August 25, 2020

California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Omnibus Low NOx Regulations

Dear Board Members and Staff

The Volvo Group appreciates the opportunity to comment on the proposed Omnibus Low NOx Regulations being heard by the California Air Resources Board (CARB) on August 27. The Volvo Group understands the persistent and challenging air quality issues faced by the state of California, especially in the South Coast and San Joaquin Valley Air Basins, the only two areas in the nation that have an "extreme" classification for nonattainment with the federal ozone standards. Unfortunately, we believe the current regulation, as proposed, will not achieve the desired NOx emission reductions to reach attainment. Instead, it risks undermining the air quality improvements expected from this regulation and the recently passed Advanced Clean Trucks Regulation while imposing economic hardship on the state's fleets, truck dealers and goods movement industry.

The Volvo Group is one of the world's leading manufacturers of trucks, buses, construction equipment and marine and industrial engines. The Group also provides complete solutions for financing and service. The company, which employs more than 97,000 people worldwide, has production facilities in 19 countries and sells products in more than 190 markets. In the United States, it employs more than 13,000 people and has ten manufacturing plants in seven states. In California, the Volvo Group and its dealers employ over 1,000 people with locations in Mountain View, Costa Mesa, Corona, Haywood, Fontana, Stockton, Fresno and La Mirada. The Volvo Group is the only major truck manufacturer that produces all its vehicles for the North American market in the U.S.

Environmental care has been a core value of the Volvo Group since 1973 and we continuously strive to improve the efficiency and emissions profile of our products. We supported the U.S. Environmental Protection Agency's Phase II GHG regulations for heavy-duty vehicles and the Volvo Group has expressed support for a new national NOx emissions standard to further reduce transportation sector emissions.

Heavy-duty truck manufacturers are required to meet significant GHG reductions in 2021, 2024, and 2027 under existing EPA and CARB regulations. The GHG reductions required with each regulatory step are significant, requiring unprecedented levels of R&D spending, full engagement from our global powertrain and vehicle product development teams, extensive product design modifications to all vehicle models and powertrain families as well as enhanced and expanded test cell capabilities.

In addition to the above challenges, the Volvo Group has been investing heavily in the areas of e-mobility, automation and other technologies associated with connected vehicles. We believe these advanced technologies will be critical to achieving fossil-free transportation; however, early market acceptance of these technologies will require significant infrastructure investments and public financial incentives at the state and federal levels to be deployed successfully. Much of this funding is now at risk as federal and state agencies see budgets and new spending priorities adjusted in response to the COVID-19 pandemic.

Similarly, the Volvo Group has been challenged by the pandemic, resulting in temporary production shut-downs, employee layoffs and furloughs, salary reductions and significant decreases in research and development budgets. These actions, together with continued market uncertainties, will require a more measured approach to technology development in the next few years.

The CARB staff's proposed Omnibus Low NOx regulations require significant NOx and particulate matter (PM) reductions, new testing protocols, additional reporting measures, increased warranty and useful life provisions, as well as expanded durability and On-Board Diagnostic (OBD) requirements, all on top of national major GHG requirements which will add significant risks and cost penalties for the Volvo Group, our suppliers, and customers. The technical challenges to meet the proposed emissions limits in concert with the other multiple changes and implications for product availability and cost have been extensively outlined in comments submitted by the Truck and Engine Manufacturers Association (EMA). Those comments are fully supported by the Volvo Group and will not be repeated here.

Unfortunately, neither the significant costs of this regulation nor the resulting market upheaval have been realistically accounted for in CARB's analysis. One need only look back to the 2006-2007 "pre-buy/no-buy era" to see how a technology-forcing PM standard and related concerns about the cost and reliability of diesel particulate filters led to a 47% decline in national Class 8 truck sales in 2007 after reaching an historical high of 284,000 trucks sold in 2006. As past is prologue, one can expect another pre-buy in response to California's new Low NOx standard again in 2022 and 2023 sparked not only by technology-forcing lower NOx emission levels in 2024, but also by the state's existing Truck and Bus Regulation. This latter regulation, requiring all trucks in the state to meet 2010 emissions standards by 2023 will help improve the average fleet age in the state and reduce NOx emissions, but it will simultaneously "lock in" 2023 clean diesel technology among California fleets (due to SB1, by which fleets cannot face a mandatory turnover for 13 years or 800,000 miles). Oddly enough the ramifications of the Omnibus NOx regulations will not only have the unintended consequence of locking in the number of operating trucks with 2010 NOx emission levels on the road, it will also drastically weaken the expected penetration of Zero Emission Vehicles (ZEVs) as stipulated under the Advanced Clean Truck Regulation passed by the Air Resources Board in June of this year.

According to the Advanced Clean Truck Regulation, the mandated percentage of zero emission truck sales is based on a percentage of an original equipment manufacturer's (OEM's) annual diesel sales. As CARB adopts policy encouraging a large pre-buy by fleets in

2022 and 2023, the subsequent dearth of in-state diesel truck sales in 2024 will not only curtail the number of the newest ultra-low NOx diesels on the road, it will also undercut ZEV sales required under the ACT's sales volume mandate.

Conclusion

The Volvo Group recognizes California's air quality challenges and believes that advanced technologies including greater use of ZEVs are needed to help the state achieve its goals. It supports the aggressive federal Phase II Greenhouse Gas regulations that were finalized in 2016 and has advocated for a new, lower federal NOx emissions standard for heavy-duty trucks. National emissions standards are critical for product and market stability, and will aid in accelerating emission reductions in California, since approximately 60% of heavy-duty vehicle miles traveled (VMT) come from out-of-state trucks that are exempt from California standards. Accordingly, the Volvo Group recommends the Air Resources Board defer action on a lower California-only NOx emissions standard and instead focus on policies that promote ZEV vehicle adoption in the immediate term while working toward an achievable national NOx standard.

Respectfully Submitted,

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