

May 16, 2022

Environmental Protection Agency
1200 Pennsylvania Avenue NW
Washington, DC 20460.
Docket EPA–HQ–OAR–2019– 0055

Re: Control of Air Pollution From New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards

Submitted via federalregister.gov

Thank you for providing the opportunity to comment on the Environmental Protection Agency’s proposed rule, “Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards.” While the proposal is a good start, it can and should go further to lower greenhouse gas (GHG) emissions and nitrogen oxides (NOx). Such reductions are imperative to lower dangerous tailpipe emissions, to increase adoption of zero-emission vehicles (ZEVs) and to achieve President Biden’s goal of reducing greenhouse gas emissions by 50-52% compared to 2005 levels by 2030.¹ Heavy-duty vehicles deliver consumer goods to warehouses and homes across the country. As e-commerce expands, consumer reliance on these trucks will grow. Such reliance has hidden costs in the form of harmful air pollution to consumers making purchases, and to communities living near freight routes.

Founded in 1936, [Consumer Reports](#) (CR) is an independent, nonprofit and nonpartisan organization that works with consumers to create a fair and just marketplace. Known for its rigorous testing and ratings of products, CR also advocates for laws and corporate practices that are beneficial for consumers. CR is dedicated to amplifying the voices of consumers to promote safety, digital rights, financial fairness, and sustainability. The organization surveys millions of Americans every year, reports extensively on the challenges and opportunities facing today's consumers, and provides ad-free content and tools to 6 million members across the United States.

I. Executive Summary.

CR supports a strong federal heavy-duty engine and vehicle (HDV) standard for NOx and GHG. CR is providing detailed comments in support of the following positions on the issues:

1. As written, the proposed rule assumes a ZEV sales share of only 1.5% in key market segments in 2027.² This is lower than the current requirements of state level policies, which would result in a market penetration of at least 3% by 2027³, and underestimates

¹ White House, *Fact Sheet: Vice President Harris Announces Actions to Accelerate Clean Transit, Buses, School Buses and Trucks*, (March 07, 2022). Available at: <https://www.whitehouse.gov/briefing-room/statements-releases/2022/03/07/fact-sheet-vice-president-harris-announces-actions-to-accelerate-clean-transit-buses-school-buses-and-trucks/>

² 87 F.R. 17414, 17458.

³ Claire Buysse, Sara Kelly Ray Minjares, *Racing to Zero: The Ambition We Need for Zero-Emission Heavy-Duty Vehicles in the United States*, International Council on Clean Transportation (April 8, 2022). Available at: <https://theicct.org/racing-to-zero-hdv-us-apr22/>

current market trends. The EPA should establish standards that not only assume a higher market share of ZEVs, but that also push the market towards increased electrification. The Clean Air Act (CAA) is intended to be technology forcing⁴ and the EPA should rely on this authority to encourage faster adoption of ZEV technology.

2. For the NOx emission standards, EPA is proposing two options, Option 1 and Option 2. EPA's obligations under the CAA to set standards that reflect the greatest degree of emission reduction achievable⁵ require the agency to adopt Option 1. Compared to Option 2, Option 1 sets stronger NOx emission standards and sets more stringent useful life and warranty periods and is economically and technologically feasible.
 - a. EPA should ensure that credits do not limit the effectiveness of the NOx standards. To this end, EPA should eliminate all multipliers, lower family emission caps, and eliminate or minimize the use of credits for ZEVs.
3. EPA should set GHG gas standards that more accurately reflect the current and future heavy-duty ZEV market, and that drive technology towards zero emission heavy-duty vehicles.
 - a. EPA should eliminate credit multipliers for ZEVs to ensure incentives do not limit the effectiveness of the rule.

II. Introduction

CR commends EPA for updating long overdue emission standards for heavy-duty vehicles. Heavy-duty vehicles transport consumer goods all across the country, delivering goods to warehouses and directly to homes. The growth of e-commerce and the promise of fast delivery times will likely increase consumer reliance on heavy-duty vehicles. The U.S. Energy Information Administration estimates a 55% growth in total medium- and heavy-duty vehicle miles traveled between 2019 and 2050.⁶ A [recent investigative article by CR](#) highlights the impacts of expanding e-commerce on communities living near warehouses. These impacts include increased traffic and pollution coming from heavy-duty vehicles delivering goods to the warehouses.⁷ The expansion of the heavy-duty industry to meet consumers' needs should not come at the expense of communities living near trucking routes, nor at the expense of the health of consumers making purchases.

