

December 29, 2020

VIA EMAIL

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State of Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
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RE: Oregon DEQ's Action Plan for Medium-Duty and Heavy-Duty ZEVs

Dear Rachel and Eric:

The Truck and Engine Manufacturers Association (EMA) appreciates the opportunity to submit additional initial comments regarding the Department of Environmental Quality's (DEQ's) proposed action plan to accelerate the deployment of medium-duty (MD) and heavy-duty (HD) zero-emission vehicles (ZEVs). These initial comments are a follow-up to the discussions that EMA had with DEQ staff on October 16th, and to the information we submitted at that time. While all elements of the DEQ's potential action plan are significant, of particular interest is the DEQ's proposed regulatory action to adopt and opt-in to the California Air Resources Board's (CARB's) Advanced Clean Trucks (ACT) Regulation, as well as CARB's Omnibus Low-NO_x Regulations. EMA was actively engaged in the rulemaking process for both of those regulations.

EMA represents the world's leading manufacturers of MD and HD on-highway trucks and engines. EMA member companies design and manufacture highly-customized vehicles to perform a wide variety of commercial functions, including interstate trucking, regional freight shipping, local parcel pickup and delivery, refuse hauling, and construction – to name a few. EMA member companies are investing billions of dollars to develop MD and HD ZEVs and fully support expanding the market in Oregon for those zero-emission vehicles.

i) **CARB's ACT Rule is not well-suited to the accelerated deployment of MD and HD ZEVs in Oregon**

Previously, on October 20th, EMA sent to the DEQ copies of the detailed comments that EMA filed with CARB regarding its adoption of the ACT Rule. We refer to you those comments again. As they describe, EMA's over-arching concern is that the structure of CARB's ACT Regulation threatens to hinder, not promote, the emerging market for zero-emission commercial vehicles. In brief, the ACT Rule amounts to a naked sales mandate that requires manufacturers to sell a prescribed number of zero-emission medium- and heavy-duty vehicles, without any corresponding ZEV-purchase requirements. Consequently, instead of buying ZEV trucks, fleet customers may simply choose to purchase other less expensive truck technologies, or to continue maintaining their existing trucks.

In that regard, MD and HD ZEVs have higher life-cycle costs and lower utility than conventionally-fueled vehicles, and the ACT Rule fails to consider the significant financial incentives needed to make MD and HD ZEVs an attractive investment for a trucking business. Further, the ACT Rule does not address or provide for the charging infrastructure that will be needed at fleet facilities to operate the mandated ZEVs, the build-out of which will be expensive, complicated, and time-consuming. There are, in essence, three core components to an effective MD/HD ZEV program: sales requirements; corresponding purchase requirements; and significant public investments in ZEV infrastructure build-out and in ZEV-purchase incentives. The ACT Rule attempts to cover only the first component, and so will not result in an effective ZEV program for MD and HD ZEVs.

Oregon's commercial vehicle market includes many distinct segments that each require unique vehicle configurations, and each application has a different level of suitability for HD and MD ZEVs. We estimate that there are at least 70 different market segments for Class 4 through 8 trucks in Oregon, with some applications (*e.g.*, residential parcel delivery) representing reasonable targets for electrification, while others (*e.g.*, plowing snow) are much less suitable. Any analysis of the opportunities for deploying MD and HD ZEVs in Oregon must consider the diverse market segments and include a robust evaluation of each one. Those segments identified as highly suitable may be considered "beachhead" markets, where zero-emission trucks can be deployed first before expanding to other market segments.

As the DEQ staff is well aware, commercial trucks are not just big cars. Unlike the passenger car market where purchasers select from a limited number of vehicle options, commercial fleets provide truck manufacturers with extensive and detailed vehicle specifications so their trucks will meet the particular demands of the fleets' unique operations in the most efficient and cost-effective manner. When a trucking company purchases a commercial vehicle, it is making a significant capital investment in business equipment that it expects to deploy in a manner that will return a profit. Trucks are amortized over longer time periods than cars, and they are assessed, not with regard to subjective criteria such as style and comfort, but solely on the objective basis of performance capability and cost-efficiency. Thus, truck purchasers' decisions turn on detailed up-front assessments of the customized truck's utility for the job at hand, and its purchase price, durability, operating costs, and resale value. In short, a trucking company will only invest in a new commercial vehicle when it will improve the bottom line of their business.

