VOLVO

TO: NESCAUM

FROM: Dawn Fenton
Vice President, Government Relations & Public Affairs
Volvo Group North America

RE: Comments on Draft Multi-State Medium- and Heavy-Duty Zero-Emission Vehicle (MHD ZEV) Action Plan

DATE: May 9, 2022

**Introduction**

Volvo Group North America (VGNA) would like to thank the Northeast States for Coordinated Air Use Management (NESCAUM) for the opportunity to provide comments on the draft Multi-State Medium- and Heavy-Duty Zero-Emission Vehicle (MHD ZEV) Action Plan ("Action Plan") for state signatories of the Multi-State Medium- and Heavy-Duty Zero Emission Vehicle Memorandum of Understanding (MOU).

It is clear that a significant level of attention and effort was invested in the development of this document, and while there are some recommendations that VGNA opposes, this document offers critical advice, which states must heed if the goals of the MOU are to be achieved. VGNA applauds NESCAUM's efforts to educate state policymakers about the many market barriers to widespread fleet electrification and its acknowledgement on page two of the Action Plan that "achieving the pace and scale of vehicle adoption needed to meet the goals of the MOU will require well designed public policies and programs and a concerted effort by all stakeholders to address market barriers."

**About the Volvo Group**

The Volvo Group drives prosperity through transport and infrastructure solutions, offering trucks, buses, construction equipment, power solutions for marine and industrial applications, financing and services that increase our customers' uptime and productivity. Founded in 1927, the Volvo Group is committed to shaping the future landscape of sustainable transport and infrastructure solutions. The Volvo Group is headquartered in Gothenburg, Sweden, employs nearly 100,000 people and serves customers in more than 190 markets.

Volvo Group North America (VGNA), with headquarters in Greeensboro, NC, employs around 13,700 people in the United States and operates 11 manufacturing and remanufacturing

facilities in seven states. The Volvo Group is the only major truck manufacturer that produces all its vehicles for the North American market in the U.S. In 2021, the Volvo Group's global net sales amounted to about $43 billion. Volvo shares are listed on Nasdaq Stockholm. For more information, please visit www.volvogroup.com.

In 2020, the Volvo Group made a global commitment to having 100% of product sales be fossil free by 2040, including a nearer term goal of 35% of product sales being zero-emission by 2030. The Volvo Group has also committed to the Science Based Targets Initiative and a roadmap of product development in alignment with achieving the goals of the Paris Climate Accord. We have more than 6,000 electric transit buses in service throughout the world and have been selling heavy-duty battery electric trucks in Europe since 2019. In the United States, we have Class 8 battery-electric tractors and refuse trucks as well as electric transit buses and compact construction equipment all being used in customers' commercial operations. In addition to batteries, we recognize that hydrogen fuel cells will be needed to power electric drivelines for heavy transport and demanding long-haul applications. We expect to have fuel cell powered trucks available in the U.S. during the second half of this decade.

**Overall Comments**

The U.S. MHD market is on the cusp of a paradigm shift which has not been seen for more than one hundred years. Technological advances in recent years have resulted in significant improvements in battery capacity, design and cost. Nevertheless, as stated on page 17, "a rapid transition from small-scale deployments by leading early adopters to a self-sustaining market across all vehicle classes requires overcoming a set of key barriers to widespread fleet electrification." Section five of the action plan outlines several of these barriers, including high upfront costs, charging infrastructure availability, conducive electricity pricing, and limited financing options. Overcoming these barriers will require awareness of and engagement by many stakeholders who have little experience with either electric-powered vehicles or working with the heavy-duty trucking industry.

The Volvo LIGHTS project in southern California, mentioned on page 16 of the action plan, gave VGNA a firsthand appreciation of the challenges and inherent delays that come from establishing new businesses and partnerships. Business thrives on certainty and predictability, both of which are absent in the marketplace for heavy-duty battery electric trucks. The action plan confirms VGNA's own experience that no single action or stakeholder can ensure success, but rather that multiple efforts in support of greater funding, education, and cooperation are needed.