As the EPA states, heavy-duty engines will continue to be one of the largest “contributors to mobile source NOx emissions nationwide in the future.”⁸ While making up only 5% of on-road vehicles, and 10% of vehicle miles traveled, EPA estimates that NOx emissions from heavy-duty

⁴ 42 U.S.C. § 7521.

⁵ The CAA requires the Administrator to set standards that “reflect the greatest degree of emission reduction achievable through the application of a technology which the Administrator determines will be available for the model year to which such standards apply. 43 U.S.C. § 7521(a)(1).

⁶ NREL, *Decarbonizing Medium- and Heavy-Duty On-Road Vehicles: Zero-Emission Vehicles Cost Analysis*, (March 2022). Available at: <https://www.nrel.gov/docs/fy22osti/82081.pdf>

⁷ Kaveh Waddell, *When Amazon Moves In These Communities Pay the Price*, Consumer Reports (December 9, 2021). Available at: <https://www.consumerreports.org/corporate-accountability/when-amazon-expands-these-communities-pay-the-price-a2554249208/>

⁸ Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards. 87 Fed. Reg. 1741, 17418 (March 28, 2022). Available at: <https://www.govinfo.gov/content/pkg/FR-2022-03-28/pdf/2022-04934.pdf>

vehicles will represent 32% of the mobile source NOx emissions in calendar year 2045, and that heavy-duty engines would represent 89% of the on-road NOx inventory in calendar year 2045.”⁹ NOx are precursors to fine particulate matter (PM2.5) and ground-level ozone. Long-term exposure to ozone and PM2.5 increase the risk of premature death from respiratory and cardiovascular diseases. Exposure to PM2.5 is also linked with increased incidences of childhood asthma.¹⁰ These health impacts more significantly affect the estimated 72 million people living within 200 meters of a truck freight route. Communities living near these routes are disproportionately people of color and those with lower incomes.¹¹ A recent study conducted by the Union of Concerned Scientists showed that Asian-American, Black, and Latinx communities face, respectively, 34%, 24%, and 23% higher exposures to diesel pollution compared to their white counterparts.¹² Stringent NOx emission standards are vital to reducing these adverse health impacts and to addressing historic environmental inequities. EPA must adopt Option 1 of the proposed rule; Option 2 simply does not go far enough.

Heavy-duty vehicles are also a significant source of GHG emissions. Despite accounting for only 10% of total U.S. vehicle-miles traveled,¹³ medium- and heavy-duty trucks account for 23% of the total GHG emissions from transportation.¹⁴ In 2019, according to the EPA, medium and heavy-duty vehicles emitted 456.6 million metric tons of carbon dioxide (CO2) in the United States.¹⁵ Stringent GHG emission standards are needed to achieve president Biden’s goal to reduce greenhouse gas emissions by 50-52% compared to 2005 levels by 2030.¹⁶

III. The proposed rule does not do enough to support adoption of zero-emission heavy-duty vehicles.

The proposed rule significantly underestimates the future market penetration of ZEVs, and overlooks existing and reasonably foreseeable future ZEV technology. In doing so, the rule fails to set sufficiently stringent standards, and fails to encourage the adoption of ZEVs. As such, the EPA is not meeting its mandate under the Clean Air Act (CAA).

⁹ *Id.*; Bureau of Transportation Statistics, *U.S. Vehicle Miles*, Available at: <https://www.bts.gov/content/us-vehicle-miles>.

¹⁰ American Lung Association, *Health Impact of Air Pollution*, (2022). Available at: <https://www.lung.org/research/sota/health-risks>.

¹¹ 87 F.R. 17414, 17418.

¹² Union of Concerned Scientists, *Inequitable Exposure to Air Pollution from Vehicles in California*, (January 28, 2019). Available at: <https://www.ucsusa.org/resources/inequitable-exposure-air-pollution-vehicles-california-2019>.

