November 10, 2025

MECA COMMENTS
ON THE PROPOSED AMENDMENTS TO THE
CALIFORNIA ON-ROAD HEAVY-DUTY ENGINE AND VEHICLE OMNIBUS AMENDMENTS

The Manufacturers of Emission Controls Association (MECA) is pleased to provide supportive comments to the California Air Resources Board's (CARB) proposed On-Road Heavy-Duty Engine and Vehicle Omnibus (Omnibus) amendments.

MECA is a non-profit industry association of the world's leading manufacturers of technologies for clean mobility. Our members have supported this industry for over 50 years and have a proven track record in developing and manufacturing heavy-duty engine and exhaust emission controls including sensors and on-board diagnostics (OBD) systems which are critical to this proposal. Our industry has played an important role in the emissions success story associated with all light-, medium- and heavy-duty vehicles in the United States.

MECA supports CARB's ability to set its own standards that often precede and lay the groundwork for federal requirements. This has allowed industry and consumers to gain experience prior to standards being adopted across the country. However, in this case the standards are very similar in most regards with only minor differences in implementation timelines and compliance flexibilities. Therefore, MECA favors harmonization of California Omnibus and EPA HD criteria pollutant emission regulations to establish a national program.

MECA supports the proposed amendments to the Omnibus to align its standards, test procedures, useful life, in-use compliance and average, banking and trading (ABT) provisions to the current US EPA Heavy-Duty Low-NOx Rule for model year 2027 and later engines[1]. Should EPA choose to reconsider federal heavy-duty criteria standards, we would not support harmonization with

[1] https://www.epa.gov/regulations-emissions-vehicles-and-engines/final-rule-and-related-materials-control-air-pollution

weaker nitrogen oxide (NOx) and particulate matter (PM) standards. However, we would support a change to the final warranty requirements as outlined below.

With less than one year before implementation, our members have made hundreds of millions of dollars in investments and are working with their OEM customers to integrate technologies that will meet upcoming emission requirements. We estimate the cost of the hardware to meet these standards along with higher durability requirements (without added warranty requirements) for a Class 8 truck to be $1,500 to $2,050, which is in close agreement to EPA's estimate of $2,316 in the rulemaking.[2] These numbers have been corroborated by an independent cost analysis by the ICCT.[3] Based on the average purchase price of a class 8 sleeper tractor of $160,000 (calculated from $145,000 in 2021 and 2.5% annual increase)[4], the incremental cost is only 1.5% of the purchase price of a new truck.

As noted above, the hardware costs were estimated without inclusion of new warranty requirements, also finalized by EPA for MY 2027 and later trucks. There is greater disagreement on the costs associated with meeting the extended warranty provision of the Heavy-Duty NOx Rule, with some estimates for longer warranty being equal to multiple times the cost of hardware.[5] The difficulty in estimating warranty costs is due to considerable uncertainty about the state of vehicles during the time of operation beyond today's 100,000-mile warranty. Much of the data on warranty claims and repairs as well as vehicle use characteristics originate from the time when the first owner operates a vehicle while data from repairs made by second and third owners is very limited. Without warranty claim information beyond 100,000 miles, it is difficult for suppliers to estimate the cost impact of a warranty period out to 450,000 miles.

We believe revising the warranty requirements to the level required of today's trucks (100,000 miles)—while retaining the 2027 emission limits—can significantly address the cost concerns of fleets that operate these trucks for their business. Any fleets wanting longer warranties can purchase extended warranties already offered by OEMs for their customers. MECA's cost analysis, which was provided to EPA and corroborated by several other studies, demonstrates the impact of reconsidering only the warranty requirements (i.e., keeping today's warranty) while retaining the model year 2027 and later criteria pollutant limits. We estimate this will result in 50-65% lower per-vehicle costs than originally projected, while achieving public health goals through the previously finalized cost effective and achievable emission standards in the Heavy-Duty NOx Rule.

