

**Multi-State Medium- and Heavy-Duty (MHD) Zero Emission Vehicle (ZEV)  
Memorandum of Understanding  
Fact Sheet**

**July 14, 2020**

**The Opportunity**

- Bipartisan multi-state coalition of 15 states and the District of Columbia have signed the MOU. States in addition to Connecticut include: California, Colorado, Hawaii, Maine, Maryland, Massachusetts, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, Vermont and Washington and the District of Columbia.
- This MOU presents an important opportunity for states to lead on clean air and climate action and to improve public health in our most vulnerable communities.
- Equally important is the need to support an economic recovery from the impacts of the COVID-19 pandemic that prioritizes a transition to a clean, electrified transportation sector.
- The signatory states will agree to work together to foster a self-sustaining market for zero emission medium- and heavy-duty vehicles through the existing Multi-State ZEV Task Force, which will serve as a forum for state coordination, collaboration and information sharing on market enabling actions, research, and technology developments.
- State is committing to a multi-state planning process. Through the planning process the participating states will develop a multi-state action plan to identify barriers and propose solutions to support widespread electrification of medium- and heavy-duty vehicles (Zero Emission Medium- and Heavy-Duty Vehicle Action Plan)

**Background**

- On December 12, 2019 environmental commissioners from eight states (CA, CT, ME, MA, NJ, OR, RI and VT) and the District of Columbia signed a joint [Statement of Intent](#). This announcement marked the formation of a multi-state coalition and the development of a memorandum of understanding (MOU) for governors to sign onto with the goal of accelerating the market for zero-emission medium-and heavy-duty (MHD) vehicles.
- This initiative builds on the success of the existing 2013 multi-state governors ZEV MOU for light-duty vehicles. The [2013 ZEV MOU](#) directed the formation of the Multi-State ZEV Task Force and development of an [Action Plan](#), which has provided the signatory states with a roadmap for expanding the consumer ZEV market and a forum for information sharing, collective strategizing, and coordinated action on shared priorities.
- The MHD MOU outlines a framework to replicate this successful process.

**Summary of the MOU**

- The MOU is a high-level document that leaves development of a detailed action plan to the Multi-State ZEV Task Force. Key provisions of the MOU include:

- A commitment by the signatory states to work collaboratively through the ZEV Task Force to develop and implement a comprehensive multi-state MHD ZEV action plan;
- Identification of categories of market enabling strategies for the ZEV Task Force to consider when developing the action plan (e.g., financial incentives for vehicles and infrastructure, fleet manager outreach and education, innovative financing mechanisms, strategic deployment of public charging stations, utility investment programs, beneficial rate design, and adoption of regulatory requirements such as California’s ACT rule);
- A goal to make all MHD vehicle sales in the signatory states ZEVs by no later than 2050 and an interim target that 30 percent of MHD vehicles sales be ZEVs by 2030;
- Provision for a 2025 mid-term review of the interim sales target to respond to unforeseen market developments and make adjustments as needed; and
- A commitment by the signatory states to lead by example by purchasing MHD ZEVs for public fleets.
- While the MOU identifies California’s ACT rule as one of the specific market-enabling strategies for states to consider, there is no direct linkage between signing the MOU and adopting the ACT rule.

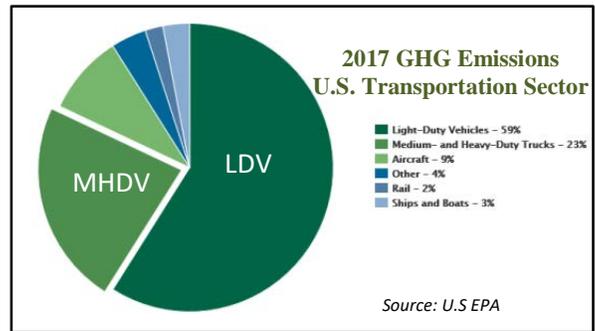
### **Environmental Considerations for Reducing Emissions from Medium and Heavy-Duty Vehicles**

- Connecticut has a persistent ozone non-attainment challenge to address, and mandatory GHG emission reduction targets to achieve.
- The transportation sector represents a significant component of mobile source emissions. On-road mobile sources are the largest single contributor to NOx emissions, accounting for 67% of criteria pollutant emissions and 38% of all GHG emissions.
- Overtime, as emissions are reduced from passenger vehicles NOx contributions from heavy-duty vehicles will represent the largest share of CT’s on-road emissions within the mobile source sector.
- Recent projections show that NOx emissions from on-road heavy-duty diesel will significantly contribute ozone levels measured at Connecticut’s monitors in 2023. Supporting regional action to reduce these emissions will be a critical strategy in CT’s efforts to realize these reductions and attain the health-based national standards for ozone.

