



July 5, 2023

Michael Regan, Administrator  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue NW  
Washington, D.C. 20460

Re: Docket ID No. EPA–HQ–OAR–2022–0829, *Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles*

Dear Administrator Regan:

The Northeast States for Coordinated Air Use Management (NESCAUM) and the Ozone Transport Commission (OTC) respectfully submit these comments on the Notice of Proposed Rulemaking (NPRM) titled *Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles*, 88 Fed. Reg. 29184 (May 5, 2023), issued by U.S. Environmental Protection Agency (EPA) in the above-referenced docket.<sup>1</sup>

NESCAUM is the non-profit regional association of state air quality agencies in the Northeast states.<sup>2</sup> NESCAUM's member agencies have the primary responsibility in their states for implementing programs that achieve the public health and environmental protection goals of the federal Clean Air Act (CAA) and state climate laws. For more than three decades, NESCAUM and its members have collaborated closely with other states, federal agencies, industry, and a wide range of stakeholders to promote adoption of low-emission vehicles (LEVs) and zero-emission vehicles (ZEVs).

Congress created the OTC in CAA 184(a) to advise EPA on ozone transport issues and to address persistent ground-level ozone problems in the Northeast and Mid-Atlantic regions.<sup>3</sup> The OTC includes the air quality agencies in the OTC jurisdictions and is responsible for developing and implementing initiatives to reduce nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOCs), the precursor air pollutants that contribute to the formation of ground-level ozone pollution.

NESCAUM and the OTC strongly support EPA's proposal to establish new and more stringent criteria pollutant and greenhouse gas (GHG) emissions standards for model years (MYs) 2027

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<sup>1</sup> These comments reflect the consensus views of NESCAUM's and OTC's members, but not necessarily the views of any individual NESCAUM or OTC member.

<sup>2</sup> The NESCAUM states are Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

<sup>3</sup> The OTC jurisdictions are Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia. NESCAUM is under contract to the OTC to manage its activities.

and later light-duty vehicles (LDVs) and Class 2b and 3 medium-duty vehicles (MDVs). Such standards have the potential to substantially reduce emissions of GHGs, NO<sub>x</sub>, fine particulate matter (PM<sub>2.5</sub>), VOCs, and air toxics, and help states across the country to achieve attainment with National Ambient Air Quality Standards (NAAQS) and state and federal climate goals. NESCAUM and the OTC urge EPA to adopt the proposed criteria pollutant standards and the most stringent GHG emissions standards that are technologically feasible. We offer the following additional comments on the NPRM.

## **I. The Strongest Feasible Emissions Standards Are Needed.**

Earth's climate is changing faster than it has at any point in the history of civilization, driven unequivocally by GHG emissions from human activities. The impacts—including more frequent and intense precipitation and wind events, flooding, heat waves, drought, wildfires, retreating snow and ice pack, ocean warming and acidification, accelerating sea level rise, and large-scale biodiversity loss—are being felt by communities across the globe and will worsen in coming years. Because GHGs can persist in the atmosphere for decades to centuries, how much worse these impacts will become depends on how deeply and rapidly humanity can decarbonize all economic sectors. Each additional ton of carbon dioxide (CO<sub>2</sub>) and other GHGs emitted into the atmosphere contributes to future climate warming and associated impacts.<sup>4</sup>

Global CO<sub>2</sub> emissions reached their highest ever annual level in 2022, surpassing the previous record high set in 2021.<sup>5</sup> The United States has released more CO<sub>2</sub> into the atmosphere than any nation in history and remains the second largest emitter today.<sup>6</sup> At 28 percent, transportation is the largest source of U.S. GHG emissions and is expected to remain so through 2050, as population growth, expansion of urban centers, a growing economy, and increasing international trade will generate increased passenger and freight movement in coming years. Collectively, LDVs, MDVs, and Class 4-8 heavy-duty vehicles account for 82 percent of GHG emissions from the U.S. transportation sector, or 23 percent of total U.S. GHG emissions. LDVs alone are responsible for more than 15 percent of total U.S. GHG emissions.<sup>7</sup>

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<sup>4</sup> See Intergovernmental Panel on Climate Change (IPCC), [Sixth Assessment Report of the IPCC \(AR6\)](https://www.ipcc.ch/report/ar6/syr/), *AR6 Synthesis Report: Climate Change 2023* (2023), <https://www.ipcc.ch/report/ar6/syr/>; see also IPCC, *Climate Change 2022: Mitigation of Climate Change, Contribution of Working Group III to the AR6* (2022), <https://www.ipcc.ch/report/ar6/wg3/>; IPCC, *Climate Change 2022: Impacts, Adaptation and Vulnerability, Contribution of Working Group II to the AR6* (2022), <https://www.ipcc.ch/report/ar6/wg2/>; IPCC, *Climate Change 2021: The Physical Science Basis*, Contribution of Working Group I to the AR6 (2021), <https://www.ipcc.ch/report/ar6/wg1/>.

