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To Whom It May Concern:

The National Association of Clean Air Agencies (NACAA) offers the following comments on the U.S. Environmental Protection Agency's (EPA) Notice of Proposed Rulemaking (NPRM), "Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles – Phase 3," which was published in the *Federal Register* on April 27, 2023 (88 Fed. Reg. 25,926).¹ NACAA is the national, nonpartisan, non-profit association of 157 air pollution control agencies in 40 states, including 117 local air agencies, the District of Columbia and five territories. The air quality professionals in our member agencies have vast experience dedicated to improving air quality in the U.S. These comments are based upon that experience. The views expressed in these comments do not represent the positions of every state and local air pollution control agency in the country.

Introduction

NACAA has supported EPA's 2011 adoption of the Phase 1 greenhouse gas (GHG) emission standards for heavy-duty vehicles and engines, which took effect with model year (MY) 2014,² and the agency's 2016 adoption of the Phase 2 GHG standards, which took effect with MY 2021.^{3,4} We now welcome EPA's Phase 3 proposal and the opportunity it presents to enhance this important program in a way that optimally reflects the rapidly growing heavy-duty zero-emission vehicle (ZEV) market, the unprecedented financial incentives provided under the Bipartisan Infrastructure Law and Inflation Reduction Act and the impacts of state leadership, to best protect human health and our planet and lay the path for a future rule that will establish additional standards to begin with MY 2033.

In NACAA's January 15, 2021, transition paper to the Biden-Harris Administration⁵ our association wrote, "state and local agencies in NACAA have implemented programs that made meaningful progress towards reducing GHGs, but a strong, comprehensive federal approach is essential for providing lasting nationwide reductions, regulatory certainty and a more protective baseline for all states to meet." We further wrote, "Despite the technological and regulatory progress made over the past nearly 60 years, mobile sources continue to dominate emission inventories across the U.S. and are the largest contributing sector to GHG emissions. Our nation needs a strong sustainable transportation strategy. Top priority must

¹ <https://www.govinfo.gov/content/pkg/FR-2023-04-27/pdf/2023-07955.pdf>

² https://www.4cleanair.org/wp-content/uploads/2021/01/NACAAFinalCommentsonEPANHTSAProposedHDGHGStds013111_0.pdf

³ <https://www.4cleanair.org/wp-content/uploads/EPANHTSAJointPhase2Prop-09292015.pdf>

⁴ <https://www.4cleanair.org/wp-content/uploads/GHG-CAFE-Phase2FuelEcon-03182015.pdf>

⁵ <https://www.4cleanair.org/wp-content/uploads/NACAA2021PresidentialTransitionDocument-01152021.pdf>

be placed on new federal programs to continue to reduce emissions from the mobile source sector.” The proposed Phase 3 rule offers an opportunity for the federal government to take a robust step toward meeting both of these goals and NACAA is optimistic that working with states, cities, counties and other stakeholders, EPA can finalize another phase of highway heavy-duty GHG emission standards that will protect and save lives, foster innovation, create prosperity and reduce the risks facing our climate.

Importance of More Robust Federal GHG Emission Standards for Heavy-Duty Vehicles and Engines

The U.S. transportation sector has surpassed the manufacturing and power generation sectors as the largest source of GHG emissions in the country, representing 27 percent of total GHG emissions nationwide. However, in numerous areas of the country the contribution of the transportation sector is far greater – 40 percent or more. Heavy-duty vehicles are the second largest contributor nationwide to transportation-sector GHG emissions (behind light-duty vehicles) at 25 percent. Heavy-duty vehicles are also responsible for a disproportionate share of pollutants that cause or contribute to ozone and soot and cancer-causing pollutants, particularly in disadvantaged communities, reinforcing the need for continuously more rigorous standards to cut, and eventually eliminate, emissions from these vehicles.

A third phase of federal emission standards for heavy-duty trucks will yield important reductions in GHG emissions. The stringency of the standards will determine the level of these reductions. In addition, as EPA rightly acknowledges in its proposal, as use of heavy-duty zero-emission vehicles (ZEVs) increases to meet performance-based carbon dioxide (CO₂) emission standards, vehicle emissions of criteria and toxic air pollutants will also decrease. Reductions in all of these pollutants will benefit every area of the country, assisting them in achieving their air quality, climate protection and environmental justice goals.