In light of the foregoing, the zero-emission MD and HD vehicle market in Oregon will require significant incentive funding until zero-emission trucks are profitable for trucking businesses. Incentives must be sufficient to offset all of the ZEV truck life-cycle costs that will exceed current commercial vehicle costs, including: (i) higher purchase prices, and increased sales taxes; (ii) operational inefficiencies (*i.e.*, it takes more ZEV trucks to perform the work of conventionally-fueled trucks); (iii) lower residual values; (iv) required investments in new maintenance facilities, training, and parts inventories; and (v) significant investments to install and maintain the necessary charging infrastructure. Additionally, incentives must be available

for an extended period of time so fleets can rely on them in implementing their long-term business plans.

The DEQ also must consider the challenges of developing the requisite charging infrastructure to support zero-emission MD and HD battery-electric trucks —something that CARB’s ACT Rule failed to do. Charging stations must be located at fleet terminals and other depots where trucks are typically parked, and, as noted, developing that infrastructure will be complicated, expensive and time-consuming. Moreover, fleets will need to expand the charging infrastructure over time if they plan to deploy additional battery-electric trucks. Since it may take 24 to 48 months from concept to a having a fully functional charging station in place, the DEQ should establish a primary near-term objective of incentivizing and assisting in the development of an appropriate charging infrastructure to enable the deployment of battery-electric commercial vehicles. Additionally, for fleet applications where fuel-cell electric vehicles may be the better option, hydrogen fueling stations will be needed.

A thorough assessment of what it will take to successfully deploy MD and HD ZEVs should involve a careful evaluation of data generated by existing ZEV deployments. One rich data source is the extensive pilot and demonstration projects in California. California’s Air Quality Improvement Program has funded the deployment of hundreds of zero-emission commercial vehicles in many different applications. More information on those projects is available [here](#). Additionally, the ACT Fleet Forum is a network of North American fleets that deploy advanced and clean truck technologies. The ACT Fleet Forum recently provided its insights into deploying zero-emission truck technologies in comments to the California Air Resources Board that are available [here](#).

In sum, the ACT Rule, with its unilateral ZEV sales mandates and nothing more, is not the regulatory platform on which Oregon should build its program to accelerate the deployment of MD and HD ZEVs.

ii) **CARB’s Omnibus Rule is cost-prohibitive and infeasible, and should not be a component of Oregon’s ZEV strategy**

Based on the discussions held during the DEQ’s recent public workshop on December 15th, we understand that the DEQ also is assessing whether to adopt CARB’s Omnibus Low-NO_x Regulations in tandem with the ACT Rule. On October 16th (via email), EMA previously submitted to the DEQ our detailed comments and concerns regarding the infeasibility and cost-prohibitiveness of the Omnibus Regulations, and we refer you again to those comments as well. As those comments explain very thoroughly, Oregon should not adopt or opt-in to the Omnibus Regulations for numerous reasons, including the following:

- a. The Omnibus Regulations are cost-prohibitive, with costs exceeding monetized benefits by a factor of 8. Cost-prohibitive rulemakings with corresponding fiscal impacts are invalid under California and Oregon law, and cannot qualify for a federal preemption waiver under the federal Clean Air Act (CAA).

- b. CARB has provided insufficient leadtime under the Omnibus Regulations, which is manifestly unreasonable, and which (again) will disqualify CARB (and indirectly Oregon) from obtaining a federal CAA preemption waiver for the Omnibus Regulations.
- c. The Omnibus low-NO_x emission standards and related requirements are inherently infeasible, especially since CARB is providing only two full-years of leadtime for the 2024-2026 MY standards and requirements.
- d. CARB failed to demonstrate the feasibility of the proposed 2024-2026 MY and 2027 MY and later low-NO_x emission standards and related requirements.
- e. The Omnibus Regulations, when coupled with the ACT Rule, would cause fleet operators in Oregon to accelerate their purchases of new HD vehicles before the 2024 MY, and to refrain from purchasing new HD vehicles after the 2024 MY (a “pre-buy/no-buy” response), which would significantly diminish the assumed benefits of opting-in to the CARB Regulations.
- f. The Omnibus Regulations likely will compel HDOH engine and vehicle manufacturers to exit the California market starting in advance of the 2024 MY, which, in turn, would result in a lack of CARB-compliant MD and HD trucks in Oregon, if Oregon opts-in to those regulations.
- g. If HDOH diesel trucks are forced out of the California market as expected, that will frustrate the implementation of the ACT Rule, since the HD ZEV-sales mandates under that Rule are calculated as a percentage of new HD diesel truck sales, which will be significantly reduced, if not eliminated, due to the Omnibus Regulations.