<sup>5</sup> International Energy Agency (IEA), *CO<sub>2</sub> Emissions in 2022* (2023), <https://www.iea.org/reports/co2-emissions-in-2022>; IEA, *CO<sub>2</sub> Emissions in 2021* (2022), <https://www.iea.org/reports/global-energy-review-co2-emissions-in-2021-2>.

<sup>6</sup> Climate Watch, Historical GHG Emissions, <https://www.climatewatchdata.org/ghg-emissions?source=Climate%20Watch> (visited June 8, 2023).

<sup>7</sup> EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2021*, <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2021> (2023).

Decades of research confirms that exposure to criteria pollutant emissions from motor vehicles, including NO<sub>x</sub>, PM<sub>2.5</sub>, and air toxics, worsens asthma and other cardio-respiratory illnesses, especially in children and older adults, leading to additional trips to doctors and emergency rooms, missed days of school and work, and thousands of premature deaths each year. Exposure to PM<sub>2.5</sub> can trigger heart attacks and strokes, exacerbate obesity and diabetes, and contribute to cognitive challenges.<sup>8</sup> This air pollution affects people nationwide, but especially those who live or work near transportation hubs and corridors, often residents of low-income communities and communities of color affected by decades of cumulative impacts of air pollution from mobile and other sources.<sup>9</sup> EPA estimates that, in 2023, LDVs and MDVs will account for approximately 20 percent of NO<sub>x</sub> emissions, 19 percent of direct PM<sub>2.5</sub> emissions, and 41 percent of VOC emissions in the United States.<sup>10</sup>

The NESCAUM and OTC regions include the New York City (NYC) Combined Statistical Area (CSA) with over 20 million people living across portions of Connecticut, New Jersey, New York, and Pennsylvania. It is the largest CSA by population in the United States. The NYC metropolitan area and surrounding regions continue to persistently exceed federal health-based air quality standards for ground-level ozone. The chronically persistent high concentrations compromise the health and welfare of the citizens living in the NYC CSA and throughout the Northeast Corridor. While ozone is largely a summertime issue, NO<sub>x</sub> emissions are a year-round problem. NO<sub>x</sub> emissions contribute to acid deposition, eutrophication, and visibility impairment in the NESCAUM and OTC regions. During colder seasons, NO<sub>x</sub> emissions play a role in producing secondary PM<sub>2.5</sub> through the formation of nitrates.

## **II. State Policies and Federal Funding have Primed the Market for Rapid Electrification.**

Recognizing the urgent need for action, most of the NESCAUM and OTC states have established ambitious economy wide or transportation sector specific GHG emission reduction targets for 2050 and interim targets that require aggressive emissions reductions by as soon as 2030. Transportation electrification is also critical to attaining the NAAQS in large metropolitan areas like the CSA. For decades, these states have worked individually and collaboratively to develop

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<sup>8</sup> See, e.g., American Lung Association, *State of the Air 2023* (2023), <https://www.lung.org/research/sota>; Health Effects Institute, *Systematic Review and Meta-analysis of Selected Health Effects of Long-Term Exposure to Traffic-Related Air Pollution*, Special Report 23 (2022), [https://www.healtheffects.org/system/files/hei-special-report-23\\_1.pdf](https://www.healtheffects.org/system/files/hei-special-report-23_1.pdf); G. Thurston, et al., *Outdoor Air Pollution and New Onset Airway Disease. An Official American Thoracic Society Workshop Report*, *Annals of the American Thoracic Society*, Vol. 17, No. 4 (2020), <https://www.atsjournals.org/doi/full/10.1513/AnnalsATS.202001-046ST>; R. Sheer and D. Moss, *Breathe Wheezy: Traffic Pollution Not Only Worsens Asthma, but May Cause It*, *Scientific American* (2013), <https://www.scientificamerican.com/article/traffic-pollution-and-asthma/>.