In its March 20, 2023 “AR6 Synthesis Report: Climate Change 2023,”⁶ the United Nations (UN) Intergovernmental Panel on Climate Change (IPCC) concludes, among many other things, that 1) “Human activities, principally through emissions of greenhouse gases, have unequivocally caused global warming, with global surface temperature reaching 1.1°C above 1850–1900 in 2011–2020. Global greenhouse gas emissions have continued to increase, with unequal historical and ongoing contributions arising from unsustainable energy use, land use and land-use change, lifestyles and patterns of consumption and production across regions, between and within countries, and among individuals”; 2) “Policies and laws addressing mitigation have consistently expanded since AR5. Global GHG emissions in 2030 implied by nationally determined contributions (NDCs) announced by October 2021 make it likely that warming will exceed 1.5°C during the 21st century and make it harder to limit warming below 2°C. There are gaps between projected emissions from implemented policies and those from NDCs and finance flows fall short of the levels needed to meet climate goals across all sectors and regions”; and 3) “For any given future warming level, many climate-related risks are higher than assessed in AR5, and projected long-term impacts are up to multiple times higher than currently observed . . . Risks and projected adverse impacts and related losses and damages from climate change escalate with every increment of global warming . . . Climatic and non-climatic risks will increasingly interact, creating compound and cascading risks that are more complex and difficult to manage.”

With respect to criteria pollutants, more than one-third of the U.S. population currently lives in an area that does not meet the health- and welfare-based National Ambient Air Quality Standards (NAAQS) for ozone, particulate matter (PM) or both. Many of these areas are over-burdened communities whose

⁶ <https://www.ipcc.ch/report/ar6/syr/>

citizens are exposed to a disproportionate share of harmful environmental conditions. Transportation-related emissions are a primary cause, contributing substantial emissions of both directly emitted PM_{2.5} and nitrogen oxide (NO_x) – the key pollutants contributing to the formation of ozone and PM_{2.5} – and are linked with a large number of adverse impacts on the respiratory system, as well as other ill effects associated with exposure to elevated levels of ozone and PM, including premature death.

While state and local air agencies have made great strides in reducing emissions from stationary sources, for the most part they lack the authority to regulate mobile sources and never have the authority to regulate mobile sources across their borders. The regulation of mobile sources is an authority that lies almost entirely within the purview of the federal government. While air agencies in regions across the country may pursue standards under Clean Air Act (CAA) section 177 that are first adopted by California (under CAA section 209), most are precluded, by state policies or legislation, from adopting standards more stringent than those of the federal government.

As many parts of the country slip deeper into nonattainment, or are on the cusp of it, many state and local air agencies are left with few remaining mechanisms to achieve the emission reductions the CAA requires. Areas that miss their attainment deadlines face the threat of “bump-up” to a more demanding classification of nonattainment – if they are not already classified as Extreme – and statutorily required economic sanctions if they fail to meet their attainment deadlines. On October 7, 2022, EPA bumped up over 25 areas in nonattainment of the 2008⁷ and 2015⁸ ozone NAAQS, meaning the citizens of these areas continue to suffer the detrimental impacts of unhealthful air.

Further, EPA is now in the process of reconsidering the existing PM and ozone NAAQS, which were revised with greater stringency in 2012 and 2015, respectively, and retained without revision in December 2020. Regardless of whether either or both standards are strengthened, the fact is that many areas across the country need reductions in pollutants that contribute to PM_{2.5} and ozone just to meet or sustain the current NAAQS and provide clean air to their citizens.

Carbon, criteria pollutant and toxic emissions from heavy-duty trucks harm public health and threaten our climate. Every area of the nation is adversely affected by these emissions and their growing impacts. Those living in communities that bear a disproportionately and unjustly greater burden of the consequences of these emissions must be the central focus, rather than on the margins, of EPA’s attention when the agency finalizes this rule. Toward all these ends, NACAA offers the following specific comments and recommendations.

NACAA’s Comments and Recommendations

NACAA agrees with EPA that several dramatic shifts in the ZEV “landscape” over the past several years have vastly increased the feasibility, availability and cost competitiveness of heavy-duty ZEV technologies.

The evolution of heavy-duty ZEVs has been remarkable and, by all accounts, will continue on an upward trajectory. Many heavy-duty ZEVs are already in use for various applications and ZEV technologies for many more applications are not far behind. Numerous truck manufacturers have publicly