¹³ Bureau of Transportation Statistics, *U.S. Vehicle Miles*, Available at: <https://www.bts.gov/content/us-vehicle-miles>

¹⁴ EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2019* (EPA–430–R–21–005, published April 2021). Accessed at: <https://www.epa.gov/ghgemissions/inventory-usgreenhouse-gas-emissions-and-sinks>.

¹⁵ Congressional Research Service, *Heavy-Duty Vehicles, Air Pollution, and Climate Change*, (February 11, 2022). Available at:

<https://crsreports.congress.gov/product/pdf/IF/IF12043#:~:text=Further%2C%20according%20to%20EPA's%20Inventory.from%20the%20U.S.%20transportation%20sector>).

¹⁶ The White House, *Fact Sheet: President Biden Announces Steps to Drive American Leadership Forward on Clean Cars and Trucks*, (August 5, 2021). Available at:

<https://www.whitehouse.gov/briefing-room/statements-releases/2021/08/05/fact-sheet-president-biden-announces-steps-to-drive-american-leadership-forward-on-clean-cars-and-trucks/#:~:text=Together%2C%20today's%20announcements%20would%20put.gas%20emission%20reductions%20below%202005>.

a. Zero-emission heavy-duty vehicles are technologically feasible.

Section 202(a) of the CAA requires the Administrator to prescribe “standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.”¹⁷ Both NO_x and GHG have been found to endanger public health and welfare. Section 202(a)(3)(A) of the CAA further requires standards for emissions of NO_x, particulate matter, hydrocarbon and carbon monoxide to “reflect the greatest degree of emission reduction achievable through the application of a technology which the Administrator determines will be available for the model year to which such standards apply, given appropriate consideration to cost, energy, and safety factors associated with the application of such technology.”¹⁸ This language authorizes the Administrator to set performance levels that, “while not achievable immediately, are demonstrated to be achievable in the future based on information available today.”¹⁹ Zero-emission technology for many classes of heavy-duty vehicles currently exists,²⁰ and ZEV technology is rapidly advancing.²¹ By underestimating market penetration of ZEVs, the current proposed standards do not account for this technology, thus do not represent the “greatest degree of emission reduction achievable,” and thus do not meet EPA’s obligations under the CAA.

Existing ZEV technology can meet the needs of most local and regional operations. Studies show that most straight trucks,²² in particular those used for local deliveries, do not travel more than 100 miles per day.²³ There are a number of zero-emission trucks and buses commercially available today that already exceed 100 miles in range. Moreover, there are several battery and fuel cell models being demonstrated that can exceed 200 miles per day.²⁴ With a number of companies such as Amazon, FedEx, and UPS committing to purchasing electric delivery vehicles, the possibility for a significant increase in adoption of ZEVs for this class is promising.²⁵ The ZEV outlook for other classes of heavy-duty vehicles is also promising.

¹⁷ 43 U.S.C. § 7521(a)(1).

¹⁸ 43 U.S.C. § 7521(a)(3)(A).

¹⁹ EPA, Setting Emission Standards Based on Technology Performance. Available at:

<https://www.epa.gov/clean-air-act-overview/setting-emissions-standards-based-technology-performance>

²⁰ CAI- Start, *Zero-Emission Technology Inventory*. Available at:

<https://globaldrivetozero.org/tools/zero-emission-technology-inventory/>

²¹ NREL, *Decarbonizing Medium- and Heavy-Duty On-Road Vehicles: Zero-Emission Vehicles Cost Analysis*,

(March 2022). Available at: <https://www.nrel.gov/docs/fy22osti/82081.pdf>

²² Trucks designed with all axles on a single chassis

²³ California Air Resources Board, *Staff Report: Initial Statement of Reasons for the Advanced Clean Trucks Regulation*, (October 22, 2019). Available at:

<https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2019/act2019/isor.pdf>