<sup>9</sup> D. Reichmuth, *Air Pollution from Cars, Trucks, and Buses in the US: Everyone is Exposed, But the Burdens are not Equally Shared*, Union of Concerned Scientists (2019), <https://blog.ucsusa.org/dave-reichmuth/air-pollution-from-cars-trucks-and-buses-in-the-u-s-everyone-is-exposed-but-the-burdens-are-not-equally-shared/>; see also A. Jbaily, et al., *Air Pollution Exposure Disparities Across U.S. Population and Income Groups*, *Nature* (2022), <https://www.nature.com/articles/s41586-021-04190-y>.

<sup>10</sup> NPRM, 88 Fed. Reg. at 29186.

and implement a wide range of strategies to accelerate ZEV deployment, priming the market for increasingly stringent federal emissions standards.

#### **A. Section 177 State LDV and MDV Emissions Standards**

Under the CAA, California is the only state permitted to establish emissions standards for new motor vehicles. However, CAA Section 177 authorizes other states to adopt California's emissions standards, which are generally more stringent than comparable federal requirements. States first began to utilize this tool over 30 years ago to address smog and more than 15 years ago to curb GHG emissions. Since 1990, California and a growing number of "Section 177 states," including most of the NESCAUM and OTC states, have adopted regulations designed to increase production of on-road ZEVs. Adoption of these standards by Section 177 states enables economies of scale and sends clear market signals to industry and investors. These states also serve as a proving ground for advanced technologies and provide the foundation for strong federal standards like those proposed in the NPRM.

California's Advanced Clean Cars (ACC) regulations require manufacturers of light-duty cars and trucks to sell increasing percentages of ZEVs. The regulations also include LEV standards to reduce criteria pollutants and GHG emissions from new internal combustion engine (ICE) vehicles. To date, in addition to California, 17 states have adopted the LEV standards, and 15 states have adopted both the LEV standards and ZEV sales requirements.<sup>11</sup>

Collectively, California and the 15 Section 177 ZEV states account for roughly 35 percent of U.S. sales of new light-duty ZEVs.<sup>12</sup> The ZEV sales requirements in these states have helped to create a national market that enables ZEV automakers, suppliers, and charging providers to achieve economies of scale, lowers consumer costs, and promotes job creation in automotive, manufacturing, infrastructure, and supporting industries. Experience proves that ZEV sales requirements provide the regulatory certainty needed to drive public and private investment in deployment of ZEVs and charging infrastructure. Indeed, states with these requirements consistently outperform the national average for light-duty ZEV sales. From 2019 to 2022, light-duty ZEV market penetration in the Section 177 ZEV states more than quadrupled, exceeding 10 percent of total LDV sales.<sup>13</sup>

Outside of California, nearly half of the nation's public charging infrastructure has been deployed in states with ZEV sales requirements. These states also account for roughly three

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<sup>11</sup> A key focus of NESCAUM's clean transportation work is to advise and assist states with respect to adoption and implementation of California's new motor vehicle emissions standards. Through its Mobile Sources Committee, NESCAUM helps the Section 177 states to collaborate and coordinate on shared mobile source regulatory issues.

<sup>12</sup> National Automobile Dealers Association, *NADA Data 2021* (2022), <https://www.nada.org/media/4695/download?inline>.

<sup>13</sup> Atlas Public Policy, EV Hub, <https://www.atlasevhub.com/materials/automakers-dashboard/> (2023 IHS data) (visited Feb. 23, 2023).

quarters—nearly \$5 billion—of all utility funding for transportation electrification approved by state public utility commissions.<sup>14</sup>

California’s ACC II program, finalized in 2022, requires manufacturers of passenger vehicles (designed to transport 12 persons or less) and light-duty trucks (gross vehicle weight rating less than 8,500 pounds) to produce and deliver for sale an increasing percentage of ZEVs over time and 100 percent ZEVs by 2035. ACC II also establishes increasingly more stringent exhaust and evaporative emission standards for light- and medium-duty ICE vehicles. To date, California, Massachusetts, New York, Oregon, Vermont, Virginia, and Washington have adopted ACC II. These seven states represent over 20 percent of the LDV market.<sup>15</sup> Six more jurisdictions—Colorado, Delaware, the District of Columbia, Maryland, New Jersey, and Rhode Island—have announced their intentions to adopt ACC II. More are expected to follow given the anticipated climate, air quality, and economic benefits of the program.<sup>16</sup>