⁷ <https://www.govinfo.gov/content/pkg/FR-2022-10-07/pdf/2022-20458.pdf>

⁸ <https://www.govinfo.gov/content/pkg/FR-2022-10-07/pdf/2022-20460.pdf>

announced goals to reach 50 percent or more ZEV sales by as soon as MY 2030 and some have committed to or set goals for, and invested heavily in, 100-percent “carbon-neutral” trucks, zero emissions or net-zero carbon emissions by years ranging from 2039 to 2050. Meanwhile, large private heavy-duty fleet owners’ commitments to expand their electric fleets in this decade continue to increase as do their targets for full electrification or net-zero emissions by 2040. In his May 2, 2023, testimony at EPA’s virtual public hearing on this proposed rule Jed Mandel, President of the Truck and Engine Manufacturers Association (EMA), testified that members of EMA “have a long history of successfully implementing EPA’s technology forcing rules. Today’s proposal would establish regulations designed to transition the market for new commercial vehicles to zero-emissions. We fully support that goal – demonstrated by the billions of dollars already invested by EMA members to develop and bring to market zero-emission powertrains and vehicles. In that regard, EPA’s historic goal – forcing new technology to lower emissions – already is being met. Unlike previous technology forcing rules, the challenge is not in forcing the development of zero-emission vehicles and powertrains, the challenge is forcing the development of the infrastructures needed to recharge and refuel them.”⁹

Fortunately, the Bipartisan Infrastructure Law (BIL) and the Inflation Reduction Act (IRA) enacted by Congress and signed by President Biden in 2021 and 2022, respectively, infuse unprecedented funding into grant programs, tax incentives and other funding mechanisms for the production and purchase of heavy-duty ZEVs and timely development of the necessary infrastructure for vehicle charging and hydrogen to support a rapid growth in market penetration of heavy-duty ZEVs. The tens of billions of dollars committed to these programs, and already being spent, transform the ZEV landscape, and what’s possible to accomplish over the next decade or so, in ways that were inconceivable to some just a few years ago. Rather than forcing the development of infrastructure, entities are eagerly competing for robust funding that will deliver the needed infrastructure. In addition, a variety of utility planning initiatives are underway to assess heavy-duty charging infrastructure needs for fueling electric trucks and buses. A couple of examples are 1) analyses undertaken by the East Coast utility National Grid to support investments in heavy-duty charging infrastructure and examine grid capacity needed to support fleet electrification^{10,11} and 2) the West Coast Clean Transit Corridor Initiative, a collaboration among 16 utilities to support development of electric vehicle charging infrastructure for trucks along the I-5 corridor between the U.S. borders with Mexico and Canada.¹²

State leadership is also playing a pivotal role in rapidly ramping up heavy-duty ZEV adoption. In summer 2020, 17 states and the District of Columbia entered into the Multi-State Medium- and Heavy-Duty Zero Emission Vehicle Memorandum of Understanding (MOU), including specific goals and targets, agreeing to collaborate “to foster a self-sustaining market for zero emission medium- and heavy-duty vehicles.”¹³ In July 2022, this group reaffirmed and strengthened its commitment to the MOU by releasing an Action Plan for accelerating a transition to zero-emission trucks and buses.¹⁴ Eight of these states have chosen to exercise their authority under CAA section 177 to adopt the California Advanced Clean Trucks (ACT) Regulation requiring manufacturers that certify Class 2b through Class 8 chassis or complete vehicles with combustion engines to sell increasing (through MY 2032) percentages of ZEVs as part of their

⁹<https://static1.squarespace.com/static/624ddf53a2360b6600755b47/t/64513b1fc8c66c7771fdc539/1683045152019/2023+05+02+EMA+Testimony+on+GHG+Phase+3+NPRM+FINAL.pdf>

¹⁰ <https://www.nationalgrid.com/us/EVhighway>

¹¹ <https://www.nationalgridus.com/media/pdfs/microsites/ev-fleet-program/understandinggridimpactsofelectricfleets.pdf>

¹² <https://westcoastcleantransit.com>

¹³ <https://www.nescaum.org/documents/mhdv-zev-mou-20220329.pdf>

¹⁴ <https://www.nescaum.org/documents/multi-state-medium-and-heavy-duty-zev-action-plan.pdf>

annual sales through 2035, with 60 percent ZEVs for vocational vehicles and 40 percent ZEVs for tractors (short-haul and long-haul combined). Additional states have efforts underway regarding ACT and with each additional adopting state comes a greater share of the national heavy-duty market.

In September 2021, five states signed the Regional Electric Vehicle Midwest Coalition Memorandum of Understanding “to accelerate vehicle electrification in the Midwest” and provide “the foundation for cooperation on fleet electrification along key commercial corridors to safeguard economic security, reduce harmful emissions, improve public health, and advance innovation” while positioning the region “to realize additional economic opportunity in clean energy manufacturing and deployment.”¹⁵

These and other developments highlight not only that standards beyond those proposed by EPA are achievable and cost competitive but also that the infrastructure necessary to support such standards can be put in place in concert with vehicle rollouts across the timeframe of this rule.

