Detroit Environmental Vision

- The kids walk under this rail viaduct. It runs all day and shakes the school. If it derailed or spilled toxic materials, it would literally spill onto faculty cars. [EPA-HQ-OAR-2022-0985-1608-A3, p. 8. See Photo 1 Cesar Chavez Academy High School, Detroit Michigan, Photo by: Raquel Garcia on p. 8 of docket number EPA-HQ-OAR-2022-1608-A3.]

Joliet, Illinois – Zhenya Polozova, Warehouse Workers for Justice

- Staff and members of Warehouse Workers for Justice measuring particulate matter pollution within and around CenterPoint, the largest inland port in North America based in Will County, Illinois. This ongoing measurement led to the creation of the report for Clean Air & Good Jobs, a report outlining the challenges and necessary steps to enact a

just transition to zero-emissions for Will County. [EPA-HQ-OAR-2022-0985-1608-A3, p. 8.] [See Photos 2-5 on p. 9 of docket number EPA-HQ-OAR-2022-1608-A3.]

E. The majority of locomotives are outdated and emit high levels of diesel exhaust, NO_x, and PM.

Despite EPA adopting four tiers of locomotive emission standards starting in 1998, the state of locomotive pollution in the US remains dire. The nearly \$80-billion freight rail industry remains one of the most polluting industries in the country. Not only is railyard pollution of specific concern, but long distance line-hauls continue to pollute at concerning levels. The basic reason for this is that the majority of locomotives still in operation are far outdated and therefore emit unnecessarily high levels of diesel exhaust, NO_x, and PM. Table 5 shows the emission factors for criteria pollutants for 2020 line-haul locomotives by tier.¹² NO_x, PM and VOC emissions for Tier 3 and older locomotives are dramatically higher than for Tier 4 locomotives. For instance, even jumping up just one tier from Tier 3 to Tier 4 results in impressive emission reductions: Tier 3 line-hauls emit almost 500% more NO_x, 533% more PM_{2.5}, and 325% more VOC than Tier 4 line-hauls. Yet, only 9% of Class I locomotives—whether switcher or line-haul—were built in 2015 or later and, therefore must meet the most restrictive Tier 4 standard. [EPA-HQ-OAR-2022-0985-1608-A3, pp. 9 - 10.]

12 2020 National Emissions Inventory Locomotive Methodology Prepared for U.S. Environmental Protection Agency by Eastern Research Group, Inc. (May 19, 2022), at 5, https://gaftp.epa.gov/air/nei/2020/doc/supporting_data/nonpoint/Rail/2020_NEI_Rail_062722.pdf.

By comparison, according to 2021 data from the U.S. Bureau of Transportation Statistics, 45% of Class I locomotives are Tier 0 and emit a jarring 860% more NO_x, 2,130% more PM_{2.5}, and 1,200% more VOC than Tier 4 line-hauls. These figures warrant a pause—almost half of all Class I locomotives operating in the United States emitted criteria pollution at these unnecessarily high levels, even though these toxins are known to cause conditions like cancer, cardiac and respiratory issues, reproductive issues, asthma, lowered lung function, chronic obstructive pulmonary disorder, and premature death. [EPA-HQ-OAR-2022-0985-1608-A3, p. 10.] [See Table 2 2020 Line-haul Locomotive Emission Factors by Tier, AAR Fleet Mix (g/gal) on p. 10 of docket number EPA-HQ-OAR-2022-1608-A3 and Figure 2 2021 Class I Railroad Locomotive Fleet by Year Built on p. 11 of docket number EPA-HQ-OAR-2022-1608-A3.]

13 U.S. Bureau of Transp. Statistics, Class I Railroad Locomotive Fleet by Year Built, <https://www.bts.gov/content/class-i-railroad-locomotive-fleet-year-built>.

III. States and local governments must reduce locomotive pollution to protect public health and attain federal air quality standards.

Locomotives are responsible for a significant amount of pollution in communities across the country. There is no way to clean the air and for states to achieve federal air quality standards without regulating these significant sources of air pollution. [EPA-HQ-OAR-2022-0985-1608-A3, p. 13]

Locomotive pollution impacts all of the NAAQS, and ozone and particulate matter in particular. EPA has progressively strengthened the ozone and particulate matter standards in light of new scientific evidence demonstrating health impacts at lower levels of pollution. Most recently, in 2015, EPA revised the primary and secondary 8-hour ozone standard from the 2008 level of 75 parts per billion (ppb) to 70 ppb, and in 2013, the primary annual PM_{2.5} standard was

revised from 15 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) to 12 $\mu\text{g}/\text{m}^3$. [EPA-HQ-OAR-2022-0985-1608-A3, p. 13]

Although states are required to comply with these standards, many continue to fail to meet one or more ozone standards. In fact, almost 125 million people, or 37.7 percent of the U.S. population, live in areas currently classified as being in nonattainment of the 2015 8-hour ozone standard (70 ppb).²⁹ These areas include 204 counties in 23 states, including California, Illinois, Missouri, New Jersey, and New York.³⁰ Parts of California and Pennsylvania are also in nonattainment of the PM_{2.5} standard.³¹ [EPA-HQ-OAR-2022-0985-1608-A3, pp. 13 - 14]

29 U.S. Env't Prot. Agency, 8-Hour Ozone (2015) Designated Area/State Information, (Nov. 30, 2022), <https://www3.epa.gov/airquality/greenbook/jbtc.html>.

30 Id.

31 Id.

Many of the states that continue to fail to meet the ozone standards also have high concentrations of rail activity, which adds to the pollution burden that local residents breathe, and that states must clean up. For example, California is home to some of the most polluted air basins in the country. Two of California's airsheds—the South Coast Air Basin and the San Joaquin Valley Air Pollution Control District—suffer from some of the highest levels of ozone and PM_{2.5} levels in the country. About 12 percent of statewide NO_x emissions and 8 percent of statewide PM_{2.5} emissions originate from locomotives, making the need to regulate rail pollution undeniable. Locomotive pollution is expected to make up about 14 percent of California's NO_x inventory and 16 percent of the state's PM_{2.5} inventory in 2030. This is a staggering proportion of California's total pollution. California has a federal obligation to show how it will attain the NAAQS, and this is nearly impossible without addressing the pollution from locomotives. [EPA-HQ-OAR-2022-0985-1608-A3, p. 14]

Pollution reductions will not happen without state action. Even with the EPA's adoption of Tier 4 standards 15 years ago, Class I railroads remain notoriously truant. In California today, Tier 4 locomotives make up less than 5% of all Class I locomotives. Meanwhile, more than 75% of Class I switcher locomotives remain at Tier 0. There is no justification for this truancy, and in the meantime, people are suffering from higher rates of cancer, asthma, cardiopulmonary illness, and premature death associated with increased pollution from locomotives. [EPA-HQ-OAR-2022-0985-1608-A3, p. 14]

Finally, states and local governments also have obligations under federal and state civil rights laws to address rail operations. Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, or national origin by any program or activity that received federal financial assistance.⁴³ Federal regulations implementing Title VI developed by both the U.S. Environmental Protection Agency and the Department of Transportation require agencies to take affirmative actions to remove or overcome the effects of discrimination. In many places, people of color are disproportionately exposed to rail emissions. For example, a 2014 study found significant disparities in diesel exposure by race and income for communities living near major existing railyards in California and further concluded that existing and proposed railyards would disproportionately harm the health of low-income communities of color. Moreover, children are more sensitive to cancer-causing toxins, such as diesel PM, and are more likely to experience an asthma-related ER visit if they live closer to a major railyard. State and local

governments maintain authority—and indeed have obligations—to protect frontline communities that have historically borne the brunt of air pollution caused by industrial activities like railyards and ensure that low-income, communities of color, immigrant communities, and other protected classes are no longer subject to high levels of air pollution from locomotives. [EPA-HQ-OAR-2022-0985-1608-A3, pp. 16 - 17]

43 See also California Government Code Section 11135 (stating that “[n]o person in the State of California shall, on the basis of [a protected category], be unlawfully denied full and equal access to the benefits of, or be unlawfully subjected to discrimination under, any program or activity that is conducted, operated, or administered by the state or by any state agency, is funded directly by the state, or receives any financial assistance from the state.” Implementing regulations further specify that agencies are prohibited from “utiliz[ing] criteria or methods of administration that . . . have the purpose or effect of defeating or substantially impairing the accomplishment of the objectives of the recipient’s program with respect to a person of a particular ethnic group identification, religion, age, sex, color, or with a physical or mental disability.”)