California’s Advanced Clean Trucks (ACT) regulation requires manufacturers of Class 2b-8 on-road medium- and heavy-duty vehicles to sell increasing percentages of ZEVs. By model year 2035, 55 percent of sales of Class 2b-3 vehicle sales, 75 percent of class 4-8 vehicle sales, and 40 percent of Class 7-8 truck tractor sales must be ZEVs. In addition to California, seven states—Colorado, Massachusetts, New Jersey, New York, Oregon, Vermont, and Washington—have adopted the ACT regulation. These states have also adopted California’s Heavy-Duty Low NOx and Phase II GHG regulations, which are designed to reduce emissions from new diesel fueled heavy-duty vehicles while the market transitions to ZEVs. Many more states are expected to follow. Like the ACC II regulation, state adoption of the ACT regulation creates economies of scale, lowers costs, promotes job creation, and provides the regulatory certainty needed to drive investment in ZEVs and infrastructure.

## **B. Multi-State Collaboration**

The NESCAUM and OTC states have long understood the benefits of a coordinated approach to transportation electrification policy development and implementation. Many are signatories to the 2013 Multi-State Zero-Emission Vehicle Memorandum of Understanding,<sup>17</sup> which set light-duty ZEV sales targets for ten states to achieve by 2025; memorialized their commitment to

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<sup>14</sup> U.S. Department of Energy, Alternative Fuels Data Center, Alternative Fueling Station Counts by State, <https://afdc.energy.gov/stations/states> (visited June 9, 2023).

<sup>15</sup> Recent modeling for select Section 177 states shows that adopting ACC II will result in even greater cumulative NOx and GHG emissions reductions than EPA’s proposed standards between 2025 and 2040. Across all of the states modeled, ACC II achieved 30 percent greater well-to-wheel CO<sub>2</sub> equivalent reductions and 75 percent greater NOx reductions than EPA’s proposed standards. Some states modeled saw even greater reductions. In Connecticut and New Jersey, for example, ACC II would provide an incremental benefit of roughly two times more than EPA’s proposal. See Sonoma Technology, ACC II Program – EPA 2027 Proposal Comparison (June 8, 2013), [LINK TO NESCAUM WEBSITE WHEN POSTED].

<sup>16</sup> National Automobile Dealers Association, *NADA Data 2021* (2022), <https://www.nada.org/media/4695/download?inline>.

<sup>17</sup> Multi-State Zero-Emission Vehicles Program Memorandum of Understanding (Oct. 2013), <https://www.nescaum.org/documents/zev-mou-10-governors-signed-20191120.pdf>;



work together to develop policies and programs to achieve those targets; and created the Multi-State ZEV Task Force, facilitated by NESCAUM, to enable states to collaborate and coordinate on ZEV policy. NESCAUM and the Task Force have developed two action plans with recommendations for states to accelerate light-duty ZEV adoption<sup>18</sup> and policy guidance on a wide range of related issues and topics.

Most of the NESCAUM and OTC states are also signatories to the 2020 Multi-State Medium- and Heavy-Duty ZEV Memorandum of Understanding,<sup>19</sup> now signed by a diverse coalition of 17 states, the District of Columbia, and the Canadian province of Quebec. Collectively, the U.S. signatories represent 43 percent of the U.S. population, 49 percent of the U.S. economy, and 36 percent of the nation's medium- and heavy-duty vehicles.<sup>20</sup> The 2020 MOU commits the signatories to collaborate to accelerate the market for zero-emission trucks, vans, and buses, and sets targets to achieve at least 30 percent medium- and heavy-duty ZEV sales by 2030 and 100 percent ZEV sales by no later than 2050. Some of the signatories have established more ambitious targets. In July 2022, NESCAUM and the Task Force released an action plan with more than 65 strategies and recommendations for state policymakers to support the rapid, equitable, and widespread electrification of MHD vehicles.<sup>21</sup> The signatories and other Task Force states are currently working to implement these recommendations.

Like ZEV sales regulations, the shared ambition memorialized in these multi-state agreements sends strong and consistent signals to industry and investors and promotes public and private investment in zero-emission technologies and infrastructure. For example, the public utility commissions in the U.S. signatories to the 2022 MOU have already approved more than \$2 billion dollars of utility funding for medium- and heavy-duty ZEV infrastructure planning and deployment.<sup>22</sup>

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<sup>18</sup> See, e.g., Multi-State ZEV Task Force, *Multi-State ZEV Action Plan 2018-2021: Accelerating the Adoption of Zero Emission Vehicles* (June 2018), <https://www.nescaum.org/topics/zero-emission-vehicles/multi-state-zev-action-plan-2018-2021-accelerating-the-adoption-of-zero-emission-vehicles>; *Multi-State ZEV Action Plan* (May 2014), <https://www.nescaum.org/documents/multi-state-zev-action-plan.pdf/>.