²⁴ *Id.*

²⁵ Environmental Defense Fund, *Ready for Delivery*, (March 6, 2020) Available at:

http://blogs.edf.org/energyexchange/2020/03/06/ready-for-delivery-electric-package-trucks/?_gl=1*khvyat*_ga*NDQ2MzcxMDgwLjE2NDU2MzQyMjg.*_ga_2B3856Y90W*MTY1MTE2OTA2MC4xLjEuMTY1MTE2OTA4NC4zNg.*_ga_WE3BPROKW0*MTY1MTE2OTA2MC4xMC4xLjE2NTE2NjkwODQuMzY.*_ga_Q5CTTQBJD8*MTY1MTE2OTA2MC4xLjEuMTY1MTE2OTA4NC4zNg.*_gcl_aw*R0NMLjE2NDYzMiYzNzYuQ2owS0NRaUE2NEdSQmhDWkFSSXNBSE9McmIMMjNtX3ZrVEI5X25LZmZodWF0ZTNHOmRDZmNvLUl1ZT1RuU0NmaG11clpzdEIDMi1BVFPBY2FBb3dSRUFMd193Y0I.*_gcl_dc*R0NMLjE2NDYzMiYzNzYuQ2owS0NRaUE2NEdSQmhDWkFSSXNBSE9McmIMMjNtX3ZrVEI5X25LZmZodWF0ZTNHOmRDZmNvLUl1ZT1RuU0NmaG11clpzdE

Manufacturers are planning to commercialize regional-haul ZEV trucks in the coming years.²⁶ Finally, as seen in CALStart’s “Drive to Zero” zero-emission technology inventory, a number of class 8 models, including battery-electric vehicles (BEV) and fuel-cell-electric vehicles (FCEV) that can travel over 300 miles on a single charge will be available in the coming model years.²⁷

State policies such as California’s Advanced Clean Trucks (ACT) establish zero-emission sales requirements for heavy-duty vehicles.²⁸ These regulations will further push the market and technology towards electrification as manufacturers work to comply with the regulation.

EPA must meet its obligations under the CAA by setting standards that reflect “the greatest emission reduction achievable.” To do so, standards must accurately reflect both current and future technology. Moreover, standards should encourage growth of this technology in the future.

b. EPA’s estimate of the market penetration rate overlooks current state actions

As written, the proposed rule assumes a ZEV sales share of only 1.5% in key market segments in 2027.²⁹ As discussed below, this assumption is lower than requirements in state level policies, and underestimates market trends. The EPA should establish standards that not only assume a higher market share of ZEVs, but that also push the market towards increased electrification.

On June 25, 2020, California adopted ACT which requires increasing percentages of heavy-duty trucks sales to be ZEVs starting in 2024. By 2035 the rule requires manufacturers to sell 55% Class 2b- 3 ZEV, 75% Class 4-8 ZEVs, and 40% class 7-8 ZEVs.³⁰ Since California passed ACT, six additional states have adopted the regulation.³¹ In total these states represent around one-fifth of heavy-duty trucks nationwide.³² In addition, 17 states and the District of Columbia signed a memorandum of understanding (MOU) targeting 30% of all new trucks and buses by 2030.³³ These states(and D.C.) represent 36.5% of heavy-duty vehicles nationwide.³⁴ Combined, these state-level policies alone will result in a 3% market share of ZEVs by 2027 and an 8% market share by 2030.³⁵ EPA’s baseline calculations do not account for the passage of ACT in states

[DMi1BVFPBY2FBb3dSRUFMd193Y0I](https://www.amazon.com/climate-pledge-fund); Amazon, *Climate Pledge Fund Investments*, Available at: <https://sustainability.aboutamazon.com/about/the-climate-pledge/the-climate-pledge-fund>

²⁶ Seth Clevenger. (2019, Dec. 6). The Dawn of Electric Trucks, Transport Topics. See <https://www.ttnews.com/articles/dawn-electric-trucks>

²⁷ CALStart, *Zero-Emission Technology Inventory*. Available at: <https://globaldrivetozero.org/tools/zero-emission-technology-inventory/>

²⁸ 13 C.C.R. § 1963 *et seq.*

²⁹ 87 F.R. 17414, 17458.

³⁰ 13 C.C.R. § 1963.1.

³¹ Recently, Connecticut passed legislation that will allow the state to adopt ACT.