V. EPA should adopt a Tier 5 zero-emission locomotive standard by the end of 2023.

Finally, our organizations ask EPA to take the following actions to clean up locomotive and railyard pollution. The following asks are outlined in detail in MFN’s Letter Regarding Proposed Locomotive Action at the United States Environmental Protection Agency, dated March 14, 2023 ⁶⁰:

1. Adopt a rulemaking before the end of 2023 to address the public health, dirty air, and climate crises exacerbated by locomotive pollution.
2. Include in the rulemaking a Tier 5 zero-emission locomotive standard for all new freight locomotives that requires 100 percent of all new switchers be zero-emission by 2025, and 100 percent of all new line-hauls be zero-emission by 2030.⁶¹
3. Set significantly more stringent emission standards for all remanufactured locomotives and locomotive engines, so that 100 percent of all remanufactured switchers at least meet the Tier 4 standard by 2025, and 100 percent of all line-haul locomotives at least meet the Tier 4 standard by 2027.
4. Require all locomotives and engines used in locomotives that are in operation within the United States to meet a Tier 5 zero-emission standard by 2045. EPA must work in partnership with states to require the scrapping of all non-Tier 5 engines.
5. Use the authority in section 108(f)(1)(C) of the Clean Air Act to identify strategies to clean up the toxic hot spots associated with rail and railyard activities to “protect the health of sensitive or susceptible individuals or groups.”
6. Work with our organizations to create a strategy to eliminate pollution burdens from concentrated railyard operations that pose significant health and safety risks, including but not limited to pollution and impacts from the operation of locomotive maintenance facilities, locomotive parking/idling, and supporting warehouses, which are often located in environmental justice communities. [EPA-HQ-OAR-2022-0985-1608-A3, pp. 23 - 24]

⁶⁰ Moving Forward Network, Letter Regarding Proposed Locomotive Action at the United States Environmental Protection Agency, (March 15, 2022),

[https://www.movingforwardnetwork.com/wpcontent/uploads/2023/04/MFN-Zero-Emission-
Locomotive-Letter-March-14-2023.pdf](https://www.movingforwardnetwork.com/wpcontent/uploads/2023/04/MFN-Zero-Emission-Locomotive-Letter-March-14-2023.pdf).

61 See, e.g., Jill W. Moraski, Natalie D. Popovich & Amol A. Phadke, Leveraging rail-based mobile energy storage to increase grid reliability in the face of climate uncertainty (May 16, 2023), <https://www.nature.com/articles/s41560-023-01276-x>.

VI. Conclusion

Our members have been forced to live in a system that does not serve—and in fact, opposes—their basic needs of health and safety. Environmental justice communities continue to bear the public health and environmental consequences of the global freight system. For decades, the rail industry has poisoned families, workers, and communities with a barrage of pollution from outdated locomotives. We support EPA in taking this critical action to clarify that states and local authorities are not preempted from adopting life-saving emission control measures for non-new locomotives. States and local governments have the duty to meet the federal air quality standards and to reduce pollution for their communities. [EPA-HQ-OAR-2022-0985-1608-A3, p. 24]

At the same time, EPA has the duty and the responsibility to further reduce emissions from the railroad industry. We urge EPA to take affirmative actions to reduce locomotive pollution by adopting a Tier 5 zero-emission locomotive standard by the end of 2023, requiring all locomotives and engines used in locomotives to meet a Tier 5 zero-emission locomotive standard by 2045, and working with our organizations to create a strategy to eliminate pollution burdens from concentrated railyard operations that pose significant health and safety risks. [EPA-HQ-OAR-2022-0985-1608-A3, p. 24]

14. Locomotives and Rail

Moving Forward Network is submitting detailed written comments on the EPA's inclusion of the rail and locomotive section in this rule-making. Below, we note some key points regarding our support for EPA's proposed revisions, and we urge EPA to take additional action to develop new life-saving, zero-emission regulations to address this major source of deadly pollution. [EPA-HQ-OAR-2022-0985-1608-A1, p. 123]

Many communities across the country live near rail yards and freight railroads, where some of the dirtiest switcher and line-haul locomotives operate, and they are belching dirty diesel particulate matter every single day, sometimes just feet from homes, schools, and workplaces. This has very negative and dramatic health consequences as well as air quality consequences. Switchers and line haul locomotives spew diesel particulate matter and other pollutants throughout communities where people live, work, learn, and play. This is unjust and unacceptable, especially when we have zero-emission technology to address these issues today. [EPA-HQ-OAR-2022-0985-1608-A1, p. 123]

The rail industry remains one of the most significant sources of this environmental injustice for many communities, and the cumulative impacts of this industry are clear. Communities experience bright lights, noise, vibrations that feel like earthquakes, idling which can prevent emergency vehicles from getting people to lifesaving medical care, and disproportionate exposure to pollution that causes adverse health outcomes such as asthma, cardiovascular disease, and dangerous diesel-related illnesses, which are also contributing to a shorter lifespan in our communities. Communities have the right to breathe clean air, and states and

local governments must act to protect communities from this pollution. We also remain steadfast that EPA not only has authority but has the responsibility to regulate the rail and locomotive industry, which has been allowed to pollute our communities for far too long. This proposed action is only the beginning, and EPA must focus its efforts on taking strong action to address the cumulative impacts caused by locomotives and rail yards, including by developing a Tier 5 zero-emission locomotive standard. [EPA-HQ-OAR-2022-0985-1608-A1, p. 124]

Organization: National Association of Clean Air Agencies (NACAA)

In addition, if it has not already, EPA should expeditiously begin work on new Tier V locomotive standards that reflect the significant diesel emission technology improvements that have been introduced since the agency finalized the existing Tier IV standards in 2008, as well as the improvements in and opportunities to deploy zero-emission locomotives. In doing so, EPA should look for opportunities to aggressively accelerate the infrastructure for such newer, cleaner locomotives into the nationwide fleet. [EPA-HQ-OAR-2022-0985-1499-A1, pp. 10-11]

Organization: State of California et al. (1)

As EPA acknowledges, diesel-powered locomotives emit multiple harmful pollutants including particulate matter (“PM”) and nitrogen oxides (“NOx”).⁸ The pollutants emitted by locomotives have disproportionate impacts on disadvantaged communities due to their proximity to rail operations. [EPA-HQ-OAR-2022-0985-1526-A1, p. 2]

Despite the serious effects of locomotive air pollution, locomotive owners and operators continue to operate fleets composed primarily of older locomotives subject to EPA’s more lenient Tier 0, 1, and 2 emissions standards, or that remain unclassified.⁹ As of 2020, only 7 percent of the Class I line haul fleet was subject to EPA’s most stringent Tier 4 emission standards, which have been in place since 2008 and are applicable to locomotives manufactured since 2015.¹⁰ It is significant that such a minor percentage of the Class I fleet is subject to the Tier 4 standards. Under the Tier 4 standards, NOx emissions are limited to 1.3 grams per brake horsepower-hour (g/bhp-hr) and PM emissions are limited to 0.03 g/bhp-hr.¹¹ By contrast, under the Tier 2 standards, NOx is limited to 5.5 and PM is limited to 0.10, and under the Tier 1 standards, NOx is limited to 7.4 and PM is limited to 0.22.¹² EPA’s data shows that 47% of the in-service fleet in the United States is subject to Tier 1 or earlier, less stringent standards.¹³ Therefore, nearly half of the in-service fleet is permitted to emit NOx at a level almost six times higher and PM at a level over seven times higher than standards now applicable to new locomotives allow. The profile of the Class I switching fleet is even worse, comprising approximately 97 percent Tier 0 or unclassified locomotives.¹⁴ [EPA-HQ-OAR-2022-0985-1526-A1, pp. 2-3]

⁸ NPRM, at 26,047-48; see also 17 Cal. Code Regs. § 93000; CARB, “Overview Diesel Exhaust & Health” (CARB Overview Diesel Exhaust), available at: <https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health>.

⁹ For purposes of this comment, we do not differentiate between pre-2008 and post-2008 (represented by a ‘+’) standards.

¹⁰ Eastern Research Group, Inc., 2020 National Emissions Inventory Locomotive Methodology Prepared for U.S. Environmental Protection Agency (May 19, 2022), p. 4, available at: https://gaftp.epa.gov/air/nei/2020/doc/supporting_data/nonpoint/Rail/2020_NEI_Rail_062722.pdf

(hereinafter NEI Methodology); 40 C.F.R. § 1033.101. Railroads are classified as I, II, or III based on operating revenue. NPRM at 26,093 fn. 1017.

11 40 C.F.R. § 1033.101 (Table 1).

12 Id.

13 NEI Methodology, p. 4.

14 Id., p. 10.

There are greater risks to public health and welfare if the States cannot effectively regulate non-new locomotives to address this serious air pollution. Reducing locomotive emissions can play an important role in protecting public health and in our States attaining and/or maintaining National Ambient Air Quality Standards (“NAAQS”). Therefore, our States urge EPA to finalize and adopt the Proposed Revisions to better align EPA’s Locomotive Preemption Regulation with the statutory text of the CAA, thereby removing a potential obstacle to the States exercising their congressionally preserved authority to regulate emissions from non-new locomotives and locomotive engines. [EPA-HQ-OAR-2022-0985-1526-A1, p. 3]

I. Factual Background

A. Diesel Locomotives Emit Toxic Air Pollutants that Endanger Public Health and Welfare

Diesel-powered locomotives emit a complex mixture of air pollutants, including diesel particulate matter (“DPM”) and NO_x, which can lead to the formation of ozone and the secondary formation of PM including PM_{2.5}.¹⁵ DPM is typically composed of carbon particles (“soot,” also called black carbon) and numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene.¹⁶ The DPM present in diesel exhaust consists mostly of fine particles (less than 2.5 μm), of which a significant fraction is ultrafine particles (less than 0.1 μm).¹⁷ These particles have a large surface area that makes them an excellent medium for absorbing organics, and their small size makes them highly respirable. Many of the organic compounds present in the gases and on the particles, such as polycyclic organic matter, are individually known to have mutagenic and carcinogenic properties.¹⁸ [EPA-HQ-OAR-2022-0985-1526-A1, pp. 3-4]

15 17 Cal. Code Regs. § 93000; CARB Overview Diesel Exhaust; see also NPRM, at 26,047-48.