EPA Should Set Phase 3 CO₂ Standards That, at a Minimum, Reflect ACT Through MY 2032, With Some Modifications

EPA’s proposal includes progressively more stringent, performance-based CO₂ emission standards for MY 2027 through 2032 vocational vehicles and short-haul (day cab) tractors and for MY 2030 through 2032 long-haul (sleeper cab) tractors. The proposed standards do not mandate the use of any specific technology. Instead, each manufacturer may choose what mix of emission control technologies is best suited for its fleet to meet the standards. EPA projects that one possible pathway toward meeting the proposed standards would include penetration of ZEVs at the following rates: 50 percent ZEVs for vocational vehicles in MY 2032 (which includes the use of battery electric and fuel cell technologies); 35 percent ZEVs for short-haul tractors in MY 2032 (which includes the use of battery electric and fuel cell technologies); and 25 percent ZEVs for long-haul tractors (which primarily includes the use of fuel cell technologies).

EPA also analyzed and puts forth for comment a regulatory alternative “that would establish less stringent CO₂ emission standards and, thus, would result in fewer GHG emission reductions than the CO₂ emission standards we are proposing.” According to EPA, one possible pathway toward meeting the alternative standards would include penetration of ZEVs at the following rates: 40 percent ZEVs for vocational vehicles in MY 2032; 25 percent ZEVs for short-haul tractors in MY 2032; and 20 percent ZEVs for long-haul tractors.

In addition, EPA seeks comments on, though did not conduct modeling analyses for, several other scenarios through MY 2032: 1) GHG emission standards based on values less stringent than EPA’s lower-stringency alternative for some market segments; 2) GHG emission standards based on values more stringent than the alternative but less stringent than the proposal; 3) GHG emission standards based on values between the proposed standards and those that would reflect ZEV adoption levels in ACT; 4) GHG emission standards based on values that would reflect the ACT program; and 5) GHG emission standards based on values beyond those that would reflect ZEV adoption levels in ACT. The agency also requests comments on adopting the same standards as under the proposal but at a more gradual increase in

¹⁵ https://www.michigan.gov/-/media/Project/Websites/leo/REV_Midwest_MOU_master.pdf?rev=6dd781b5a4eb4551b3b3a5b875d67fb9

stringency between MYs 2027 and 2032 and on adopting progressively more stringent standards through MY 2035.

Given the factors we outline at the beginning of this section on NACAA's comments and recommendations – the evolution of heavy-duty ZEVs, investments and commitments by fleets and manufacturers, historic monetary incentives provided under BIL and IRA and state leadership in accelerating electrification – EPA should, in its final rule, improve upon its proposal by adopting federal Phase 3 GHG emission standards that, at a minimum, are based on values that reflect ACT ZEV sales percentages through MY 2032 but with more rigorous standards for several types of heavy-duty vehicles: 1) transit buses and school buses, for which federal funds for electrification are specifically targeted and various states have laws and policies setting electric vehicle and ZEV purchasing goals and requirements and 2) refuse and concrete trucks, for which EPA already projects substantial ZEV market uptake. Also of note is that because of their vocation, emissions from these vehicle types significantly impact overburdened communities. These vehicle categories, with many existing ZEV technologies, should be removed from the weaker Custom Chassis GHG standards and placed back in Vocational GHG standards with the flexibility option to remain in the Custom Chassis GHG standards if they produce a minimum fraction of ZEVs to offset the difference in standards.

EPA also requests comment on the readiness of ZEV charging and refueling infrastructure. Specifically, EPA writes in the proposal that “. . . important early actions and market indicators suggest strong growth in charging and refueling ZEV infrastructure in the coming years. Furthermore, as described in Section II of this document, our analysis of charging infrastructure needs and costs supports the feasibility of the future growth of ZEV technology of the magnitude EPA is projecting in this proposal's technology package. EPA has heard from some representatives from the heavy-duty vehicle manufacturing industry both optimism regarding the heavy-duty industry's ability to produce ZEV technologies in future years at high volume, but also concern that a slow growth in ZEV charging and refueling infrastructure can slow the growth of heavy-duty ZEV adoption, and that this may present challenges for vehicle manufacturers ability to comply with future EPA GHG standards. Several heavy-duty vehicle manufacturers have encouraged EPA to consider ways to address this concern both in the development of the Phase 3 program, and in the structure of the Phase 3 program itself. EPA requests comment on this concern, both in the Phase 3 rulemaking process, and in consideration of whether EPA should consider undertaking any future actions related to the Phase 3 standards, if finalized, with respect to the future growth of the charging and refueling infrastructure for ZEVs.”¹⁶

For reasons we explain earlier in these comments, NACAA does not share the concerns expressed by some representatives of the heavy-duty vehicle manufacturing industry about the ability of electric utilities and/or charging equipment and service providers to continuously meet the incremental rollout needs for ZEV charging and refueling infrastructure. NACAA firmly opposes an “off-ramp” from the standards or any similar measure. Likewise, anything akin to a mid-term evaluation is unnecessary and inappropriate given the program will begin in just a few years, span the course of only five years and starts from a demonstrated baseline of vehicle and charging technology. NACAA strongly urges EPA to reject any such provisions.