³² Claire Buysse, Sara Kelly Ray Minjares, *Racing to Zero: The Ambition We Need for Zero-Emission Heavy-Duty Vehicles in the United States*, International Council on Clean Transportation (April 8, 2022). Available at: <https://theicct.org/racing-to-zero-hdv-us-apr22/>; This number includes the projection that 2% of buses nationwide will be zero-emission by 2030 as a result of California’s Innovative Clean Transit Rule.

³³ Multistate medium and Heavy-Duty Zero Emission Vehicle Memorandum of Understanding. Available at: <https://www.nescaum.org/documents/mhdv-zev-mou-20220329.pdf/>

³⁴ Claire Buysse, Sara Kelly Ray Minjares, *Racing to Zero: The Ambition We Need for Zero-Emission Heavy-Duty Vehicles in the United States*, International Council on Clean Transportation (April 8, 2022). Available at: <https://theicct.org/racing-to-zero-hdv-us-apr22/>

³⁵ *Id.*

outside California, and do not take into consideration the MOU. At the *very least*, EPA’s baseline should reflect state regulations and policies that require the adoption of ZEV. However, even these percentages likely underestimate market trends. In fact, a study by the National Renewable Energy Lab (NREL), estimates that 42% of heavy-duty vehicle sales will be zero emission by 2030.³⁶

Standards for both NOx and GHG should reflect a higher ZEV market penetration, more than 3% in 2027 and increasing to more than 8% by 2030, and should work with state policies and regulations to push the heavy-duty market on a faster trajectory towards zero emissions.

IV. EPA must at least adopt Option 1 for NOx emission standards.

As stated, CR supports EPA’s efforts to reduce NOx emissions from heavy-duty vehicles. Because it is technologically and economically feasible, EPA must adopt Option 1.³⁷

As stated above, section 202(a)(1) of the CAA requires the Administrator to “prescribe standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare.”³⁸ Section 202(a)(3) of the CAA further states that the standards prescribed under paragraph (1) applicable to emissions of hydrocarbons, carbon monoxide, oxides of nitrogen, and particulate matter from classes or categories of heavy-duty vehicles or engines must “reflect the greatest degree of emission reduction achievable through the application of technology which the Administrator determines will be available for the model year to which such standards apply, giving appropriate consideration to cost, energy, and safety factors.”³⁹

As proven by EPA’s own regulatory analysis, as well as California Air Resource Board (CARB) studies, Option 1 is both technologically and economically feasible.⁴⁰ Compared to Option 2, Option 1 sets more stringent NOx emissions standards, and requires longer useful life and warranty periods. Option 1 will result in a 90% reduction in NOx emissions by 2030, whereas Option 2 will only result in a 75% reduction in emission standards by 2030.⁴¹ As such, Option 1 reflects “the greatest degree of emission reduction achievable... given appropriate consideration to cost, energy and safety factors.” Moreover, the benefits of Option 1 more significantly

³⁶ NREL, *Decarbonizing Medium- and Heavy-Duty On-Road Vehicles: Zero-Emission Vehicles Cost Analysis*, (March 2022). Available at: <https://www.nrel.gov/docs/fy22osti/82081.pdf>.

³⁷ California Air Resources Board, *Facts about the Low NOx Heavy-Duty Omnibus Regulation*. Available at: https://ww2.arb.ca.gov/sites/default/files/classic/msprog/hdlownox/files/HD_NOx_Omnibus_Fact_Sheet.pdf

³⁸ 42 U.S.C. § 7521(a)(1)

³⁹ 42 U.S.C. § 7251(a)(3)

⁴⁰ California Air Resources Board, *California Air Resources Board Staff Current Assessment of the Technical Feasibility of Lower NOx Standards and Associated Test Procedures for 2022 and Subsequent Model Year Medium-Duty and Heavy-Duty Diesel Engines*, (April 18, 2019). Available at: https://ww2.arb.ca.gov/sites/default/files/classic/msprog/hdlownox/white_paper_04182019a.pdf

⁴¹ ICCT, *ICCT Proposal on EPA’s Proposed Heavy-Duty Engine and Vehicle Standards*. Available at: https://theicct.org/wp-content/uploads/2022/04/public-webinar_10May2022.pdf

outweigh the costs than is the case with proposed Option 2.⁴² As such, Option 2 simply does not meet EPA's obligations under the CAA.