16 CARB Overview Diesel Exhaust.

17 Id.

18 NPRM at 26,048.

As of 2018, mobile sources were the largest contributor to national average cancer and noncancer risk from directly emitted pollutants. They are also significant contributors to precursor emissions which react to form air toxics, including 26 percent of primary anthropogenic emissions of formaldehyde, which is the largest contributor to cancer risk, and 60 percent of ambient concentrations of benzene.¹⁹ [EPA-HQ-OAR-2022-0985-1526-A1, p. 4]

There is a causal relationship between exposure to PM_{2.5} and premature mortality and cardiovascular effects, and a likely causal relationship with respiratory effects, nervous system effects, and cancer.²⁰ There is also evidence suggestive of a causal relationship with reproductive

and developmental effects and metabolic effects, and short-term exposure and nervous system effects.²¹ [EPA-HQ-OAR-2022-0985-1526-A1, p. 4]

Exposure to ambient ozone levels can lead to respiratory effects, including lung function decrements, pulmonary inflammation, exacerbation of asthma and new onset asthma, respiratory-related hospital admissions, metabolic effects, central nervous system effects, and mortality.²² Ground level ozone also causes damage to terrestrial and aquatic ecosystems.²³

Evidence also indicates exposure to NO_x leads to asthma exacerbation, cardiovascular effects, diabetes, cancer, and mortality.²⁴ [EPA-HQ-OAR-2022-0985-1526-A1, p. 4]

Federal, state, and international agencies have determined that exposure to diesel exhaust is likely to be carcinogenic to humans by inhalation from environmental exposures.²⁵ Several studies report increased lung cancer risk associated with occupational exposure to diesel exhaust from older engines.²⁶ California classifies diesel engine emissions as a Toxic Air Contaminant that has no threshold exposure level below which no significant adverse health effects are anticipated from exposure to the identified substance.²⁷ [EPA-HQ-OAR-2022-0985-1526-A1, p. 4]

19 Id.

20 Id. at 26,049.

21 Id.

22 Id. at 26,051.

23 “Emission Standards for Locomotives and Locomotive Engines,” 63 Fed. Reg. 18,978, 18,978 (April 16, 1998).

24 NPRM at 26,052.

25 Id. at 26,053.

26 Id. at 26,054.

27 CARB, “Identified Toxic Air Contaminants,” <https://ww2.arb.ca.gov/resources/documents/carb-identified-toxic-air-contaminants>.

B. Diesel Locomotive Emissions Disproportionately Impact Environmental Justice Communities²⁸

Emissions of harmful air pollutants from diesel locomotives disproportionately impact residents of communities that suffer environmental injustices, adding to the significant negative health conditions those communities already bear. Rail lines are fixed-in-place and, thus, locomotive emissions impact communities located along those rail lines. The most significantly impacted communities are those located near railyards and related infrastructure like seaports and intermodal facilities. Railyards—consisting of multiple tracks used for storing, sorting, loading, and transferring locomotive freight—not only attract significant amounts of rail traffic but also related industrial infrastructure drawing large numbers of heavy duty trucks. In addition, such intermodal rail facilities employ significant number of diesel-fueled engines to power cranes and other yard equipment. Further, locomotive engines emit pollution at these facilities by idling for long periods at railyards and deploying older, lower-tier engines with less-stringent emission controls for switch operations to transport rail cars in-yard.²⁹ While locomotives operate

across the country, their harmful impacts are most concentrated in the areas surrounding railyards where many locomotives—and other transportation-related machinery—simultaneously operate. [EPA-HQ-OAR-2022-0985-1526-A1, p. 5]

Residents living near railyards and rail infrastructure are disproportionately lower-income communities and communities of color. These communities unfairly bear the brunt of harmful rail-related emissions, while also experiencing other cumulative industrial pollution burdens. Further, railyards are often sited near sensitive receptors, such as schools, hospitals, elder care facilities, and residential neighborhoods.³⁰ In California, nearly 70 percent of large-scale Class I railyards are located in underserved communities categorized as “disadvantaged” under California law.³¹ Smaller Class III, Military, and Industrial railyards are similarly sited, with over 55 percent located in underserved, disadvantaged communities.³² [EPA-HQ-OAR-2022-0985-1526-A1, pp. 5-6]

28 Environmental justice is defined by EPA as the “fair treatment and meaningful involvement of all people regardless of race, color, national origin or income with respect to development, implementation, and enforcement of environmental laws, regulations and policies.” EPA, EPA-300-B-1-6004, EJ 2020 Action Agenda: The U.S. EPA’s Environmental Justice Strategic Plan For 2016-2020, p. 1 (Oct. 2016). For the purpose of this comment, the term “environmental justice community” refers to a community of color or community experiencing high rates of poverty that due to past and or current unfair and inequitable treatment is overburdened by environmental pollution, and the accompanying harms and risks from exposure to that pollution, because of past or current unfair treatment.

29 See NEI Methodology; see also CARB Initial Statement of Reasons (CARB ISOR) for Proposed In-Use Locomotive Regulations, p. 59 (Sept. 20, 2022), available at: <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/locomotive22/isor.pdf>.

30 CARB ISOR, Appendix H, p. 6, available at: <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/locomotive22/apph.pdf>.

31 CARB ISOR, p. 33. “Disadvantaged” communities are defined in California as communities suffering from pollution burdens and vulnerability factors in the top 25th percentile, such as exposure to PM2.5, high ozone, drinking water contaminants, traffic impacts, high diesel particulate matter (DPM), groundwater threats, poverty, asthma, and cardiovascular disease. See California Senate Bill No. 535, California Global Warming Solutions Act of 2006: Greenhouse Gas Reduction Fund (approved Sept. 30, 2012), available at: https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201120120SB535; California Office of Environmental Health Hazard Assessment, “SB 535 Disadvantaged Communities,” <https://oehha.ca.gov/calenviroscreen/sb535>.

32 CARB ISOR, p. 33

Of the 18 largest railyards in California, all but one is located in a census tract that suffers from pollution burdens greater than the state average.³³ In fact, amongst the census tracts in which these facilities are located, the average cumulative pollution burden exceeds that of 90 percent of the rest of California communities.³⁴ In part due to locomotive emissions—in addition to the cumulative burdens from other industrial sources—these census tracts also suffer from levels of DPM greater than 80 percent of California’s communities.³⁵ That pollution causes similarly disproportionate health impacts, including rates of asthma higher than 70 percent of the rest of California.³⁶ [EPA-HQ-OAR-2022-0985-1526-A1, p. 6]

33 Data from CalEnviroScreen 4.0, California Office of Environmental Health Hazard Assessment, <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40>. Metrics for pollution burden, diesel particulate matter exposure, asthma rates, and poverty are the census tract’s percentile ranking as compared to all census tracts in California, demonstrating that these census tracts are among those with the greatest

pollution exposure, detrimental health impacts, and lowest incomes statewide. The raw data for these percentile rankings are available on the CalEnviroScreen 4.0 website.

34 Id.

35 Id.

36 Id.

Reflecting historical redlining,³⁷ the communities that disproportionately suffer health impacts from locomotive and other transportation-related emissions are overwhelmingly comprised of residents with lower-incomes and people of color. In California, Hispanic/Latino communities overall experience pollution exposures from rail activity over 30 percent higher than average.³⁸ A prior study found that 17 of the 18 biggest railyards in California had a statistically higher percentage of non-White residents within areas at risk of cancer than the remainder of the county in which they are located.³⁹ [EPA-HQ-OAR-2022-0985-1526-A1, pp. 6-7]

37 Beginning in the 1930s, federal housing policy directed investment away from “risky” communities of color. In California, several residential communities in or adjacent to major railyards and related infrastructure were coded red, signifying the least desirable areas where investment was to be avoided. See Robert K. Nelson, LaDale Winling, Richard Marciano, Nathan Connolly, et al., “Mapping Inequality,” American Panorama, ed., see Commerce, CA: <https://dsl.richmond.edu/panorama/redlining/#loc=12/34.037/-118.156&city=los-angeles-ca>, Stockton, CA: <https://dsl.richmond.edu/panorama/redlining/#loc=14/37.941/-121.281&city=stockton-ca>,

West Oakland, CA: <https://dsl.richmond.edu/panorama/redlining/#loc=13/37.796/-122.287&city=oakland-ca>.