There is a great deal of evidence, including what NACAA provides at the beginning of this section on our comments and recommendations, that points to the coming readiness of the charging and fueling

¹⁶ *Supra* note 1, at 25,934

infrastructure needed to support strong Phase 3 standards. The federal government has demonstrated its deep commitment to accelerating the transition to ZEVs by providing historic levels of funding and monetary incentives including for timely infrastructure. NACAA notes that given the importance of this federal funding to achieving meaningful nationwide reductions in GHG emissions, including from heavy-duty vehicles and engines, EPA should ensure that these funds are allocated equitably across the country. In addition to federal action, states and local areas are demonstrating leadership by undertaking their own infrastructure initiatives. These are helping to drive private investment to capitalize on these opportunities. The following are a few examples.

Maryland fully supports and recommends that EPA begin moving toward electrification in the medium- and heavy-duty (MHD) truck sector. Over the past few years Maryland has implemented several programs and projects to aid in this transition to electric trucks. As part of this support, the Maryland General Assembly passed legislation requiring the Maryland Department of the Environment (MDE) to adopt ACT by the end of 2023. In addition, the legislation requires MDE to perform a needs assessment study for MHD electrification. The needs assessment study seeks to identify barriers and issues that will need to be addressed for Maryland to successfully transition the MHD sector to electric. The study will be completed by the end of calendar year 2024. Maryland will use this information to aid in the implementation of MHD ZEVs in the state. Additionally, legislation introduced by Governor Moore passed this year and will provide at least \$10 million dollars annually for incentives for both MHD vehicles and charging infrastructure.

The [Oregon Zero Emission Fueling Infrastructure Grant](#) is a one-time \$15-million pilot grant program to support private and public fueling infrastructure for zero-emission medium- and heavy-duty vehicles. The goal of the grant program is to accelerate Oregon's transition from older, more polluting vehicles and equipment to new zero-emission trucks, buses and equipment. In addition, the Oregon Department of Environmental Quality seeks to facilitate development of a robust infrastructure to support a diverse range of Oregon fleets and fueling locations. The rolling application period began in January 2023.

The District of Columbia enacted the Clean Energy DC Omnibus Amendment Act of 2018, which required the development of a “comprehensive clean vehicle transition plan.” [The District of Columbia Transportation Electrification Roadmap](#) was finalized in September 2022 and lays out concrete plans to meet charging needs, transition District government fleets, work with stakeholders, educate the public and ensure equity. Regarding the charging network, the plan includes steps to 1) conduct a charging gap analysis, 2) expand the level 2 charging network to meet a ratio of 2 percent of registered electric vehicles by 2025 with a focus on historically overburdened communities, 3) build out level 2 charging in workplaces, 4) provide more public charging at District-owned facilities, with a focus on historically overburdened communities, 5) pursue grants to electrify existing gas stations and 6) work with federal agencies to expand charging stations at their facilities, specifically parks.

Through a [Memorandum of Understanding](#) administered by the Midcontinent Regional Electric Vehicle Partnership (Mid REV) [Minnesota, Illinois, Indiana, Michigan and Washington collaborate](#) to accelerate medium- and heavy-duty fleet electrification and ensure consistency for creating an interconnected electric vehicle charging network within the region. Also in Minnesota, the state Department of Transportation is completing a research project with the University of Minnesota on medium- and heavy-duty electric vehicle charging corridor feasibility.

Annually, the Bay Area Air Quality Management District (BAAQMD) in San Francisco has approximately \$100 million in incentive funding available for the replacement of eligible medium- and heavy-duty vehicles and equipment. Applications for mobile source projects are typically reviewed on a first-come-first-served basis and evaluated for eligibility under the respective governing policies and guidelines established by each funding source; the Carl Moyer Program guidelines established by the California Air Resources Board (CARB) are used to review most projects. In 2022, BAAQMD awarded funding to 21 projects including two standalone zero-emission infrastructure projects and 19 projects that will deploy supporting refueling infrastructure in combination with medium- and heavy duty zero-emission vehicles. Thirty-eight percent of these projects will be in disadvantaged communities. Of the 21 projects, 20 are electric-fueled equipment (10 electric yard truck projects, four electric school bus projects, two electric heavy-duty truck projects and one project each for electric transit buses, electric construction equipment, electric forklifts and electric shore power for ocean-going vessels) and one is a hydrogen-fueled tank for a station that serves transit buses. More detailed information on BAAQMD's initiatives to develop charging infrastructure for medium- and heavy-duty vehicles and address related issues is provided in this [white paper prepared by Bay Area staff](#).