Currently only a small minority of utilities around the country have incentive programs (like make-ready programs, rebates for chargers, etc.) to help offset the cost of infrastructure needs and or an established rate structure to help commercial fleets accurately assess the fueling costs they can expect for the life of their new MHD ZEV. In light of this fact, it is unfortunate to see the Action Plan include multiple citations of reports that make arguably misleading or

uninformed predictions about the anticipated favorable total cost of ownership (TCO) of MHD ZEVs. If the Volvo LIGHTS project and subsequent customer experiences have shown anything, it is that while the adoption process can be replicated, the risk calculus and TCO estimates are far from uniform or predictable across fleets due to their differing duty cycles and locations.

**Regulation driven production**

As justification for its support for state adoption of California's Advanced Clean Truck Regulation, the Action Plan claims on page 25 that "regulatory requirements mandating MHD ZEV sales provide market certainty needed to drive investments in zero emission technologies..." The Volvo Group's experience tells a very different story. There is little argument among most stakeholders that the suitability for battery electric vehicles varies based on application and market. For this reason, Volvo Group focused its early investment in and deployment of BEVs in the European transit bus market.

In North America, Volvo Trucks developed its proposal for the Volvo LIGHTS project and began its multimillion-dollar investment in bringing battery electric truck technology to market years before the Advanced Clean Truck regulation was considered by the California Air Resources Board.

Despite its strong opposition to state adoption of California's Advanced Clean Truck Regulation and Omnibus Low NOx regulation, VGNA does not oppose strong federal government regulations. In fact, VGNA supports a fossil free transportation future and has expressed support for a robust, technically feasible national NOx regulation as a means of supporting cleaner air, particularly in high emission areas such as ports, transportation hubs and freight corridors. Finally, VGNA supports the development of a federal EPA GHG Phase 3 regulation as a means of accelerating the adoption of ZEVs in the marketplace.

**Marketplace Realities and the need for National Regulations**

The interstate nature of the trucking industry and the fungibility of MHD truck sales is such that state regulations without underpinning federal support invites unintended consequences, market distortions and winners and losers in the marketplace. Larger fleets with strong sustainability goals or which operate vehicles in the most ZEV favorable applications will be early adopters, while most fleets (approximately 98% of which own 20 trucks or less) will wait until new technologies prove their viability in the market and the necessary infrastructure and financial supports are in place before buying. In the meantime, regulations such as the ACT and the Omnibus Low NOx regulation, if not complemented with other supportive policies, could hurt fleets through limited diesel vehicle availability or higher prices. In turn, this could lead fleets to purchase trucks out of state, leaving dealers and OEMs potentially limited in what they can sell. Alternatively, their risk adverse behavior might lead some to purchase more trucks just before implementation of the regulation and hold trucks longer rather than risking investment in unfamiliar technology.

Volvo Group North America supports the goals of the MOU and encourages states to adopt many of the recommendations in the Action Plan. **However, supporting state adoption of the MOU is NOT the same as supporting state adoption of California's Advanced Clean Truck Regulation or its Omnibus NOx regulation.** Successful integration of ZEV trucks by fleets into their operations requires many supporting policies to be in place (as clearly outlined in the Action Plan). States that adopt the Advanced Clean Truck regulation, with the exception of California, do not have sufficient funding or policies in place to enable the achievement of the mandated volumes, making the singular adoption of the ACT a hollow pursuit of a ZEV future based on little more than hope.

The multistakeholder process of installing infrastructure requires cooperation and partnership. VGNA understands the urgency of our country's air quality and climate change goals and agrees that the achievement of the ZEV penetration rates will be critical to addressing the environmental risks facing our world. We desperately want to achieve and even exceed the goals of the ACT, but it is bad policy to adopt regulations that solely penalize truck manufacturers for the failed achievement of sales targets. Without acknowledgment in the ACT of the interdependence behind the successful deployment of ZEVs, particularly for utilities to ensure grid reliability and availability of necessary charging infrastructure, the Volvo Group cannot support state adoption of the ACT. With regards to the Omnibus NOx regulation, Volvo Group supports the adoption of a robust, technically feasible national NOx emission regulation by the Environmental Protection Agency under its Clean Trucks Plan which will address state air quality concerns while avoiding the negative economic and environmental ramifications that will come from a patchwork of state regulations. In the end, the interstate nature of the trucking industry necessitates federal regulatory actions with state efforts focused on providing policies and programs to further incentivize technology adoption.