38 Hricko et al., Global Trade, Local Impacts: Lessons from California on Health Impacts and Environmental Justice Concerns for Residents Living near Freight Rail Yards. *International Journal of Environmental Research and Public Health*, 11(2), pp. 1914-1941, (February 10, 2014).

39 Id., p. 1924. From 2005 to 2008, CARB published a Health Risk Assessment (HRA) for each of the 18 major rail yards in California, using guidance from the California Office of Health Hazard Evaluation and Assessment (OEHHA). These HRAs analyzed diesel particulate emissions from locomotives, cranes and yard equipment within the railyard boundaries, as well as onsite and offsite emissions from heavy duty diesel-powered trucks that take containers to and from the rail yards. See CARB, “Railyard Health Risk Assessments and Mitigation Measures,” <https://ww2.arb.ca.gov/resources/documents/railyard-health-risk-assessments-and-mitigation-measures>.

The California Air Resources Board (“CARB”) has previously identified four California railyards as having a particularly high health risk from cancer related to diesel emissions, all of which are located in communities that are disproportionately populated by non-White residents experiencing higher rates of poverty than average. The BNSF San Bernardino railyard—which is adjacent to residences and within a mile of 41 sensitive receptors—including seven health care facilities, 15 schools, and 19 childcare centers—is located in a census tract populated by 94 percent people of color that experiences poverty rates higher than 97 percent of the State.⁴⁰ Union Pacific’s Intermodal Container Transfer Facility (ICTF) in Wilmington, CA—less than 500 feet from a middle school and residences—is sited in and around multiple census tracts whose populations are approximately 90 percent non-White and experience poverty rates greater than 65 percent of the State.⁴¹ And in the Los Angeles community of Commerce—where four railyards are clustered resulting in a DPM burden in the 96th percentile—the facilities surround census tracts consisting of 98% people of color that experience poverty rates higher than 70 of California residents.⁴² [EPA-HQ-OAR-2022-0985-1526-A1, p. 7]

40 CalEnviroScreen 4.0, Census Tract 6071004900.

41 Id., Census Tracts 6037980014, 6037980002, 6037572301, 6037572600, and 6037543306.

42 Id., Census Tracts 6037532400, 6037532302, 6037532303, and 6037532304.

In New York, environmental justice communities are disproportionately impacted by locomotive pollution given their shared proximity to major cities throughout the state. Freight rail service intersects the state, including across a majority of its 62 counties and cities.⁴³ Along New York's 3,279 miles of freight railroad, Buffalo, Syracuse, Albany, Binghamton, and the New York City metro area (NYCMA) are all home to major facilities.⁴⁴ These cities are also home to large communities of color and low-income families.⁴⁵ Such communities in each city experience elevated risks of cancer and respiratory hazards, as well as PM2.5 levels above the annual average.⁴⁶ Emergency department visits and hospitalizations tied to asthma are also consistently estimated at elevated rates in counties where these railyards operate.⁴⁷ [EPA-HQ-OAR-2022-0985-1526-A1, pp. 7-8]

43 See New York State Department of Transportation (NYSDOT), "Railroads in New York - 2023," <https://www.dot.ny.gov/divisions/operating/opdm/passenger-rail/railroadsmap>.

44 See U.S. Department of Transportation, "New York Transportation by the Numbers," p. 1, January 2020, https://www.bts.gov/sites/bts.dot.gov/files/states2020/New_York.pdf.

45 See New York State Department of Environmental Conservation (NYSDEC), "Potential Environmental Justice Areas" (PEJAs), <https://gis.ny.gov/gisdata/inventories/details.cfm?DSID=1273>.

46 See id.; EPA, EJScreen, accessed via: <https://ejscreen.epa.gov/mapper/>. In Buffalo, for example, an area adjacent to the Black Rock railyard (Census Block 15000US360290071014) is 93 percent non-white, 54 percent below poverty level, and at 80th percentile for PM2.5, 83rd percentile on the air toxics respiratory hazard index, 96th percentile for ozone, and 98th percentile for diesel particulate matter.

47 See New York State Department of Health (NYSDOH), "Asthma ED Visits and Hospitalizations," https://apps.health.ny.gov/statistics/environmental/public_health_tracking/tracker/index.html#/asthmaCounty.

The asthma rate for low-income individuals across New York City is well above the national average.⁴⁸ In collaboration with EPA, New York City Economic Development Corporation and New York City Department of Small Business Services undertook two locomotive repowering projects between 2011 and 2018 to combat the disproportionate quantity of air pollution faced by environmental justice communities in the NYCMA in part due to their proximity to freight and commuter rail yards operated by CSX Transportation (CSXT) and New York & Atlantic Railway (NY&A).⁴⁹ The rail companies estimated that repowering would reduce annual NOx emissions from these locomotives by between 33 and 99 percent and PM2.5 by between 81 and 99 percent⁵⁰—exemplifying the potential that emission reduction projects have to benefit environmental justice communities. [EPA-HQ-OAR-2022-0985-1526-A1, p. 8]

48 See NYSDOH, Asthma Dashboard - State Level, "Current asthma prevalence among adults, 2020," https://webbi1.health.ny.gov/SASStoredProcess/guest?_program=/EBI/PHIG/apps/asthma_dashboard/ad_dashboard&p=tbl&ind_id=ad28. The asthma rate for individuals in New York City earning less than \$25,000 annually is between 13.6 and 14 percent, while the U.S. rate is 9.2 percent and the U.S. rate for earning less than \$25,000 annually is between 11.2 and 13.8 percent.

49 See EPA, "New York City Locomotive Repowers: Collaborative Efforts to Improve Air Quality," <https://www.epa.gov/ports-initiative/new-york-city-locomotive-repowers-collaborative-efforts-improve-air-quality>.

50 Id.

Pennsylvania also has a significant number of railyards in urban areas, many of which are adjacent to or surrounded by environmental justice communities. More populous areas with elevated levels of ozone and PM concentrations, such as the Pittsburgh area (Beaver, Allegheny, Westmoreland, Washington Counties), have significant rail operations and emissions. [EPA-HQ-OAR-2022-0985-1526-A1, p. 8]

Accordingly, reducing emissions from locomotives is a critical step towards dismantling historical patterns of environmental injustice burdening communities near railyards and related industrial infrastructure. [EPA-HQ-OAR-2022-0985-1526-A1, p. 8]

C. Reducing Diesel Locomotive Emissions Is Important For our States To Attain and Maintain Federal Air Quality Standards

The CAA requires EPA to set, and regularly review and revise, federal health-based ambient air quality standards for “criteria pollutants,” including PM_{2.5}, NO_x, and ground-level ozone.⁵¹ Depending on whether the air quality in an area meets the NAAQS for a particular pollutant, EPA designates the area as being in “attainment” or “nonattainment.” EPA further classifies areas that are in nonattainment according to the severity of their air pollution problem, and areas with more severe pollution levels are generally given more time to meet the standard while being subject to more stringent control requirements. [EPA-HQ-OAR-2022-0985-1526-A1, pp. 8-9]

51 42 U.S.C. §§ 7408-7409.

As of May 31, 2021, California had nineteen 8-hour ozone nonattainment areas and the only three extreme nonattainment areas in the nation: South Coast Air Basin, San Joaquin Valley, and Coachella Valley.⁵² South Coast Air Basin and San Joaquin Valley Air Basin also fail to meet ambient air quality standards for PM_{2.5}.⁵³ The South Coast Air Basin has the highest ozone levels in the nation.⁵⁴ For the South Coast Air Basin to meet the federal ozone standards, overall NO_x emissions need to be reduced to 60 tons per day in 2037, an approximately 80 percent reduction from 2018 levels.⁵⁵ NO_x emission reductions are also key to reducing PM_{2.5} pollution, as NO_x contributes to the formation of secondary PM_{2.5}.⁵⁶ Reducing locomotive emissions will be an important element in attaining the NAAQS ozone and/or PM standards.⁵⁷ EPA has recognized that emissions from locomotives generate significant emissions of PM_{2.5} and NO_x that contribute to nonattainment of the NAAQS for PM_{2.5} and ozone.⁵⁸ [EPA-HQ-OAR-2022-0985-1526-A1, p. 9]

52 CARB, 2016 State Strategy for the State Implementation Plan for Federal Ozone and PM_{2.5} Standards (March 7, 2017), available at: <https://ww2.arb.ca.gov/resources/documents/2016-state-strategy-state-implementation-plan-federal-ozone-and-pm25-standards>.

53 EPA, “Status of California Designated Areas,” https://www3.epa.gov/airquality/urbanair/sipstatus/reports/ca_areabypoll.html (hereinafter Status of CA Designated Areas).

54 Ibid.

55 South Coast Air Quality Management District, 2022 Clean Air Management Plan, Chapter 5, p. 5-17, available at: <http://www.aqmd.gov/docs/default-source/clean-air-plans/air-quality-management-plans/2022-air-quality-management-plan/08-ch5.pdf?sfvrsn=8#:~:text=%E2%80%A2Without%20additional%20control%20measures%2C%20the%20South%20Coast%20Air,is%2071%20percent%20lower%20than%20the%202037%20baseline>.