New Jersey adopted ACT in November 2021 and CARB's Omnibus heavy-duty NO_x standards for medium- and heavy-duty vehicles and inspection requirements for medium-duty vehicles in April 2023. New and used electric medium- and heavy-duty vehicles are exempt from state sales tax. In 2022, New Jersey passed a law establishing a \$45-million grant program for electric school buses, to be administered by the state's Department of Environmental Protection. Since 2019, New Jersey has used Volkswagen settlement funds and proceeds from the Regional Greenhouse Gas Initiative to fund the purchase of electric medium- and heavy-duty vehicles and associated charging infrastructure, including 286 electric trucks and cargo vans, 242 electric buses and shuttle buses and 162 electric airport and port vehicles and equipment. The state's Board of Public Utilities published a draft framework under which all electric utilities are required to provide grants for the Make-Ready portion of medium- and heavy-duty charging stations. In addition, the state has passed a law to ensure that all municipalities permit/approve electric vehicle charging stations in a streamlined, consistent manner.

New York State has established state-specific goals for purchases of zero-emission transit buses serving major urban centers, school buses and medium- and heavy-duty vehicles overall. A state executive order requires applicable state fleets of medium- and heavy-duty vehicles to be 100 percent ZEV by 2040. The Joint Utilities of New York Make-Ready program supports the development of electric infrastructure and equipment necessary to accommodate an increased deployment of electric vehicles within New York State by reducing the upfront costs of building charging stations for electric vehicles while also providing fleet assessment services. To assist with ZEV outgrowth, New York has leveraged funds from the Volkswagen settlement to provide incentives for new medium- and heavy-duty ZEV purchases through the New York Truck Voucher Incentive Program and New York City Clean Trucks Program. A municipal ZEV rebate program provides incentives to encourage medium-duty ZEV adoption. Finally, New York's Public Service Commission is working to mitigate demand charges through a relief program to further improve the economics of ZEV use ([Case 22-E-0236](#)) and has commenced a proceeding to address barriers to medium- and heavy-duty electric vehicle charging infrastructure ([Case 23-E-0070](#)).

California has taken a multi-faceted approach to address infrastructure needs for medium- and heavy-duty vehicles, as described in the [California Energy Commission's Zero-Emission Vehicle Infrastructure Plan](#). This plan summarizes the state's electrical grid planning, assessment of needed infrastructure and planning for deployment as well as the state's substantial funding programs.

Additionally, in April, eight California state agencies signed a [Zero-Emission Infrastructure Joint Agency Statement of Intent](#) outlining the state's commitment to coordination across energy, transportation, business development, state operations and air quality programs to share data, plan jointly, engage stakeholders together and link vehicle and infrastructure funding programs.

In Washington, the Department of Ecology is providing \$14 million for scrapping and replacing diesel school buses with new zero-emission school buses. Funding is also available for charging or fueling infrastructure for the new school buses. Eligible entities are school bus owners that transport students to K-12 schools identified by the Washington Office of Superintendent of Public Instruction or private K-12 schools approved by the Washington State Board of Education for the 2022-2023 school year. Approximately \$1 million of additional grant funding will be made available for one or more of the following projects, including charging or fueling infrastructure: 1) scrapping and replacing diesel yard trucks with zero-emission yard trucks, 2) scrapping and replacing diesel transit buses with zero-emission transit buses and 3) replacing the oldest diesel marine engines with all-electric or hybrid-electric systems. The Washington Department of Ecology is also providing approximately \$16 million in competitive grants to support public and Tribal governments in replacing, with zero-emission models, diesel street sweepers, refuse vehicles, freight switcher locomotives and port cargo handling equipment. Eligible vehicle replacements include class 4-8 zero-emission vehicles. Grants will also support the purchase and installation of associated charging or fueling infrastructure. The application period will be open from July 26, 2023 to October 26, 2023.