<sup>19</sup> Multi-State Medium- and Heavy-Duty Zero-Emission Vehicle Memorandum of Understanding (July 2020), <https://www.nescaum.org/documents/mhdv-zev-mou-20220329.pdf/>.

<sup>20</sup> Collectively, the U.S. signatories represent 43 percent of the U.S. population, 49 percent of the U.S. economy, and 36 percent of the nation's MHD vehicles. See Census Bureau, 2020 Population and Housing State Data (Aug. 12, 2021), <https://www.census.gov/library/visualizations/interactive/2020-population-and-housing-state-data.html>; Bureau of Economic Analysis, GDP and Personal Income, <https://apps.bea.gov/itable/iTable.cfm?ReqID=70&step=1#reqid=70&step=1&isuri=1> (visited June 23, 2022) (2021 Real GDP); Atlas Public Policy, EV Hub, <https://www.atlasevhub.com/materials/medium-and-heavy-duty-vehicle-registrations-dashboard/#06f2a5dfc39daf9cc> (visited June 23, 2022) (2019 IHS market data).

<sup>21</sup> See Multi-State ZEV Task Force, *Multi-State Medium- and Heavy-Duty Zero-Emission Vehicle Action Plan: A Policy Framework to Eliminate Harmful Truck and Bus Emissions* (July 27, 2022), <https://www.nescaum.org/documents/multi-state-medium-and-heavy-duty-zero-emission-vehicle-action-plan/>.

<sup>22</sup> U.S. Department of Energy, Alternative Fuels Data Center, Alternative Fueling Station Counts by State, <https://afdc.energy.gov/stations/states> (visited June 9, 2023).

### **C. Market-Enabling Complementary Policies**

Many of the NESCAUM and OTC states have state-specific plans to reduce GHGs and air pollution from on-road transportation and have adopted a diverse set of market-enabling policies and programs designed to advance the market for light-, medium, and heavy-duty ZEVs. Examples include ZEV sales and purchase requirements as discussed above; ZEV and infrastructure purchase incentives; utility programs and investments in ZEV infrastructure; consumer and fleet outreach and education programs; innovative financing mechanisms; multi-family dwelling and workplace charging programs; and deployment of public charging in communities and along major travel corridors. Many states have established requirements or goals to transition state vehicles and transit fleets to ZEVs. In addition, most states have adopted clean energy or renewable portfolio standards, which require a share of power sold by their utilities to come from renewable sources. Some states have adopted 100 percent renewable energy goals. States recognize that transitioning to renewable energy sources will maximize emissions reductions from ZEVs over time.

### **D. Deployment of Federal Funding**

The recently enacted Bipartisan Infrastructure Law (BIL) and the Inflation Reduction Act (IRA) provide billions of dollars of funding to advance transportation electrification including substantial funding for state governments. Combined with state and federal financial incentives for ZEVs and charging and fueling infrastructure, and other market-enabling policies, the LDV and MDV market segments are primed for rapid and widespread electrification.

The NESCAUM and OTC states are already beginning to deploy the \$5 billion made available through the National Electric Vehicle Infrastructure program to accelerate installation of public charging and other alternative fueling infrastructure, and the \$5 billion Clean School Bus grant program for zero-emission school buses and technology. Additional funding will be available soon through the \$7.25 billion Low or No Emission and Grants for Buses and Bus Facilities programs, the \$2.5 billion Charging and Fueling Infrastructure program, the \$1 billion Clean Heavy-Duty Vehicle program, and many other new and existing federal programs for which activities that support transportation electrification are eligible. All of the NESCAUM and OTC states recently submitted applications for the \$5 billion Climate Pollution Reduction Grant Planning and Implementation programs, which require states to develop and implement priority and comprehensive climate action plans to reduce economy-wide GHG emissions.