- a. The proposed low load and idle standards and test methods should be included in the final rule.

EPA is proposing to add a new low-load cycle (LLC) standard for CI engines. CR supports the addition of the LLC standard, and encourages EPA to extend this test to SI engines. The proposed LLC standard is needed to capture NOx emissions in urban areas where heavy duty vehicles operate in stop-and-start, and other low-load conditions.

Studies by both CARB and ICCT show that NOx emissions in urban driving settings exceed emission rates certified by manufacturers.⁴³ As the ICCT study states “a disproportionate amount of NOx emissions from heavy-duty [diesel] vehicles is emitted during the low-speed operation characteristic of urban driving,” and that “vehicle operation at speeds of less than 35 mph results in NOx emissions of more than five times the certification limit for the average heavy-duty vehicle in the study.”⁴⁴ For this reason the LLC is necessary to ensure that NOx emission standards apply not only to driving conditions seen on highways, but also to emissions that occur during cold start warm-up, idling, low-load driving, and transient operations. Such a requirement is needed for both SI and CI engines. EPA must adopt the Option 1 LLC standards that reflect CARB's Heavy-Duty Omnibus Rule.⁴⁵ Compared to Option 2, Option 1 reflects the greatest degree of emission reduction achievable, as required by the CAA.

EPA is also proposing to include a voluntary idle standard that aligns with CARB's proposed idle certification standards. Although a number of states, including California, have laws that prevent trucks from idling for extended periods of time,⁴⁶ no such rule exists at the federal level. Idling trucks emit an estimated 0.37 tons of NOx per year per vehicle,⁴⁷ and increase public exposure to diesel particulate matter and other tailpipe emissions.⁴⁸ For this reason, CR supports the inclusion of these standards in the final rule, and urges EPA to make this standard mandatory rather than voluntary.

⁴² 87 F.R. 17414, 17415-17416.

⁴³ Thomas Durbin, *Certification an in-use compliance testing for heavy-duty diesel engines to understand high in-use NOx emissions: 2018 final report*, California Air Resources Board (November 2018). Available at: https://www.arb.ca.gov/research/single-project.php?row_id=65254

⁴⁴ Huzeifa Badshah, Francisco Posada, Rachel Muncrief, *Current State of NOx Emissions from in-use heavy duty diesel vehicles in the United States*, International Council on Clean Transportation (November 2019). Available at: https://theicct.org/sites/default/files/publications/NOx_Emissions_In_Use_HDV_US_20191125.pdf

⁴⁵ California Air Resources Board, *California Air Resources Board Staff Current Assessment of the Technical Feasibility of Lower NOx Standards and Associated Test Procedures for 2022 and Subsequent Model Year Medium-Duty and Heavy-Duty Diesel Engines*, (April 18, 2019). Available at: https://ww2.arb.ca.gov/sites/default/files/classic/msprog/hdldownox/white_paper_04182019a.pdf

⁴⁶ 13 C.C.R. § 2485; United States EPA, *Compilation of State, County, and Local Anti-Idling Regulations*, (April 2006). Available at: <https://www.epa.gov/sites/default/files/documents/CompilationofStateIdlingRegulations.pdf>

⁴⁷ Maryland Department of Environment, *Facts about Idle Reduction Technology*. Available at: <https://mde.maryland.gov/programs/Air/MobileSources/Documents/Idling%20Technology%20Fact%20Sheet%20Final.pdf>

⁴⁸ Hannu Jääskeläinen, *Idling Emissions*, (April 2017). Available at: https://dieselnet.com/tech/emissions_idle.php

- b. The proposed extended useful life and emission related warranty should be included in the final rule.