Eliminate Advanced Technology Multipliers After MY 2026

In its Phase 2 heavy-duty GHG rule, adopted in 2016, EPA provided Advanced Technology Multipliers through MY 2027 for battery electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs) and fuel cell electric vehicles (FCEVs) to incentivize development and sales of these technologies. Since that time, the feasibility, availability and cost-competitiveness of the technologies EPA intended to incubate have far outpaced EPA's expectations. Accordingly, the agency proposes to eliminate the Advanced Technology Multipliers for BEVs and PHEVs after MY 2026 and to retain the 5.5 multiplier for FCEVs through MY 2027. NACAA supports EPA's proposal to end the BEV and PHEV Advanced Technology Multipliers with MY 2026 and, further, recommends that the agency also end the multiplier for FCEVs with MY 2026. Given the multiple commercialized heavy-duty fuel cell vehicles an Advanced Technology Multiplier beyond MY 2026 is not necessary and retaining one through MY 2027 could result in the significant generation of credits and an erosion of the CO₂ emission standards.

End the Phase 2 Credit Exchange Between Vocational Vehicles and Tractors

The averaging, banking and trading program under EPA's current Phase 2 heavy-duty GHG program allows CO₂ emission credits to be exchanged between vocational vehicles and tractors within a weight class. With the final Phase 3 rule, EPA should end the Phase 2 credit exchange program to ensure that manufacturers produce heavy-duty ZEVs across the range of vehicle configurations they produce.

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 NO_x 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.

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

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 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. 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-

¹⁷ *Supra* note 1, at 26,092

¹⁸ *Id.* at 20,094

¹⁹ *Supra* note 1, at 26,095

emission locomotives. In doing so, EPA should look for opportunities to aggressively accelerate the infrastructure for such newer, cleaner locomotives into the nationwide fleet.

Below are a few examples of the impact of locomotive emissions on areas within NACAA member air agencies' jurisdictions.

According to the 2020 National Emissions Inventory, 7.4 percent of NO_x emissions in the District of Columbia 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) – a historically overburdened community that is a focus of both District and EPA Region 3 environmental justice efforts. Additionally, the Ivy City rail yard produces approximately three tons of fine PM annually. A good portion of these emissions come from regional commuter trains that idle at the yard the majority of the day and the District has no control over them nor any ability to collaboratively finance cleaner vehicles. In order to ameliorate this issue, stricter rail emission standards are necessary.

Wisconsin's ozone nonattainment areas in Milwaukee, Sheboygan and Kenosha (Chicago area) are located directly downwind of some of the largest rail yards and intermodal hubs in the country. Recent modeling by the Lake Michigan Air Directors Consortium indicates that rail emissions contribute almost 3 parts per billion to the controlling monitors located in Wisconsin's ozone nonattainment areas. Given that the overwhelming majority of locomotive emissions impacting air quality in Wisconsin's nonattainment areas occur outside the state boundary, prompt federal action to address this sector is critical to achieving meaningful air quality improvement.

As of 2023, PM and NO_x emissions from locomotives are higher than from trucks carrying an equivalent amount of freight in California, based on CARB's [Truck vs. Train analysis](#). Truck emissions will eventually reach zero emissions due to future CARB regulation. Locomotives need to reduce their emissions as well or they will be the dirtier way to transport freight. As stated in CARB's [2022 State SIP Strategy](#), locomotive emissions are projected to contribute 14 percent to the state's freight diesel emissions NO_x inventory and 16 percent to the state's freight diesel PM_{2.5} inventory in 2030. As of 2022, locomotives are projected to produce over 640 tons per year of PM_{2.5} and over 29,800 tons per year of NO_x in California.

In pursuit of emission reduction technology the Minnesota Pollution Control Agency (MPCA) has funded idle reduction projects for five locomotives in Minnesota. These technologies have proven incredibly effective at lowering pollutants and are among the most cost-effective voluntary diesel emissions reductions projects the state has found. Since rail was the primary means of moving freight until after World War II, freight rail infrastructure in Minnesota was established at a time when racist and classist decision-making was common and before most city zoning or air regulations were enacted. As a result, rail lines, rail yards and heavy industry that rely on rail are often in modern-day areas of concern for environmental justice and in close proximity to residences. Rail's overall fuel efficiency when moving freight may be better than trucking, but low emissions per mile are of no consequence to those living near busy tracks or a yard where locomotives work and idle. A survey of areas in Minnesota where air pollutant concentrations model over health benchmarks at the property fenceline, creating potential health risks, flags 15 railyards. Eleven of these 15 are in areas of concern for environmental justice and three more are within a mile of an area of concern for environmental justice. Six yards contribute to air pollution concentrations over health benchmarks in the neighborhoods beyond the fenceline. The largest source of air emissions and health risks from air pollution in Minnesota is transportation, encompassing traffic on and

off the roads, rails, rivers, lakes and skies. In the Twin Cities urban core, a map of facilities with air permits shows long curves and diagonals that do not match the street grid system or follow the Mississippi River. Instead, they follow the short line railroads that bring supplies and ship out products. These two sources of pollution continue to support each other and in doing so provide a “double whammy” of air pollution for the people who live near them. Minnesota is eighth in the nation for rail miles and 25 percent of freight weight in the state is carried by rail. Minnesota’s main economic drivers have been, and are expected to remain, the freight-intensive mining, manufacturing and agricultural industries. Locomotive emissions contribute to potential health impacts near tracks and yards and in older industrial areas along short line rail in urban centers. [Minnesota’s state rail plan](#), MPCA’s “Air We Breathe” reports from [2021](#) and [2023](#) and [“MNRISK: Minnesota statewide screening of health risks from air pollution”](#) provide more information.