## **III. NESCAUM and OTC Comments on the NPRM**

For the reasons carefully considered and articulated in the NPRM, and those discussed above, NESCAUM and the OTC strongly support EPA's exercise of its authority under CAA Section 202(a) to establish new and more stringent criteria pollutant and GHG emissions standards for MYs 2027 and later LDVs and Class 2b and 3 MDVs. As an initial matter, we agree with EPA's conclusion that the standards it proposes are technologically feasible and that the costs of

compliance for manufacturers would be reasonable. The proposed standards would generate substantial reductions in emissions of GHGs, criteria pollutants, and air toxics, creating significant benefits for public health and welfare. We also agree that the proposal would result in reduced vehicle operating and maintenance costs for consumers. Moreover, the benefits of the regulation would far exceed its costs. EPA estimates the cumulative monetized benefits of the GHG and criteria pollutant standards through 2055, considering both upstream and downstream emissions, to be between \$850 billion and \$1.6 trillion (2020 \$US) depending on the selected discount rate.<sup>23</sup>

NESCAUM's and OTC's comments are summarized as follows:

- EPA should adopt the most stringent GHG emissions standards that are technologically feasible.
- EPA should consider extending and increasing the GHG standards through MY 2035.
- EPA should adopt the proposed NOx and PM<sub>2.5</sub> emissions standards.
- EPA should develop gasoline fuel property standards as discussed in the NPRM.
- EPA should seek to harmonize its electric vehicle battery durability and warranty requirements with the ZEV maintenance and durability requirements of the ACC II program to the greatest extent possible.

NESCAUM and the OTC offer the following specific comments on the NPRM.

#### **A. Proposed LDV and MDV GHG Emissions Standards**

NESCAUM and the OTC strongly support EPA's proposal to establish CO<sub>2</sub> emissions standards for LDVs and MDVs that would increase in stringency each year from MYs 2027–2032. EPA should adopt the most stringent standards that are technologically feasible.

EPA's proposed LDV standards are projected to result in an industry-wide average target for the light-duty fleet of 82 g/mi of CO<sub>2</sub> in MY 2032, representing a 56 percent reduction in projected fleet average GHG emissions target levels from existing MY 2026 federal standards. EPA's proposed MDV standards are projected to result in an average target of 275 g/mi of CO<sub>2</sub> by MY 2032, which would represent a reduction of 44 percent compared to the current MY 2026 standards. EPA also proposes to revise the existing standard for MY 2027 given the increased feasibility of GHG emissions reducing technologies in this time frame.

EPA's analysis finds that the proposed LDV and MDV standards could reduce net CO<sub>2</sub> emissions by 7.3 billion metric tons through 2055. EPA estimates the cumulative monetized

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<sup>23</sup> See EPA, Draft Regulatory Impact Analysis (DRIA), EPA-420-D-23-003 (Apr. 14, 2023), <https://www.regulations.gov/document/EPA-HQ-OAR-2022-0829-0360>.



climate benefits of the standards through 2055 to be \$330–\$500 billion (2020 \$US) depending on upstream emissions and the selected discount rate.<sup>24</sup>

Considering the state of the U.S. and global LDV and MDV markets, NESCAUM and the OTC believe that GHG standards more stringent than EPA’s proposal are technologically feasible. Announcements by major manufacturers to transition their vehicles to ZEVs, agreements by large public and private fleets to purchase ZEVs, the deployment and rapid expansion of charging infrastructure networks across the country, an increasing number of states adopting the ACC II and ACT programs, and accelerating global momentum, all support the conclusion that the LDV and MDV markets are ready for rapid and widespread electrification. Alternative 1 in the NPRM is projected to result in an industry-wide average target of 72 g/mi of CO<sub>2</sub> in MY 2032, representing a 61 percent reduction in projected fleet average GHG emissions target levels from the existing MY 2026 standards. NESCAUM and the OTC believe the standards described in Alternative 1 are technologically feasible.

EPA should consider extending and increasing both the LDV and MDV standards through MY 2035, which will send a strong signal to industry and the public and align with MYs covered by the ACC II and ACT regulations. NESCAUM and the OTC also generally support EPA’s proposal to revise the footprint standards for LDVs and work factor standards for MDVs. EPA should adopt footprint curves that incentivize downsizing of all LDV and MDV types and classes to protect pedestrians and cyclists. We also support EPA’s air conditioning credit programs and its proposal to sunset the off-cycle credits program for both LDVs and MDVs and suggest EPA consider whether shorter timeframes are appropriate.