56 EPA, “Ground-level Ozone Basics,” <https://www.epa.gov/ground-level-ozone-pollution/ground-level-ozone-basics>; EPA, Evaluating the Contribution of PM_{2.5} Precursor Gases and Re-entrained Road Emissions to Mobile Source PM_{2.5} Particulate Matter Emissions, p. 22, available at: <https://www3.epa.gov/ttnchie1/conference/ei13/mobile/hodan.pdf>. See also CARB, Staff Report Proposed SIP Revision for the 15 µg/m³ Annual PM_{2.5} Standard for the San Joaquin Valley, p. 1 (August 13, 2021), available at: <https://ww2.arb.ca.gov/sites/default/files/2021-08/SJV%2015%20ug%20SIP%20Revision%20Staff%20Report%20FINAL.pdf>.

57 See, e.g., CARB, 2022 State Strategy for the State Implementation Plan, p. 6 (September 22, 2022), available at:

https://ww2.arb.ca.gov/sites/default/files/2022-08/2022_State_SIP_Strategy.pdf (hereinafter 2022 State SIP Strategy).

58 “Control of Emissions of Air Pollution from Locomotive Engines and Marine Compression-Ignition Engines Less Than 30 Liters per Cylinder; Republication,” 73 Fed. Reg. 37,096, 37,099 (June 30, 2008) (hereinafter 2008 Locomotives Rule).

Further, as demonstrated by the location of disadvantaged communities within NAAQS nonattainment areas, reducing locomotive emissions is critical to solving the pollution problem that plagues these communities. In California, more than half of the population (21 million out of nearly 40 million) live in areas that exceed the most stringent 70 ppb ozone standard.⁵⁹ A disproportionate number of California’s population also live in areas designated extreme nonattainment.⁶⁰ These Californians often live in low-income and disadvantaged communities that experience greater exposure to diesel exhaust and other toxic air pollutants compared to surrounding areas. [EPA-HQ-OAR-2022-0985-1526-A1, pp. 9-10]

59 Status of CA Designated Areas; U.S. Census Bureau, Population Division, Annual Estimates of the Resident Population for Counties in California: April 1, 2020 to July 1, 2022 (CO-EST2022-POP-06) (March 2023), available at: <https://www2.census.gov/programs-surveys/popest/tables/2020-2022/counties/totals/co-est2022-pop-06.xlsx>.

60 Id.

The New York Metropolitan area ozone nonattainment area (which also includes parts of New Jersey and Connecticut) failed to reach attainment by the deadline for serious nonattainment of the 2008 ozone NAAQS and, in 2022, was re-classified to severe nonattainment status for that NAAQS.⁶¹ As such, more than 60 percent of the state population (over 12 million out of about 20 million)—including several environmental justice communities—live in areas exceeding ozone standards.⁶² [EPA-HQ-OAR-2022-0985-1526-A1, p. 10]

61 See “Determinations of Attainment by the Attainment Date, Extensions of the Attainment Date, and Reclassification of Areas Classified as Serious for the 2008 Ozone National Ambient Air Quality Standards,” 87 Fed. Reg. 60,926 (Oct. 7, 2022).

62 See U.S. Census Bureau, “QuickFacts New York; United States,” Population, April 1, 2020, available at: <https://www.census.gov/quickfacts>. This estimate was calculated by adding the populations for all nine counties (Bronx, Kings, Nassau, New York, Queens, Richmond, Rockland, Suffolk, and Westchester) classified as in nonattainment.

Prior to EPA’s last revision of its locomotive regulations, a study commissioned by New York State Energy Research and Development Authority (NYSERDA) determined that off-road diesel emissions significantly impact ambient air quality across New York and contribute to nonattainment in New York City.⁶³ [EPA-HQ-OAR-2022-0985-1526-A1, p. 10]

63 See Southern Research Institute, NYSERDA Clean Diesel Technology: Non-Road Field Demonstration Program, Development of the 2002 Locomotive Survey for New York State, p. 1-1 (February 9, 2007), available at: <https://www.nyserdera.ny.gov/-/media/Project/Nyserda/Files/Publications/Research/Environmental/locomotive-survey-clean-diesel-technology.pdf> (hereinafter NYSERDA Report).

D. Railroads Continue to Operate Old, Highly Polluting Locomotives

Class I railroads operate the majority of locomotives in our States and are responsible for the majority of locomotive emissions. The two Class I railroads operating in California—Union Pacific (UP) and BNSF Railway (BNSF)—operate approximately 12,000 freight interstate line haul locomotives annually within the State, representing about 85 percent of the statewide locomotive activity and emissions.⁶⁴ UP and BNSF also operate switcher locomotives, or those traveling around rail yards, representing about five percent of the statewide locomotive activity and emissions.⁶⁵ A much smaller number of Class II and III railroads, industrial operators, and passenger railroads also operate in the State.⁶⁶ By 2030, locomotive emissions are projected to contribute 14 percent of the California’s PM_{2.5} freight emissions and 16 percent of the State’s NO_x freight emissions.⁶⁷ [EPA-HQ-OAR-2022-0985-1526-A1, p. 10]

64 CARB ISOR, Appendix G, p. 14, available at: <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2022/locomotive22/appg.pdf>.

65 Id.

66 Id., pp. 24, 28, 32.

67 2022 State SIP Strategy, p. 110.

Four Class I railroads operate within New York: CSX Transportation (CSX), Canadian National Railway (CN), Canadian Pacific Railway (CP), and Norfolk Southern Railway (NS).⁶⁸ Up to 35 additional regional or shortline roads operate, along with 10 tourist railroads, and five commuter/intercity railroads, some of which also receive freight vehicles.⁶⁹ New York & Atlantic Railway (NYA), for example, which has a fleet of 14 locomotives, operates freight trains on the lines owned by the Long Island Rail Road (LIRR), the busiest passenger system in the United States.⁷⁰ The most recent comprehensive survey of locomotives conducted by NYSERDA indicated that at least 245 Class I, II, and III locomotives were in operation in 2002, as well as 160 commuter locomotives and 32 switchers.⁷¹ According to the most recent EPA National Emissions Inventory data, in New York locomotives contributed 17.3 percent of statewide freight emissions of NO_x and 15.3 percent of PM_{2.5}.⁷² [EPA-HQ-OAR-2022-0985-1526-A1, p. 11]

68 See NYSDOT, Freight Rail Service in New York State, <https://www.dot.ny.gov/divisions/operating/opdm/passenger-rail/freight-rail-service-in-new-york-state>.

69 Id.

70 See Anacostia, New York & Atlantic Railway, p. 1 (Jan. 2023), available at: <https://www.anacostia.com/wp-content/uploads/2023/01/NYA-Profile23.pdf>.

71 See NYSERDA Report, pp. 2-24 through 2-27.

72 EPA, 2020 National Emissions Inventory Data, accessed via: <https://www.epa.gov/air-emissions-inventories/2020-national-emissions-inventory-nei-data> (hereinafter NEI Data). Total freight emissions were calculated by adding emission totals for locomotives, commercial marine vessels, and on-road heavy duty vehicles.

Similarly, in Pennsylvania, locomotive operations contribute a total of 12,182.80 tons per year of NOx and 316.30 tons of PM2.5, amounting to 19.4 percent of total statewide freight emissions of NOx and 17.4 percent of PM2.5 emissions.⁷³ In Oregon, locomotives contribute 13.6 percent of statewide freight emissions of NOx and 11.8 percent of PM2.5.⁷⁴ [EPA-HQ-OAR-2022-0985-1526-A1, p. 11]

73 NEI Data. Total freight emissions were calculated by adding emission totals for locomotives, commercial marine vessels, and on-road heavy duty vehicles.

74 NEI Data. Total freight emissions were calculated by adding emission totals for locomotives, commercial marine vessels, and on-road heavy duty vehicles.

EPA has adopted five emission standards tiers for new locomotives, Tiers 0 through 4, with Tier 0 being the least stringent and Tier 4 being the most stringent.⁷⁵ Per EPA regulations, a locomotive is classified in an emissions Tier based on its original manufacture date.⁷⁶ A locomotive must comply with the emissions Tier applicable to its original manufacture date if it is remanufactured, as defined in EPA's regulations, unless or until it is freshly manufactured, when it would be subject to the more stringent Tier 4 standards.⁷⁷ In spite of the wide commercial availability of cleaner locomotives—which, if put to full use, could cut average emissions by up to 80 percent—EPA's data demonstrates that operators continue to operate locomotives that emit up to nearly 8 times more NOx per gallon of fuel and 20 times more PM than the cleanest levels required by EPA's most stringent Tier 4 emission standards (applicable to locomotives and locomotive engines first put into service in 2015 or later).⁷⁸ [EPA-HQ-OAR-2022-0985-1526-A1, p. 11]

75 40 C.F.R. § 1033.101.

76 *Id.*

77 *Id.*, § 1033.640(d).