Under California Assembly Bill 617 (AB 617), local air districts in the state are working with community members, CARB and other stakeholders to identify communities most impacted by air pollution and reduce human exposures and health impacts in those areas. In recent years, the Bay Area Air Quality Management District (BAAQMD) in San Francisco has been working with community steering committees (CSCs) to reduce disparities in air pollution exposures in two communities: West Oakland and Richmond-North Richmond-San Pablo (R-NR-SP). To support the development of community emissions reduction programs Bay Area has worked with CSCs and other partners to perform technical assessments designed to identify sources that are significant contributors to air pollution exposures in those communities. In both West Oakland and R-NR-SP, community residents live in close proximity to rail lines, rail yards and other facilities that rely on locomotives to move goods. The technical assessments for these communities have included analyses of the air quality impacts of locomotive emissions. These assessments indicate that locomotives are a key driver of diesel particulate matter concentrations and cancer risk in both communities, accounting on average for 20 percent of the population-weighted cancer risk attributed to local sources, with modeled risk increments exceeding 100 per million in some neighborhoods adjacent to rail yards. More detailed information on the impact of locomotive emissions on these environmental justice communities is provided in this [white paper prepared by Bay Area staff](#).

Most rail yards in the Puget Sound region are in, on or near port operations and located in areas adjacent to overburdened communities that score 7 or higher on [Washington’s Environmental and Health Disparities Map](#). According to the 2016 Puget Sound Maritime Emission Inventory total locomotive annual emissions were 29.5 tons of PM_{2.5}, 1,099 tons of NO_x and 77,366 tons of CO₂. Approximately half of these emissions come from switcher locomotives that operate continuously near communities that already have high exposure from other diesel sources. This does not include emissions from other rail equipment. Even though switcher locomotives are not the largest source of diesel particulate emissions, they continuously expose overburdened communities to toxic diesel pollution. The Puget Sound Clean Air Agency (PSCAA) is pursuing locomotive replacement and electrification projects and acknowledges the difficulty of finding funding for switcher locomotives in the Puget Sound region. Most locomotives are owned by entities that are not eligible to apply directly for grant funding except for Tacoma Rail, a publicly owned Class 3 rail. PSCAA assisted Tacoma Rail in preparing a successful grant application for CMAQ funds to purchase one electric locomotive and Tacoma Rail is pursuing the Federal Rail Administration CRISI grant to fund a second. PSCAA founded the Western Clean Rail Collaborative, a coalition of government agencies focused on helping rail operators meet their air quality and climate goals. The Collaborative is working to identify funding opportunities to enable rail operators to reduce their emissions, especially by adopting zero-emission technologies. The Collaborative is also working to increase access to grant funding by advocating for more rail-focused funding, identifying and communicating barriers to reducing rail emissions and partnering with rail operators to secure and manage grant funds. However, PSCAA says that even if it

is successful in securing funding for several projects, it will not be able reduce emissions from locomotives to the extent necessary to reach its climate and air quality goals without regulatory support.

Conclusion

NACAA urges EPA to set Phase 3 CO₂ standards that, at a minimum, reflect ACT ZEV sales percentages through MY 2032, but with more stringent standards for transit and school buses and refuse and concrete trucks; eliminate the advanced technology multipliers after MY 2026; and end the Phase 2 credit exchange between vocational vehicles and tractors. A third phase of federal emission standards for heavy-duty trucks will yield important reductions in GHG emissions. By increasing the performance of heavy-duty ZEVs to meet CO₂ emissions standards the rule will also deliver co-benefits in terms of reductions of criteria and toxic air pollutants. Reductions in all of these pollutants will benefit every area of the country, assisting them in achieving their air quality, climate protection and environmental justice goals.

In addition, NACAA supports EPA's proposed revision of its locomotive regulations as a modest but important first step toward fulfilling a far larger responsibility. It is critical that EPA take timely action to set federal standards 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.

NACAA appreciates the opportunity to comment on this very important and welcome action and thanks EPA in advance for considering the association's recommendations. If you have questions, please contact either of us or Nancy Kruger, Deputy Director of NACAA.

Sincerely,



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