NESCAUM and the OTC have some concerns that EPA’s fleet average allows for emissions from ICE vehicles manufactured during the regulated period to increase for MYs 2028 and later. Specifically, assuming EPA’s projected increases in battery-electric vehicle (BEV) market share over time, it appears that non-BEV emissions could increase from approximately 240 g/mi in 2027 to approximately 250 g/mi in 2032. As a policy matter, we believe it is appropriate for EPA to include in its final rule a regulatory mechanism, such as a maximum allowable emissions rate, to ensure emissions from non-BEVs do not increase during the regulated period and beyond.

## **B. Proposed LDV and MDV Criteria Pollutant Emissions Standards**

NESCAUM and the OTC also strongly support EPA’s proposal to establish more stringent emissions standards for criteria pollutants for both LDVs and MDVs for MYs 2027–2032. EPA should adopt the standards proposed in the NPRM.

EPA is proposing non-methane organic gas (NMOG) plus NO<sub>x</sub> standards for LDVs that would phase-down to a fleet average level of 12 mg/mi by MY 2032, representing a 60 percent reduction from the existing standards for MY 2025 established in the Tier 3 rule in 2014. EPA is

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<sup>24</sup> See EPA, DRIA, EPA-420-D-23-003 (Apr. 14, 2023), <https://www.regulations.gov/document/EPA-HQ-OAR-2022-0829-0360>.

proposing NMOG plus NO<sub>x</sub> standards for MDVs that would require a fleet average level of 60 mg/mi by MY 2032, representing a 66–76 percent reduction from the Tier 3 standards for Class 2b and Class 3 vehicles. EPA is proposing cold temperature NMOG plus NO<sub>x</sub> standards for LDVs and MDVs to ensure robust emissions control over a broad range of operating conditions.

EPA’s modeling shows that these proposed standards would reduce NO<sub>x</sub> emissions by 66,000 tons in 2055, representing a 41 percent reduction compared to the no action scenario. EPA also estimates reductions of 220,000 tons of VOCs, representing a 50 percent reduction, and 12,000 tons of sulfur dioxide, representing a 42 percent reduction, compared to no action.

The NESCAUM and OTC jurisdictions need the greatest possible reductions in NO<sub>x</sub> emissions from all sectors to meet federal air quality standards. Modeling conducted by NESCAUM and the OTC has demonstrated that, even with a 90 percent reduction in emissions of all regulated pollutants from all on-road mobile sources, the NYC CSA would still benefit from additional NO<sub>x</sub> reduction strategies to achieve ozone reductions.<sup>25</sup> NESCAUM and the OTC believe substantial NO<sub>x</sub> reductions from transportation can be achieved through the application of ZEV technologies. NESCAUM and the OTC believe EPA’s proposed standards are necessary and technologically feasible and we urge EPA to adopt them.

EPA is proposing particulate matter (PM) standards for both LDVs and MDVs of 0.5 mg/mi for three test cycles, including cold temperature. EPA projects the new standards will reduce PM<sub>2.5</sub> emissions from ICE vehicles by 95 percent and substantially reduce emissions of air toxics. As discussed in the NPRM, the technology needed to achieve these standards is readily available. The NPRM demonstrates both that PM can be controlled down to near zero levels, and also that emissions well below the proposed limit of 0.5 mg/mi can be measured with existing certification procedures.<sup>26</sup> We support EPA’s inclusion of both standard and cold temperature testing for criteria pollutants across all vehicle categories, as these tests better represent real world operation across much of the United States.

EPA’s technical analysis finds that 15,000 tons of PM<sub>2.5</sub> would be reduced in 2055 as a result of the proposed LDV and MDV standards. EPA estimates the cumulative monetized benefits of the standards through 2055 to be between \$63 and \$280 billion (2020 \$US) depending on the

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<sup>25</sup> See OTC, Modeling Committee Update for OTC and MANEVU Stakeholders Meeting at 10 (Apr. 21, 2023), [https://otcair.org/upload/Documents/Meeting%20Materials/3%2020230421%20OTC\\_Modeling\\_Comm\\_final.pdf](https://otcair.org/upload/Documents/Meeting%20Materials/3%2020230421%20OTC_Modeling_Comm_final.pdf).