Under the CAA, manufacturers must only certify emission standards for “useful life” of the vehicle and engine.⁴⁹ The CAA also directs the EPA to prescribe warranty periods for heavy-duty engines, and requires manufacturers to provide an emissions warranty.⁵⁰ The current designated useful life for all trucks is only 10 years and between 110,000 and 435,000 miles, depending on class. Warranties cover only 5 years of the vehicle’s life. In contrast, most trucks remain on the road between 20 and 30 years and between 550,000 and 1.2 million miles, depending on class.⁵¹ As a result, many trucks spend more than a decade on the road while not meeting emission standards.

EPA is proposing to increase the useful life of heavy-duty vehicles. Under Option 1 for light heavy-duty engines, EPA is proposing to increase the useful life from 10 years or 110,000 miles to 15 years or 250,000 miles. For medium heavy-duty engines EPA is proposing to increase the useful life from 10 years or 185,000 to 15 years or 325,000 miles. For heavy heavy-duty engines, EPA is proposing to increase the useful life from 10 years or 435,000 miles to 13 years or 800,000 miles. Under option 2, EPA is not proposing to extend the useful life years for any class of engine, and is proposing lower mileage increases.

The proposed extended useful life and warranty periods are necessary to ensure that heavy-duty certified emissions levels are achieved in real-world settings. EPA must adopt the proposed Option 1 useful life and warranty periods. Option 2 does not go far enough to capture the real-world longevity of heavy-duty vehicles.

- c. EPA should eliminate credits and multipliers that limit the effectiveness of the proposed rule.

In the rule, EPA is proposing to continue to use averaging, banking, and trading (ABT) of credits generated against heavy-duty engine criteria pollutant standards; provide incentives for early adoption of technologies to meet the standards; and allow manufacturers to generate NOx emission credits for hybrid electric (HEV), battery-electric (BEV), and fuel-cell-electric (FCEV) vehicles.⁵² While credits can be useful to encourage early adoption of technology, and to encourage adoption of low- or zero-emission technologies, they can also serve to disincentivize further improvements to internal combustion engine technology by allowing manufacturers to average out high-emitting internal-combustion engines (ICE) with ZEV and other credits.⁵³ CR supports EPA’s proposal to generate credits for early adoption of technologies prior to MY 2027. However, NOx credits from HEV, BEVs and FCEVs will ultimately limit the effectiveness of the proposed rule by generating too many credits. Manufacturers will be able to

⁴⁹ 42 U.S.C. § 7521(a)(8).

⁵⁰ 42 U.S.C § 7541(a).

⁵¹ Id.

⁵² 87 F.R. 17426.

⁵³ Sara Kelly and Ben Sharpe, *Impacts of crediting zero-emission vehicles in the upcoming federal regulation for criteria pollutants from heavy-duty engines and vehicles*, International Counsel on Clean Transportation, International Counsel on Clean Transportation, (January 2022). Available at: <https://theicct.org/wp-content/uploads/2022/02/us-ze-hdvs-pollutant-credits-feb22.pdf>.

sell non-compliant polluting vehicles for many years and would lack incentive to adopt improved ICE technology. To prevent this outcome, EPA should not offer ZEV credits after 2027. Instead, EPA should set stringent standards that would drive adoption of the EPA HDV rule. However, if EPA ultimately decides to finalize the rule allowing ZEVs to generate NOx credits, EPA should not include any multipliers and should limit the use of NOx credits by sunseting their use after five years or less, by limiting credit life to five years, and by lowering the family emission limit (FEL) cap.

V. EPA should adopt more stringent GHG standards.

Under the CAA, the Administrator is authorized to prescribe standards applicable to the “emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines... which in his judgment cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare.”⁵⁴ The EPA has issued numerous findings showing that GHGs are reasonably anticipated to both endanger public health and to endanger public welfare.⁵⁵

Heavy-duty vehicles account for 23% of transportation-related GHG emissions.⁵⁶ The EPA is proposing to update existing heavy-duty GHG standards to better reflect the increase in electrification beyond what was anticipated when the GHG standards were initially set. Because the current standards do not accurately capture electrification, manufacturers are able to produce ICE vehicles without installing any GHG emission reducing technologies.⁵⁷

However, by continuing to underestimate the ZEV market, the proposed standards do little to address the issue, nor do they help set the U.S. on a path to achieve President Biden’s goal of reducing greenhouse gas emissions by 50-52% compared to 2005 levels by 2030.⁵⁸

a. The EPA underestimates the ZEV market.