Alignment of the Omnibus with the current EPA Heavy-Duty Low-NOx Rule is advantageous because it will ensure economies of scale, reducing product development and certification costs. The resulting national regulation will ensure consistency of new vehicles entering the in-use fleet

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[2] https://www.govinfo.gov/content/pkg/FR-2023-01-24/pdf/2022-27957.pdf

[3] https://theicct.org/publication/estimated-cost-of-diesel-emissions-control-technology-to-meet-the-future-california-low-nox-standards-in-2024-and-2027/

[4] https://theicct.org/wp-content/uploads/2022/01/Final-Report-eTruck-Virtual-Teardown-Public-Version.pdf

[5] https://www.truckandenginemanufacturers.org/file.asp?F=Exhibit+B+Ricardo%2Epdf&N=Exhibit+B+Ricardo%2Epdf&C=documents

and in particular with long haul trucks that operate across North America. This will not only reduce new vehicle costs for the trucking industry but also facilitate heavy-duty inspection and maintenance programs across the U.S. as has been the case for heavy-duty standards for the past 15 years.

The MY 2027 emission limits were derived from years of technology demonstration and testing at Southwest Research Institute (SwRI) under CARB and EPA contracts that began in 2014 and have been enhanced under multiple phases to expand duty cycles, technologies and engines. While CARB initiated the demonstration program and co-funded the work of Stages 1 through 3, the Omnibus was finalized before EPA's portion of the demonstration program was completed. This additional work could not be considered by CARB prior to finalization of the Omnibus but was integral to EPA's final Heavy-Duty Low-NOx Rule. This further supports harmonization of the Omnibus with EPA's regulation.

MECA and our members have committed millions of dollars in funding and in-kind contribution of hardware to the SwRI program to demonstrate multiple pathways for meeting a 90% reduction in NOx while not increasing GHG emissions and controlling other regulated and unregulated pollutants. This seminal demonstration program also benefited from in-kind contribution from Volvo and Cummins who provided engines and calibration assistance, funding from South Coast AQMD and the Port of Los Angeles, among others, to deliver a robust technology feasibility demonstration through partnership between industry and regulators.

There is widespread global acceptance of DOC, DPF and SCR technologies as best available control technology (BACT) for heavy-duty highway vehicles. This fact speaks to the performance and durability of these technologies. Since 2010[6], sales of Class 4 through 8 heavy-duty trucks are approaching 7 million in the United States, which has yielded 15 years of driving experience with DOC/DPF/SCR emission control technologies. Detailed information on technology feasibility and acceptance can be found in our comments to both EPA and CARB rulemakings.[7]

Multiple engine manufacturers have already presented their MY2027 diesel engines in press releases, on their websites and at industry tradeshows over the past year indicating their readiness to comply with the current Heavy-Duty Low NOx standards. Their solutions have included improved in-cylinder designs, a 48V alternator and an electric heater with improved SCR catalysts to yield weight neutral solutions while maintaining current engine power ratings and payloads. Of paramount importance, the introduction of these advanced engines will provide greater air quality benefits which will be sustained throughout the lifetimes of all heavy-duty vehicles operating in California and nationwide.

As noted above, clean mobility suppliers have made significant investments to produce and deliver the technologies to meet the model year 2027 and later standards and these

[6] https://fred.stlouisfed.org/series/HTRUCKSSAAR
[7] https://www.regulations.gov/comment/EPA-HQ-OAR-2019-0055-1320;
https://ww2.arb.ca.gov/sites/default/files/BARCU/barcu-attach/59-hdomnibus2020-WzZRMlIwBTdRCAdr.pdf

amendments, which create a single national regulatory structure, will protect these investments in manufacturing and jobs.

MECA urges CARB to move forward to finalize the adoption of these amendments to align 2027 and later model year requirements with EPA's Clean Truck Rule to ensure the timeline to introduce these engines is retained.

In closing, our industry remains committed to working with CARB on the challenges and opportunities that lie ahead to achieve the goals of the Omnibus regulation.

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