Finally, the Action plan appropriately calls for increased federal incentives to support the national development of MHD ZEVs. VGNA applauds NESCAUM for calling for additional tax credits for both ZEV infrastructure and MHD vehicles. While a manufacturer tax credit for MHD ZEVs is one approach, VGNA maintains that the tax credit should be as close to the point of sale as possible to ensure the greatest effect. VGNA fully endorses the points seven and eight in the appendix.

**Light-Duty Experience**

The history of light-duty ZEV adoption provides a real-world example of the insufficiency of a mandate-only plan. The Action Plan cites the ZEV sales mandate for passenger cars passed by California in 1990 and subsequently adopted by multiple states as the impetus behind the substantial growth in the market share of light-duty ZEVs. It should be noted that this Low Emission Vehicle program required zero-emission vehicles to account for 2% of automakers vehicle production and sales in the state beginning in 1998, growing to eventually reach 10 percent of sales in 2003. Nevertheless, this regulation had to be modified many times, with ZEV cars not reaching that 10% goal until 2020. Mandated sales targets were not achieved as

originally forecast due to a multiplicity of reasons, including the lack of supporting policies and education among consumers to foster trust and build demand for the product.

Unlike consumers who are often driven by factors other than efficiency (i.e. prestige) commercial fleets are only purchasing trucks to fulfill a business need. Unless these ZEV trucks can provide a proven TCO, fleets will forgo new technology to minimize the risks that come with it. As states begin following a similar path for heavy-duty vehicles, it is more realistic to consider the ACT ZEV penetration levels as a "goal" against which states can assess the sufficiency of their ZEV supportive policies and programs.

**Utility policies**

It is critical for utilities to dedicate the necessary resources to develop programs, incentives and rates that are conducive to commercial fleet electrification. The timing of the ZEV transition will be contingent upon the availability of charging infrastructure. Utilities should be coordinated and harmonized in their approaches to MHD charging in order to facilitate a timely and efficient transition across MOU states. Dedicated fleet programs and incentives are required to bring prohibitive costs down and streamline grid interconnection processes. Electricity rates must be affordable and predictable for fleets to anticipate a realistic TCO.

VGNA supports the roles for the utility regulators and actions for the electric utilities in the draft Action Plan. However, in order to support the MHD ZEV transition, it is imperative that utility activities and policies be pursued and harmonized across all states that sign the MOU and seek to accelerate MHD ZEV adoption in the marketplace. This will not only take time, but also require significant financial and human resources. For example, providing all necessary service-line extension and make-ready electrical infrastructure on the utility side of the meter for all commercial customers will require a significant financial undertaking for the utilities. Establishing dedicated fleet programs to support the timely transition to MHD ZEVs will necessitate increased staffing in utilities and permitting agencies in all MOU states.

Utilities in all MOU states should immediately begin a stakeholder process to address long-term needs for MHDV charging infrastructure and consider the unique needs of these vehicles compared to passenger cars. This stakeholder process should be an opportunity for all interested stakeholders, including fleets, OEMs, logistics companies, community groups, and others to make their voices heard on these issues. This will help with the localized and macro system capacity assessments and proactively prepare for grid upgrades. Site-specific constraints may arise because of the sudden uptick in electrifying return-to-base applications, thereby severely constraining the circuits. Load management and peak shaving may not be enough to ensure grid reliability. Integration of distributed generation (renewables) and energy storage can help but are very expensive and should be supported by a combination of utility and state agency programs. Subsequently, it is important to ascertain the ability for such an upgrade and the time needed, and then recalibrate the timelines for the adoption of MHD ZEVs (as needed) by working with other state agencies.

While designing commercial rates and customer incentive programs for charging MDHVs is important, impacts of low utilization and high-capacity charging on electricity rates are unknown for MHDVs today. Short-term demand charge holidays are helpful but insufficient with the uncertainty of future demand charging rates adding further complication to calculation of TCO for fleets today.

**Conclusion**

In conclusion, we applaud the work of NESCAUM and its effort to provide meaningful guidance to help states realize that to achieve the goals of the MOU, "considerable resources, new and sustainable sources of funding, and strong and enduring partnerships will be required." We want to help states take the right steps to achieve their ZEV penetration goals. We believe in a ZEV future, and we are counting on states to help ease the risk and cost for the trucking industry as they make this transition to address our national climate and air quality challenges. We look forward to working collaboratively with NESCAUM as well as state policymakers and other stakeholders help create a conducive and successful environment for MHD ZEV adoption in the marketplace.