78 CARB ISOR, p. 27; NEI Methodology, p. 5, Table 5.

Indeed, NOx emission reductions from locomotives have not kept pace with NOx reductions in other freight transport sectors. For example, in 2008, EPA found that the per horsepower-hour emission levels for locomotive and marine diesel engines remained at much higher levels than emissions from highway and other nonroad diesel engines, which are comparable to the emissions for highway trucks in the early 1990s.⁷⁹ In California, trucks have become much cleaner over the last decade and are moving towards Zero Emissions (“ZE”) technology. NOx emissions from light-duty vehicles, heavy-duty trucks, and off-road equipment in the South Coast Air Basin have declined by 75 percent since 2000, while emissions from locomotives and other federally regulated sources have declined by half that amount over the same period.⁸⁰ Locomotives are quickly becoming one of the top mobile-source polluters in California on a per transport-container basis.⁸¹ Trucks will be the cleaner mode of moving freight in California as of this year, 2023.⁸² [EPA-HQ-OAR-2022-0985-1526-A1, p. 12]

79 2008 Locomotives Rule, at 37,100.

80 CARB, 2020 Mobile Source Strategy, p. 74 (Oct. 28, 2021) available at: https://ww2.arb.ca.gov/sites/default/files/2021-12/2020_Mobile_Source_Strategy.pdf.

81 CARB, Draft Truck vs. Train Emissions Analysis (Sept. 23, 2020),

<https://ww2.arb.ca.gov/resources/fact-sheets/draft-truck-vs-train-emissions-analysis>.

82 Id.

EPA's data shows that in 2020, total nationwide emissions from all locomotives were 461,726 tons of NOx and 11,736.90 tons of PM.⁸³ Locomotives also emitted 36,492,845 tons of carbon dioxide, a primary greenhouse gas contributing to climate change.⁸⁴ Again, this demonstrates that locomotives are becoming an increasingly large proportion of mobile source emissions while other sources' emissions are declining. Further, these figures were likely approximately 15 percent below average due to the effects of the COVID-19 pandemic.⁸⁵ [EPA-HQ-OAR-2022-0985-1526-A1, p. 12]

83 NEI Methodology, p. 17, Table 16.

84 Id.

85 Id.

Organization: Westinghouse Air Brake Technologies Corporation (Wabtec)

I. THE BENEFITS OF RAIL

Rail is the most efficient and sustainable means of moving people and goods over land. Freight railroads, on average, move one ton of freight 500 miles per gallon of fuel. On average, trains also are 3-4 times more fuel-efficient than trucks.² According to EPA data, freight railroads account for 0.5% of total U.S. GHG emissions and just 1.7% of all transportation-related GHG emissions.³ In fact, moving freight by rail instead of trucks lowers GHG emissions on average by 75%. If 50% of truck traffic over 500 miles was moved to rail, GHG emissions would decrease by approximately 60 million tons per year. [EPA-HQ-OAR-2022-0985-1580-A1, p. 2]

2 Association of American Railroads, Freight Railroads & Climate Change: Reducing Emissions, Enhancing Resiliency (Jun. 2023), <https://www.aar.org/wp-content/uploads/2023/06/AAR-Climate-Change-2023-Report.pdf>.

3 U.S. EPA, Inventory of U.S. GHG Emissions and Sinks, 1990-2021, Table 2-13: Transportation-Related GHG Emissions, <https://www.epa.gov/system/files/documents/2023-04/US-GHG-Inventory-2023-Main-Text.pdf>.

Freight rail is safer than on-road transport and protects the nation's infrastructure as well. Freight rail causes 22 times fewer deaths and injuries per year than trucking.⁴ A single freight train can replace several hundred trucks, making our freeways less congested, compounding safety benefits for motorists. And, according to the Texas Transportation Institute, highway congestion wasted \$190 billion in time (8.7 billion hours) and fuel (3.5 billion gallons) in 2019.⁵ Shifting freight from on-road trucks to rail also reduces highway wear and tear and thus alleviates the need to build costly new highways. [EPA-HQ-OAR-2022-0985-1580-A1, p. 2]

4 Bureau of Transportation Statistics, Transportation by Mode, 2020, <https://www.bts.gov/content/transportation-fatalities-mode>.

5 Texas Transportation Institute, 2019 Urban Mobility Report, <https://static.tti.tamu.edu/tti.tamu.edu/documents/umr/archive/mobility-report-2019.pdf>.

As EPA considers various policy alternatives to improve local air quality and control emissions from locomotives, including revising its federal preemption regulations for

locomotives and locomotive engines in the Proposed Rule, it is important to recognize the undeniable environmental and other benefits that rail transportation already provides in the United States. [EPA-HQ-OAR-2022-0985-1580-A1, p. 2]

III. FUTURE LOCOMOTIVE TECHNOLOGY ROAD MAP & CHALLENGES TO COMMERCIAL ADOPTION

Building on its history of technology leadership for the rail and locomotive industry, Wabtec continues to innovate and develop technologies to enable a fully decarbonized rail transportation network. These research, development, and demonstration efforts recognize the different needs and operating environments of railroad operators and the challenges that must be addressed prior to commercial adoption. [EPA-HQ-OAR-2022-0985-1580-A1, p. 6]

A. Future Technology Road Map

Taking into consideration the significant energy demands for moving heavy-haul trains over long distances and the infrastructure needs for supplying energy across the vast rail network, the railroad industry will be difficult to decarbonize. While battery-electric technology is a potential solution to deploy zero-emission locomotive technologies, it is not suitable for every operating environment. Specifically, line-haul operations demand much greater energy density and may be more suitable to alternative, low-emission energy sources like hydrogen. Looking forward, if the hydrogen supply grows to meet demand, Wabtec believes hydrogen eventually will be the next step in rail innovation. Hydrogen in an internal-combustion engine (“ICE”) will likely be the first demonstrable hydrogen rail technology. This application would allow the current installed base powered by diesel-electric ICE to leverage the benefits of hydrogen fuel. [EPA-HQ-OAR-2022-0985-1580-A1, p. 6]

Longer term, new locomotives will be produced using a combination of battery and hydrogen fuel cell technology to provide a path to zero-emission freight movement by rail. However, today’s hydrogen fuel cell power density is not aligned with a locomotive’s power demands. Current fuel cell systems can be procured in units of 75 to 200 Kilowatt (“kW”), whereas a standard line-haul locomotive is powered by 3,300 kW engines. Stringing 15 to 45 fuel cell systems together is unlikely to provide sufficient reliability to a railroad operator. Thus, fuel cell technology must significantly advance and prove to be reliable in rail operations before operators will adopt the technology. [EPA-HQ-OAR-2022-0985-1580-A1, p. 6]

Given the current state of the research, development, and demonstration for hydrogen propulsion technologies – both within the ICE and using battery and fuel cell technologies, Wabtec is unable to predict when such technologies will be ready for commercial adoption. [EPA-HQ-OAR-2022-0985-1580-A1, p. 6]

B. Challenges to Commercial Adoption of Alternative Propulsion Technologies

Despite being at the forefront of innovation for rail and locomotive technologies, Wabtec acknowledges that there are several key challenges that must be addressed to enable commercial adoption of alternative propulsion technologies like battery-electric and hydrogen ICE or fuel cells. [EPA-HQ-OAR-2022-0985-1580-A1, p. 7]

First, the current state of research, development, testing, and readiness for commercial adoption varies by locomotive propulsion technology type. The design, development, and

demonstration of alternative energy propulsion technologies remain in various phases of pilot and test programs. As a disruptive technology, a critical path to commercializing battery-electric locomotives in the rail industry is additional testing and demonstrating this technology in day-to-day operations. A new locomotive technology typically requires up to 30 to 50 locomotive years of operation before it can be considered fully mature and integrated into commercial railroad operations. [EPA-HQ-OAR-2022-0985-1580-A1, p. 7]

Interoperability and infrastructure are additional and significant barriers to adopting new technology. Managing a locomotive fleet with multiple different energy demands (e.g., battery, hydrogen, diesel, electricity, etc.) forces rail operators to invest and maintain different infrastructure for each form of technology. Rail operators also need to ensure each technology stays within reach of the power source. The U.S. rail network moves more than a 6 billion tons of freight a year across nearly 140,000 miles of track between and among 49 states and the District of Columbia. Thus, proximity to rail yards and the associated charging and/or refueling infrastructure required for alternative propulsion technologies may constrain rail operators' ability to power certain locomotives. [EPA-HQ-OAR-2022-0985-1580-A1, p. 7]

There are numerous operational variables that must be addressed to seamlessly integrate new locomotive technologies into railroad fleets. For example, both FLXdrive 2.0 and FLXswitch 2.0 utilize external charging and dynamic braking for battery charging. Wabtec estimates that, for an average 12-hour rail yard shift, the FLXswitch locomotive will need to charge for four hours to complete its shift. Wabtec further envisions, in alignment with customer inputs and other suppliers, FLXdrive 2.0 and FLXswitch 2.0 would be supported by a wayside charging system for stationary charging with DC input utilizing an off-board reverse pantograph. These charging technologies and the associated infrastructure are still being developed to support battery-electric locomotives. Infrastructure for refueling hydrogen fuel cells or trains is even more uncertain when compared to battery charging capabilities. Ensuring safe operations, reducing downtime, and maintaining close proximity to necessary infrastructure, must be achieved to ensure that any alternative propulsion locomotive technology is seamlessly integrated into a railroad's operations. [EPA-HQ-OAR-2022-0985-1580-A1, p. 7]