For all of the foregoing reasons, and as further detailed in the materials we submitted on October 16th, the DEQ should not include CARB’s Omnibus Regulation as an element of Oregon’s strategy to promote the deployment of MD and HD ZEVs. CARB’s Omnibus Regulations will suppress the sales of CARB-compliant conventionally-fueled vehicles, which in turn will reduce the efficacy of the ACT Rule, since, as noted, the percentage-sales requirements of that rule are based on the number of sales of conventional trucks. Thus, the net effect of CARB’s Rule, if adopted in Oregon, is more likely to frustrate rather than foster Oregon’s objective to accelerate ZEV truck sales.

iii) **Oregon would be better served by advocating for next-tier nationwide HDOH standards as a “bridge” to ZEVs**

While we do not support the DEQ’s potential opt-ins to California’s ACT and Omnibus Regulations, EMA and its members fully recognize that zero-emission vehicles (ZEVs) are key to the future of the commercial trucking industry. Accordingly, as noted previously, EMA member companies are investing billions of dollars to develop and bring to market MD and HD ZEVs. Our efforts alone, however, will not achieve success. A broad-based transition of the trucking industry to ZEVs will take a determined and concerted effort by federal and state

policymakers, manufacturers, trucking fleets, utilities, and other key stakeholders. During that period of transition, new cost-effective interim standards to reduce NO_x and GHG emissions from conventionally-fueled trucks will be necessary to bridge the gap to the longer-term development and deployment of commercial ZEVs.

More specifically, next-tier nationwide emission-reduction regulations for conventionally-fueled trucks will be key to establishing a cost-effective bridge to heavy-duty and medium-duty ZEVs. To that end, the DEQ along with the other MOU States should work with EMA to advocate for next-tier EPA regulations for HD and MD vehicles and engines that include the following elements:

- Meaningful reductions in the tailpipe NO_x standard.
- New test procedures focused on reducing emissions under lightly-loaded operating conditions typical of urban centers.
- Additional NO_x control under extended idle conditions.
- Next generation “in-use” compliance-assurance protocols to control emissions over a broader range of real-world operating conditions.
- Program elements to ensure compliance over multiple years.
- Continued reduction of GHG emissions.
- Flexible emissions credits to incentivize ZEVs.

Beyond those important regulatory elements, EPA and industry have been discussing the potential utilization of modern sensor technologies and telematic systems to enable each vehicle to be equipped with on-board emissions-monitoring and reporting capabilities. Such systems could continuously track tailpipe emissions and report compliance levels from each representative group of vehicles in the field. Regulators could receive a compliance assessment of the full population of vehicles in the field, and “gross emitters” could be flagged for prompt remedial actions. Such on-board emissions-monitoring capability also could enable the development of more streamlined and optimized OBD capabilities.

EMA encourages the DEQ, along with the other MOU States, to join in EMA’s collaborative work with EPA to assess all of the above program elements as part of a next-tier commercial vehicle rulemaking in 2021, with potential nationwide implementation dates in 2027 and 2030.

While several of CARB’s Omnibus program elements are directionally consistent with those EMA envisions for EPA’s next-tier nationwide rule, CARB will be implementing those elements with unreasonably short timelines, questionable technical feasibility, unsustainable cost-benefit metrics, and material adverse impacts on new vehicle prices and sales volumes. The

overall impacts of CARB's new Omnibus regulations are likely to have extremely negative consequences. In that regard, commercial fleets have not reacted positively in the past to the deployment of major new emissions-control technologies on an accelerated timeline, and, as a result, we fully expect that the significant "pre-buy/no-buy" scenarios that occurred in 2007 with respect to commercial vehicles will be experienced again in California, as well as in any opt-in states.

In addition, and as noted above, commercial vehicle and engine manufacturers likely will be so overwhelmed by the scope, stringency, and timing of CARB's new ACT and Omnibus requirements that there is a strong possibility that some major manufacturers will exit the California market. Those that remain may only be able to offer limited product options to minimize costs and risks. At the recent Board hearing on the Omnibus regulations, CARB staff conceded that only two heavy-duty engine manufacturers have committed to even *try* to develop CARB-compliant products. States outside of California should work to avoid (not opt-in to) those types of adverse market outcomes. Otherwise, the consequences could be severe – both environmentally and economically.

If CARB-compliant products are not available in Oregon, or if the market does not accept the cost and reliability issues associated with the few CARB-compliant products that might be available, fleet operators will accelerate their purchase of new federally-certified vehicles in Oregon, or acquire new trucks in adjacent non-opt-in states, rely more on the used truck market, or simply retain their existing fleet vehicles longer. All of those actions will have a negative impact on air quality and delay progress in the attainment of air quality goals. In addition, to the extent that fleet operators are compelled to acquire new vehicles out-of-state, that would result in a cascading series of negative economic impacts as well. In particular, truck dealerships in Oregon would face significant adverse consequences, and if Oregon-based fleet operators were to choose to relocate out-of-state, significant in-state job losses would result across the wide-ranging trucking sector, including within the goods-movement, warehousing, and truck-servicing and repair sectors.