### **Environmental Justice Considerations**

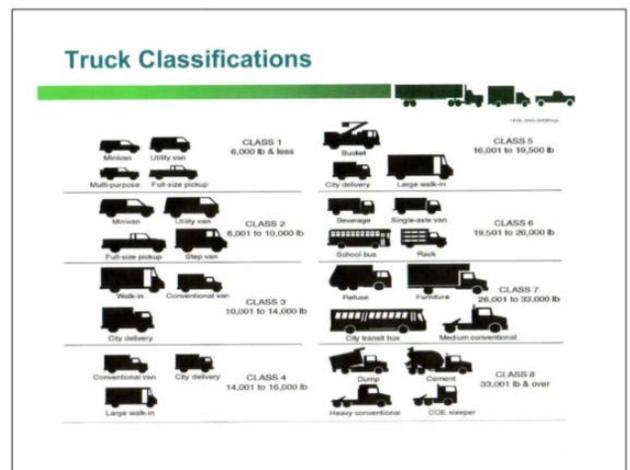
- Diesel emissions from these vehicles are also a major source of NOx, fine particulate matter (PM 2.5), black carbon (a component of PM 2.5 which exacerbates climate mitigation efforts) and air toxics that are a concern for urban areas in CT.
- Even though we currently meet health-based standards for PM 2.5, we need to maintain air quality levels that are protective of public health with an adequate margin of safety.
- These harmful emissions have a disproportionate impact on many disadvantaged communities that are located along transportation corridors in CT or near ports, distribution centers and other trucking hubs where queuing and stationary idling occurs.
- Supporting the deployment of cleaner trucks can provide considerable air quality and climate benefits to these communities.

***The Need to Tackle the MHD Pollution Burden.*** MHD trucks and buses account for only 4 percent of all vehicles on the road, but nearly 25 percent of transportation sector greenhouse (GHG) emissions. After passenger cars and trucks, MHD vehicles are the second largest source of transportation sector GHG emissions and continue to grow. In the five-year period from 2019 to 2024, truck volumes are forecasted to grow 2.3 percent each year.<sup>1</sup> The American Association of State Highway and Transportation Officials projects that by 2030, for every two trucks on the road today, there will be one more additional truck.<sup>2</sup>



In addition, MHD vehicles are a major contributor to emissions of nitrogen oxides, particulate matter, and air toxics, and are a widely acknowledged, but unaddressed, environmental justice problem for lower-income communities of color that are often located near freight corridors, ports and distribution centers and are disproportionately exposed to harmful pollutant levels. Moreover, a recent [Harvard University study](#) has linked long term average exposure to higher levels of PM<sub>2.5</sub> in the ambient air and increased COVID-19 mortality.

***Market Readiness.*** MHD vehicles are categorized into classes based on gross vehicle weight ratings. Vehicle classes 2b to 6 are defined as medium duty (e.g., urban delivery vehicles). Classes 7 and 8 are defined as heavy duty (e.g., city transit buses and long-haul tractor-trailers).



At least 70 MHD ZEV models are commercially available today across nearly all classes, including urban delivery vans, refuse trucks, transit buses, school buses, and drayage trucks. Subject to delays caused by the COVID-19 pandemic, more than 150 MHD ZEV models are expected to be commercially available by 2023. In every class, commonly used applications are projected to achieve total cost of ownership parity with their diesel or gasoline counterparts by 2030 without financial incentives, and in many cases by 2025.

Many large commercial fleets have already begun the transition to electric vehicles. Some noteworthy fleet announcements include: [Amazon to Buy 100,000 Rivian Electric Delivery Trucks](#); [PepsiCo Orders 100 Tesla Electric Semi Trucks](#); [UPS invests in Arrival and Orders 10,000 Electric Vehicles](#).

<sup>1</sup> A. Goetz et al., *Urban Goods Movement and Local Climate Action, Assessing Strategies to Reduce Greenhouse Gas Emissions from Urban Freight Transport*, at 4 (April 2019), retrieved from [http://transweb.sjsu.edu/sites/default/files/1796\\_Goetz\\_Alexander\\_Urban-Goods-Movement-Greenhouse-Gas-Emissions.pdf](http://transweb.sjsu.edu/sites/default/files/1796_Goetz_Alexander_Urban-Goods-Movement-Greenhouse-Gas-Emissions.pdf).

<sup>2</sup> *Id.*