<sup>26</sup> As noted in the NPRM, the majority of the global vehicle market outside of the U.S. is subject to more stringent PM standards. Gasoline passenger cars have been regulated on the number of particles they emit since 2015 in Europe and since 2020 in China and India. As a result, the best available PM emission control technologies like gasoline particulate filters (GPF) and high-pressure fuel injectors have been incorporated into vehicles sold in these regions for several years. In fact, nearly identical vehicles produced in the U.S. without a GPF and shipped to Europe can be sold only after a GPF is installed.

selected discount rate.<sup>27</sup> Other analyses have also demonstrated the substantial health and air quality benefits that can be expected from stringent particulate emission standards. For example, the Manufactures of Emission Controls Association (MECA) conducted a study to model the benefits of a national 0.5 mg/mi PM standard. The study found that implementation of a national 0.5 mg/mi PM standard would result in health cost savings ranging from \$18 to \$163 billion (2020 \$US) depending on the pace of electrification and selected discount rate.<sup>28</sup> NESCAUM and the OTC urge EPA to finalize the standards as proposed for all three test cycles.

### **C. Potential Future Gasoline Fuel Property Standards**

EPA also seeks comment on a potential future rulemaking to establish gasoline fuel property standards aimed at further reducing PM emissions. NESCAUM and the OTC believe that, while the proposed emissions standards for MYs 2027 and later would achieve significant air quality benefits, cleaner fuel standards would provide an important complement to the standards for new vehicles proposed in the NPRM. It is critical to address emissions from the existing vehicle fleet, as well as the millions of vehicles that will be produced during the phase-in and operative periods of the proposed standards. Accordingly, NESCAUM and the OTC support EPA exercising its authority under CAA 211(c) to develop gasoline property standards in a future rulemaking.

### **D. Proposed EV Battery Durability and Warranty Provisions**

NESCAUM and the OTC support EPA's proposal to include minimum battery durability requirements and warranty provisions for BEV and plug-in hybrid electric vehicle (PHEV) batteries and associated electric powertrain components. Batteries and associated electric powertrain components are emission control devices that allow BEVs to operate with zero tailpipe emissions and reduce emissions from PHEVs. By requiring manufacturers to demonstrate that test groups of BEVs and PHEVs meet battery durability requirements throughout their useful lives, EPA will be able to assess whether BEVs and PHEVs will operate as expected over time. Warranty requirements protect consumers against individual vehicles that experience failures or defects.

As EPA surmises, emission control components covered by warranty are more likely to be repaired or replaced as needed. Thus, working in tandem, the durability and warranty provisions will ensure that EPA's emissions standards deliver expected emission reductions and needed environmental and public health benefits. In addition, these provisions are integral to instilling

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<sup>27</sup> See EPA, DRIA, EPA-420-D-23-003 (Apr. 14, 2023), <https://www.regulations.gov/document/EPA-HQ-OAR-2022-0829-0360>. As EPA notes in the DRIA, these monetized benefits do not reflect benefits associated with reducing ambient concentrations of ozone, direct exposure to nitrogen dioxide, or exposure to mobile source air toxics, nor do they account for improved ecosystem effects or visibility. The estimated benefits of the proposal would be larger if these unquantified benefits were monetized.

<sup>28</sup> MECA, *Impacts Analysis of a Revised Federal Light-Duty On-Road Particulate Matter Standard* (June 2023), [LDV PM Standard Final Report 06272023.pdf \(meca.org\)](https://www.meca.org/Files/2023/06/LDV_PM_Standard_Final_Report_06272023.pdf).

consumer confidence in the performance and durability of BEVs and PHEVs, not only when new, but also in secondary markets.

To the maximum extent possible, NESCAUM and the OTC encourage EPA to align the durability and warranty provisions in its final rule with those in the ACC II regulations. As mentioned above, seven states representing roughly 20 percent of the new LDV market have already adopted ACC II, and several others are expected to follow. More closely aligning EPA's durability and warranty provisions with those in ACC II will make it easier for consumers, used automobile dealers, and others to compare the battery state of health for BEVs and PHEVs subject the ACC II regulations with those subject to EPA's final rule.

#### **IV. Conclusion**

Given the urgency of the climate crisis, the impacts of pollution from transportation on air quality and public health, anticipated growth of the transportation sector, and the rapid growth in ZEV adoption, it is necessary and appropriate for EPA to exercise its authority in CAA Section 202(a) to establish new and more stringent GHG and criteria pollutant and emissions standards for MYs 2027 and later LDVs and MDVs. NESCAUM and the OTC urge EPA to finalize a rule with the most stringent standards feasible.

Sincerely,



Coralie L. Cooper  
Deputy Director, NESCAUM



Paul E. Farrell  
Chair, OTC Mobile Sources Committee  
Acting Bureau Chief, CT DEEP

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