A far more effective bridge to widespread commercial MD and HD ZEV sales and deployment is through a cost-effective nationwide EPA-implemented lower-NO_x program. Future federally-certified lower-NO_x HD/MD engines and vehicles will ensure that businesses and municipalities in each state have access to the full range of powertrain and vehicle solutions they are accustomed to purchasing today. They will not be forced to pay premium prices for potentially less reliable products, to purchase outside their brand preference, or to seek purchase opportunities in neighboring states. They can maintain profitability without resorting to purchasing used, higher-emitting vehicles, or maintaining their existing fleet longer without the environmental benefits gained from new vehicle purchases.

The significant nationwide NO_x reductions from an EPA lower-NO_x program for commercial vehicles and engines would address any remaining nearer-term air quality attainment issues in Oregon. To the extent that there might be other local needs to reduce emissions from NO_x "hotspots" within the State (*e.g.*, ports), those local needs could be best addressed through

more specific approaches, such as targeted accelerated fleet turnover requirements, alternative fuels mandates, zero-emission vehicle and equipment mandates at specific facilities, and other targeted incentive programs, rather than through the adverse statewide economic and environmental impacts that would result from the adoption of CARB's Omnibus program. Accordingly, Oregon and the other MOU States should work for the implementation of EPA's next-tier HD/MD regulations as the best option for achieving their respective air quality goals during the bridge years before significant ZEV-truck market penetration takes hold.

iv) **The recommended roadmap to a commercial ZEV future**

Transitioning the commercial trucking industry to ZEVs demands a strategic and concerted effort by state and federal policymakers, manufacturers, trucking fleets, utilities, and others. More specifically, successfully bridging to a medium- and heavy-duty ZEV future will require the following steps:

Undertake technical and economic research to:

- Determine the level of incentives needed to overcome the financial barriers to purchasing ZEVs and converting commercial fleets to zero emissions.
- Identify the funding and other potential impediments to building out the necessary electric charging/hydrogen fueling infrastructure.
- Assess the optimal commercial vehicle market segments most suitable for the near-term deployment of ZEVs; properly prioritize and allocate resources for early deployment in those market segments; and establish reasonable pathways to the broader adoption of commercial ZEVs.
- Determine the optimal long-term ZEV power source for each commercial vehicle market segment and the corresponding infrastructure needs (*i.e.*, electricity and/or hydrogen), including generation and storage.

Establish practical, implementable, and effective policies to:

- Incentivize trucking fleet transitions to ZEVs.
- Accelerate the turnover/retirement of older, high-emitting commercial vehicles.
- Target the commercial vehicle applications and markets most suitable for near-term transition to ZEVs.
- Fund construction of the unique charging/fueling infrastructure needed for MD and HD ZEVs, including electricity grid modernization and decarbonization.
- Implement new EPA lower-emission standards for conventionally-fueled trucks on a nationwide basis to allow for broad near-term NO_x and GHG reductions and to help manage the longer-term transition (the bridge) to commercial ZEVs.

- Utilize carbon neutral liquid fuels for interim GHG reductions.

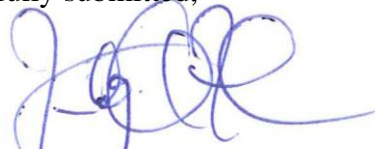
v) **Conclusion**

There is no doubt that ZEVs are the future of the commercial trucking industry, and this roadmap identifies realistic and necessary steps to develop and bring to market medium- and heavy-duty ZEVs. Policymakers and other stakeholders should collaborate on those targeted and holistic strategies to successfully establish the commercial ZEV market. In the meantime, a complementary nationwide EPA bridge program is needed to reduce NO_x emissions from conventionally-fueled commercial vehicles. EMA and its members have already begun aggressively moving down the road toward a ZEV future. We look forward to working with Oregon and other stakeholders to put in place the necessary elements to ensure we reach that shared goal.

Please note that EMA is fully committed to working with the DEQ to assist Oregon in its evaluation of the multiple issues involved with deploying zero-emission commercial vehicles, and in assessing why opting-in to CARB's ACT and Omnibus Regulations is not recommended. To that end, EMA would be pleased to serve on any advisory committee that the DEQ might appoint for this effort. We also would welcome the opportunity to assist in the DEQ's assessment of the fiscal impacts of any potential opt-ins to CARB ACT and Omnibus Regulations.

Thank you for your consideration of these comments, and please let us know when we can arrange a follow-up web meeting to discuss these issues in greater detail. Please contact us at tfrench@clpchicago.com or (312) 929-1954. Thank you again.

Respectfully submitted,



Timothy A. French

cc: Anna Ramos (Ramos.Anna@deq.state.org.us)
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