As the EPA notes, it is updating current GHG standards because the previous standards underestimated the impacts of the ZEV market.⁵⁹ While the updates are needed, the current proposal simply repeats EPA’s error of underestimating the ZEV market, and subsequently undermines the effectiveness of the GHG standards.

⁵⁴ 42 U.S.C. § 7251(a)(1).

⁵⁵ Endangerment and Cause or Contribute Findings for Greenhouse Gasses Under Section 202(a) of the Clean Air Act; Final Rule 74 F.R. 66495 (January 14, 2010). Available at: <https://www.govinfo.gov/content/pkg/FR-2009-12-15/pdf/E9-29537.pdf>.

⁵⁶ EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2020*, EPA–430–R–22–003 (April 14, 2022).

⁵⁷ 87 F.R. 17440.

⁵⁸ White House, *Fact Sheet: Vice President Harris Announces Actions to Accelerate Clean Transit, Buses, School Buses and Trucks*, (March 07, 2022). Available at: <https://www.whitehouse.gov/briefing-room/statements-releases/2022/03/07/fact-sheet-vice-president-harris-announces-actions-to-accelerate-clean-transit-buses-school-buses-and-trucks/>

⁵⁹ 87 F.R. 17594.

As discussed in detail in Section I, the EPA's baseline assumption of 1.5% ZEV market penetration underestimates market trends. As a result, more ZEVs will be on the road than predicted by the rule, and manufacturers will have to do less to reduce GHG emission from ICEs. Therefore, the proposed standards will do little to reduce GHG emissions.

EPA should set GHG standards that accurately reflect ZEV market penetration as a result of state laws and policies. Furthermore, the EPA should do more, and set stringent standards that will drive further investment in clean vehicle technologies. Doing so is necessary to set the U.S. on track for achieving the President's goal of 50-52% net economy-wide greenhouse gas emission reductions below 2005 levels in 2030.

b. EPA should eliminate credits and multipliers that undermine the effectiveness of the rule.

EPA is proposing to adjust its credit system for heavy-duty vehicles to reduce the number of incentive credits produced by electric vehicle manufacturers in MY 2024-2027. We agree with the need to reduce these credits. Currently manufacturers can earn large advanced technology credit multipliers for CO₂ emissions.⁶⁰ Such multipliers were intended to encourage early action and technological innovation but have ultimately reduced the stringency of the existing GHG standards, largely due to the unforeseen growth in the HDV ZEV market.⁶¹ Any adjustments to this program should eliminate credits to prevent this outcome. A credit program should not result in backsliding of emissions reductions expected from ICEs.

EPA is proposing three approaches to reduce the number of incentive credits: (1) excluding EVs certified to meet California's ACT Rule from earning federal credits; (2) establishing an advanced technology cap; and (3) establishing a transitional credit cap. We agree with EPA's proposal to exclude EVs built to satisfy California's ACT requirement from the federal advanced technology credit incentive program. However, this cannot be the only adjustment to the program as it would still leave in place significant multipliers that could lead to backsliding. EPA's advanced technology cap proposal does little to address the issue of backsliding: It leaves in place multipliers that are too high, and, when the cap is reached, still allows for the accrual of credits. As with the current programs, this will lead to too many credits and hamper the effectiveness of the GHG standard. EPA's transitional credit cap proposal at least reduces the multipliers over time, and ultimately phases out multipliers. CR agrees that phasing out these multipliers is important. EPA should phase out these multipliers by 2024 or as soon as possible. While multipliers can be seen as a trade-off for encouraging early innovation and adoption of new technologies, this trade-off cannot come at the cost of an ineffective rule.

VI. Conclusion

CR is encouraged to see EPA working towards reducing tailpipe emissions that are dangerous to public health and the environment. However, given the outsized impact of these vehicles on air

⁶⁰ 87 F.R. 17603.

⁶¹ Id.

quality, EPA should go further to reduce emissions and to meet its obligations under the CAA to establish emission standards that “reflect the greatest degree of emission reduction achievable through the application of technology.”

Thank you for taking these comments into consideration.

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