Alternative propulsion technologies face various supply chain constraints and hurdles as well. To support the eventual adoption of hydrogen technology in the rail industry, hydrogen production and distribution infrastructure projects need to accelerate drastically. Producing clean hydrogen from low-carbon energy is still very costly. But, that will likely change in the coming decades while the rail industry continues to develop and test alternative propulsion locomotives. An International Energy Agency ("IEA") analysis finds that the cost of producing hydrogen from renewable electricity could fall 30% by 2030 as a result of declining costs of renewables and the scaling up of hydrogen production.¹⁵ Developing hydrogen refueling infrastructure to support locomotive operations also needs to significantly accelerate in order for the rail industry to safely adopt hydrogen technologies and harness hydrogen's economic and environmental benefits. Considering these factors, hydrogen locomotive technology cannot be widely adopted across the U.S. within the next 8-10 years without significant investment in research, development, and demonstration activities by the rail industry. Still, Wabtec believes that hydrogen powered locomotives are essential to the long-term rail industry roadmap to decarbonization, especially for line-haul operations. [EPA-HQ-OAR-2022-0985-1580-A1, pp. 7 - 8]

15 International Energy Agency, The Future of Hydrogen (June 2019), <https://www.iea.org/reports/the-future-of-hydrogen>.

Similar constraints exist related to battery-powered locomotives. The U.S. battery and rare earth minerals supply chain primarily depends on China today. The United States has a small role in the global battery supply chain, with only 7% of battery production capacity. Most key minerals for batteries are mined in resource-rich countries such as Australia, Chile, and the Democratic Republic of Congo, and handled by a few major companies. The production speed and industry-wide capacity of battery-electric locomotives will be greatly affected by the supply of critical minerals impacting the broader electric vehicle market. [EPA-HQ-OAR-2022-0985-1580-A1, p. 8]

In addition, battery-electric locomotives will add new demands to the electrical grid due to the power needed and the required duration of charging. Put in perspective, the average Tesla stores about 0.1 MWh of energy. A single FLXdrive locomotive at 8.1 MWh has the equivalent energy storage of 81 Tesla cars. To maximize efficiency and ensure the continuity of freight operations, locomotives will need to pull high levels of power from local electrical grids in relatively short amounts of time. Ensuring the reliability of the power grid has been a topic of critical importance as Wabtec discusses the FLXdrive technology with various policymakers and other stakeholders. Moreover, it is a focus of further evaluation and assessment as Wabtec's customers look to demonstrate battery-electric locomotive technologies in their operating environments. Evaluating larger scale deployment of battery-electric locomotives must be conducted in collaboration with local electric utilities to ensure the compatibility and reliability of their infrastructure with charging for battery-electric locomotives. [EPA-HQ-OAR-2022-0985-1580-A1, p. 8]

Wabtec and the railroad industry are working together to address many of these interrelated challenges. However, it is difficult to predict the time horizon necessary to address these various challenges given the importance of engaging diverse stakeholders, leveraging significant investment for the assets and associated infrastructure, and solving for a dynamic supply chain environment. [EPA-HQ-OAR-2022-0985-1580-A1, p. 8]

V. CALIFORNIA'S IN-USE LOCOMOTIVE REGULATION DEMONSTRATES WHY OEMS MUST OPINE ON EPA'S STATE-LEVEL CONTROL DETERMINATIONS

California's In-Use Locomotive Regulation³⁸ highlights why locomotive and locomotive engine OEMs must be able to offer their expertise and weigh in on EPA state-level control determinations. Wabtec respectfully submits that certain aspects of California's In-Use Regulation would in fact "enforce [a] standard or other requirement relating to the control of emissions" from new locomotives or new engines used in locomotives by imposing new design and manufacture requirements.³⁹ Section 209(e)(1) of the Clean Air Act prohibits such requirements. Additionally, and as discussed further below, other aspects of the In-Use Regulation will actually impede progress in reducing GHG emissions and criteria pollutants. [EPA-HQ-OAR-2022-0985-1580-A1, p. 14]

³⁸ In-Use Locomotive Regulation, Title 13, California Code of Regulations, Chapter 9, Article 8, Sections 2478 through 2478.17 (hereinafter "In-Use Regulation").

³⁹ 42 U.S.C. § 7543(e)(1).

A. In-Use Operational Requirement: 23 Year Life limit & ZE Configuration

California’s In-Use Regulation imposes requirements on locomotives operating in California beginning January 1, 2030, which are ostensibly “In-Use” requirements,⁴⁰ but in practice affect the design and manufacture of “[n]ew locomotives and new engines used in locomotives.”⁴¹ First, Section 2478.5(a) prohibits operating locomotives that are more than 23 years old (based on the engine build date) within California starting January 1, 2030. Railroads seeking to operate in California will therefore be required to retire any non-exempt locomotive with an original engine build date prior to January 1, 2007, as of January 1, 2030. By 2053, all non-exempt locomotives must have a 2030 or later build date to operate in California. [EPA-HQ-OAR-2022-0985-1580-A1, p. 15]

40 In-Use Regulation, § 2478.5. Wabtec does not evaluate the impact of the In-Use Regulation’s Alternative Compliance Plan under Section 2478.7 or the Alternative Fleet Milestone Option under Section 2478.8 for the purposes of this comment. We do acknowledge, however, that specific timing of requirements imposed on locomotive operators may vary from the In-Use requirements of Section 2478.5 under either the Alternative Compliance Plan or the Alternative Fleet Milestone Option.

41 42 U.S.C. § 7543(e)(1)(B).

Second, Section 2478.5(b) requires that all switch, industrial, and passenger locomotives with engine build dates of 2030 or later “[o]perate in a ZE Configuration at all times while in California.” Section 2478.5(c) imposes the same zero-emission configuration requirement on freight line-haul locomotives beginning in 2035. To operate in California, all locomotives and locomotive engines built in 2030 (for switch, industrial, and passenger) or 2035 (for line-haul) or later must be capable of operating in a zero-emission configuration. [EPA-HQ-OAR-2022-0985-1580-A1, p. 15]

Together, subsections (a) through (c) necessarily impose a standard related to the control of emissions from new locomotives or new engines in locomotives beginning in 2030 or 2035 (depending on the locomotive application). Operators will be required to start retiring locomotives in 2030 once those locomotives have an engine build date of 23 years prior. Simultaneously, new locomotives with engine build dates of 2030 or 2035 (depending on the application) must be capable of operating in a zero-emission configuration. By 2053 and 2058 (depending on the application), every non-exempt locomotive and locomotive engine operating in California must be capable of operating in a zero-emission configuration to comply with California’s regulation. [EPA-HQ-OAR-2022-0985-1580-A1, p. 15]

To enable railroad operators to comply with California’s In-Use Regulation, manufacturers such as Wabtec will have to design and manufacture new locomotives and new engines capable of zero-emission operations as early as 2030 to enable new locomotive purchases as operators are forced to retire older models. This also will require a significant amount of research, development, and investment to deploy zero-emission locomotives widely.⁴² As the rail industry transitions to zero-emissions and alternative propulsion technologies, it will need to account for less mature technologies, as well as several other hurdles that may slow the commercial adoption rate. It is likely that there will be a much longer horizon for commercialization of zero-emissions locomotives, which extends well beyond 2030. As discussed above in section III. B. Challenges to Commercial Adoption of Alternative Propulsion Technologies, broad deployment of zero-emission locomotives will require investment in sustainable and renewable electricity supply, more electrical grid stability and connectivity, new charging and refueling infrastructure, and battery and rare earth minerals stabilized supply chains. Railroads also need assurance that

new locomotive technologies will deliver reliable and safe operations through many years of demonstrated field testing and use. [EPA-HQ-OAR-2022-0985-1580-A1, pp. 15 - 16]

42 Wabtec’s Tier 4 Evolution Series locomotive development is illustrative. Wabtec’s Tier 4 technology development program, took more than 10 years, starting in 2009 before the effective date of EPA’s Tier 4 standard in 2015. Once Wabtec had a successful design in 2015 and manufactured a few hundred locomotives, it required thousands of locomotive years in revenue service to become a stable and mature platform for the railroads commencing in 2020. This was a decade-long journey for a diesel-powered internal combustion engine, a proven technology unlike zero-emission technologies that are in their infancy.

At the same time, there is no federal requirement that locomotives or locomotive engines built in or after 2030 or 2035 (depending on the application) be capable of operating in a zero-emission configuration. The most restrictive federal standards, Tier 4, already offer significant reductions in local air pollution and GHG emissions from locomotives. California’s regulation will impose a new de facto “standard or other requirement relating to the control of emissions from . . . [n]ew locomotives or new engines used in locomotives”⁴³ that impermissibly diverges from the existing federal regulatory landscape, which the Clean Air Act expressly prohibits. [EPA-HQ-OAR-2022-0985-1580-A1, p. 16]

43 42 U.S.C. § 7543(e)(1).

B. Idling Requirements

The idling requirements in California’s In-Use Regulation, by contrast, do not have any impact on new locomotive or new locomotive engine design and manufacture. California restricts the time a locomotive engine may idle to “30 minutes after the Locomotive becomes stationary” with some limited exceptions and exemptions.⁴⁴ This is a purely operational requirement and does not run afoul of Section 209(e) of the Clean Air Act’s preemption. Manufacturers do not need to make any design or manufacturing changes to new locomotives or new locomotive engines to ensure compliance with California’s operational idling requirement. [EPA-HQ-OAR-2022-0985-1580-A1, p. 16]

44 In-Use Regulation, § 2478.9(a).

Evaluating the idling requirement’s impact on new locomotive or new engine design or manufacturing is relatively straightforward, but other contemplated state-level controls will inevitably be much more difficult to evaluate. Wabtec therefore requests that Part 1074 revisions continue to allow manufacturers to opine on state-level control proposals through a public notice and comment process. [EPA-HQ-OAR-2022-0985-1580-A1, p. 16]

C. California’s “Zero-Emission” Definition Restricts Design and Manufacture of New Locomotives and Engines by Unreasonably Prohibiting Near-Zero-Emission Technology Such as Hydrogen Internal Combustion Engines

Wabtec is making a concerted effort to develop and deploy locomotive technologies that can drastically reduce GHG and criteria pollutant emissions across the rail sector, including hydrogen internal combustion engines (“ICE”) powered locomotives. But California’s In-Use Regulation definition of “Zero Emission (ZE) Capable Locomotive” would prevent promising technologies like these from operating in California. [EPA-HQ-OAR-2022-0985-1580-A1, p. 16]

Specifically, under Section 2478.3:

“Zero Emission (ZE) Capable Locomotive” means a Locomotive that can be Operated in a Zero Emission Configuration and that can also be Operated using a fuel that produces emissions. To qualify as a ZE Capable Locomotive for a given Calendar Year, the Operator shall demonstrate that the Locomotive was only Operated in a ZE Configuration when Operating in California during that Calendar Year. A ZE Capable Locomotive that has been Operated outside of a ZE Configuration within California at any point during a Calendar Year shall not qualify as a ZE Capable Locomotive for that Calendar Year and shall be treated as an emitting Locomotive based on the U.S. EPA Tier of its engine for the purposes of this Locomotive Regulation.

“Zero Emission (ZE) Configuration” is a Locomotive configuration that Operates in a zero-emission capacity. ZE Locomotives always Operate in a ZE Configuration. To be considered as Operating in a ZE Configuration, the Locomotive shall not emit any criteria pollutant, toxic pollutant, or greenhouse gas from any onboard source of power at any power setting when Operated in a ZE Configuration, including any propulsion power that is connected to and moves with the Locomotive when it is in motion. [EPA-HQ-OAR-2022-0985-1580-A1, p. 17]

Thus, to qualify as a “zero emission capable locomotive,” a locomotive may not emit any criteria pollutant. [EPA-HQ-OAR-2022-0985-1580-A1, p. 17]

Hydrogen ICE can operate with minimal CO₂ emissions (~5% compared to diesel engine), and hydrogen fuels themselves do not release any PM, carbon monoxide, or VOCs. However, when burned in an ICE hydrogen produces minimal amounts of NO_x emissions, which can be controlled with aftertreatment systems that eliminate most, but not all, NO_x emissions. These trace amounts of NO_x are derived from the nitrogen that already exists in ambient air and are formed by the combustion process. Similarly, hydrogen ICE may produce trace amounts of PM, but such emissions are derived solely from small quantities of lubricating oil that may infrequently enter an ICE cylinder. CARB itself has acknowledged that hydrogen ICE can “achieve 0.00 g/bh-hr for NO_x and 0.000 g/bhp-hr for PM after rounding.”⁴⁵ In spite of that, the In-Use Regulation’s broad “zero emission capable locomotive” definition counterproductively discourages OEMs from investing in and developing hydrogen ICE locomotives, which could otherwise offer significant emission reductions. [EPA-HQ-OAR-2022-0985-1580-A1, p. 17]

45 CARB, Public Hearing to Consider the Proposed In-Use Locomotive Regulation, Staff Report: Initial Statement of Reasons at 97 (Sept. 20, 2022).

Hydrogen fuel cell locomotives could potentially meet CARB’s definition of a zero-emission capable locomotive. However, hydrogen locomotive technology is many years away from commercial viability. To date, there are still technological and logistical factors hindering commercialization of hydrogen fuel cell locomotives, including power capabilities for line-haul, energy efficiency, and speed capabilities. [EPA-HQ-OAR-2022-0985-1580-A1, p. 17]

EPA Summary and Response:

Summary:

The types of comments grouped above under this miscellaneous heading include: information about short line railroads, railroads in general and railroads in California; concerns about air quality in California and in other parts of the US impacted by locomotive emissions; concerns about the health and environmental burdens on communities of the US freight movement system;

general opinions about streamlined regulations; opinions about proposed California regulations; opinions about development of future technologies to reduce air emissions from locomotives, and appeals to EPA to adopt more stringent locomotive emission standards.

Response:

The several subjects raised in the miscellaneous comments presented above present numerous issues that may be addressed in separate future actions, but they do not directly relate to the specific regulatory action taken here to revise EPA's locomotive preemption regulations. In some cases they relate to possible future actions that EPA may consider in the coming years. For example, we did not propose, nor can we finalize in this action, any regulations to reduce the air emissions from new locomotives or new engines used in locomotives. We also did not propose and cannot at this time take any action regarding any version of California's rules under development regarding locomotives. We share the concerns expressed about the exposures and health effects of residents in communities near rail yards. We appreciate those detailed comments which could provide support for a future EPA action. However, these miscellaneous comments are not of central relevance to the outcome of this specific final rule, and we are not further addressing them here.

Appendix A: Other Comments Received, Not Reproduced Verbatim in Text

We identified three general comments mentioning locomotive preemption, which we have not repeated verbatim above in this document. The Washington State Department of Ecology and Christopher Lish both offered general support for our proposal. The Sierra Club offered general support for our locomotive preemption proposal, and their comment letter was signed by 32 advocacy groups.

Docket ID No. of Comment	Name
EPA-HQ-OAR-2022-0985-1476	Washington State Department of Ecology
EPA-HQ-OAR-2022-0985-1557	Christopher Lish
EPA-HQ-OAR-2022-0985-1636	Sierra Club et al.

Appendix B: List of Testifiers at Public Hearings

16 people mentioned locomotive preemption in their testimony at our public hearings.

Hearing Day	Docket ID No. of Testimony Transcript	Page Nos.	Name	Affiliation
Day 1	EPA-HQ-OAR-2022-0985-2666	24-27	Paul Billings	American Lung Association
Day 1	EPA-HQ-OAR-2022-0985-2666	33-36	Will Barrett	American Lung Association
Day 1	EPA-HQ-OAR-2022-0985-2666	114-117	Britt Carmon	Natural Resources Defense Council (NRDC)
Day 1	EPA-HQ-OAR-2022-0985-2666	238-240	Athena Motawef	Earthjustice
Day 1	EPA-HQ-OAR-2022-0985-2666	263-265	Larry Hopkins	UE Local 1177
Day 1	EPA-HQ-OAR-2022-0985-2666	266-268	Cedric Whelchel	UE Local 1177
Day 1	EPA-HQ-OAR-2022-0985-2666	268-270	Tim Gould	Private Citizen
Day 1	EPA-HQ-OAR-2022-0985-2666	362-365	Molly Greenberg	Moving Forward Network (MFN)
Day 2	EPA-HQ-OAR-2022-0985-2666	44-47	Rachel Patterson	Evergreen Action
Day 2	EPA-HQ-OAR-2022-0985-2666	73-76	Ryan Makarem	Clean Air Now
Day 2	EPA-HQ-OAR-2022-0985-2666	89-91	Andrew Dinkelaker	United Electrical Radio and Machine Workers of America
Day 2	EPA-HQ-OAR-2022-0985-2666	145-148	Elaine O'Grady	Northeast States for Coordinated Air Use Management (NESCAUM)
Day 2	EPA-HQ-OAR-2022-0985-2666	183-185	Yasmine Agelidis	Earthjustice Right Zero Campaign
Day 2	EPA-HQ-OAR-2022-0985-2666	209-211	Yassi Kravezade	Sierra Club My Generation Campaign
Day 2	EPA-HQ-OAR-2022-0985-2666	107-109	Reverend Dr. Jessica Moerman	Private Citizen
Day 2	EPA-HQ-OAR-2022-0985-2666	283-286	Mary Arnold	Civics United for Railroad Environmental Solutions