

## Executive Summary of EMA's Comments on EPA's Proposed Rule for Heavy-Duty Engine and Vehicle Standards

### Overview

The U.S. Environmental Protection Agency (EPA) [released a proposed rule](#) that presents [two potential paths](#) to reduce the remaining 1-2% of tailpipe nitrogen oxide (NO<sub>x</sub>). The proposed rule presents two options: Option 1, a two-step program to achieve a 90% reduction (from 0.2 to 0.02) in remaining NO<sub>x</sub> emissions by Model Year (MY) 2031, and Option 2, a single-step 75% reduction (from 0.2 to 0.05) by MY 2027. View a one-page summary of the rule [here](#).

Manufacturers cannot commit to building Option 1 compliant diesel engines. If EPA finalizes Option 1, EPA will, in effect, prohibit heavy-duty on-highway (HDOH) diesel engines as of 2027. That would have enormous ramifications for the economy and security of this country.

An Option 2-like program also includes plenty of risks of manufacturers not being able to implement the type of viable comprehensive HDOH low-NO<sub>x</sub> program that all stakeholders support.

EPA will need to fashion a final rule that can meet the broader goal at issue — to build a cost-effective and accessible regulatory bridge to a zero-emission truck future. To that end, EPA will need to finalize just one set of standards to take effect in model year MY 2027, not multiple regulatory steps with multiple standards phasing-in through 2031 and beyond.

Listed below is a summary of the Truck and Engine Manufacturers Association (EMA) comments in response to the proposed rule. EMA represents the world's leading manufacturers of HDOH engines and vehicles.

### Areas of Agreement

EMA agrees with EPA that:

- (i) The NO<sub>x</sub> emission standards for HDOH vehicles should be reduced substantially starting in model MY 2027, perhaps by as much as 75% from the current standards.
- (ii) The current not-to-exceed (NTE)-based in-use testing protocols to assess the in-use emissions performance from HDOH engines and vehicles should be revised to cover all in-use operations and should, at least in part, incorporate a moving average window ("MAW")-based "binning" scheme for assessing those in-use emissions.
- (iii) The current emission warranty and useful life periods for HDOH engines and vehicles should be expanded significantly from the current requirements to increase the durability and efficacy of in-use emissions compliance.
- (iv) The multiple aftertreatment components that the Southwest Research Institute (SwRI) has configured and assessed in testing its "Stage 3" prototype engine systems should be utilized by manufacturers to achieve optimal NO<sub>x</sub> emission reductions from HDOH engines starting in MY 2027.

- (v) A new low-load cycle (LLC) and related emission standards should apply to the certification of HDOH engines starting in MY 2027.
- (vi) The proposed NO<sub>x</sub> rulemaking should serve as a cost-effective bridge to the transition of medium- and heavy-duty zero-emission vehicles (ZEVs) in as many applications as possible, and as soon as practical.

Considering all these major points of agreement, EMA is hopeful that EPA's final rule will be consensus-based, highly cost-effective, and fully implementable starting with the 2027 MY.

### **Proposed Changes to Rule**

To ensure the adoption of fully achievable and cost-effective HDOH low-NO<sub>x</sub> regulations, and notwithstanding our broader agreement, EPA should revise the proposed standards in the following manner:

- (i) Any NO<sub>x</sub> program that EPA finalizes must be a one-step program with one set of new standards, not a multi-step program with increasingly stringent requirements.
- (ii) The pending rulemaking needs to be truly cost-effective to ensure that the market is fully receptive to the new low-NO<sub>x</sub> vehicles. Otherwise, fleet turnover will be stalled or delayed, which will diminish the envisioned benefits of the low-NO<sub>x</sub> regulations. Fashioning a final rule that will not impede fleet turnover will help to ensure that the reasonably estimated benefits from this rulemaking can be achieved.
- (iii) Manufacturers will not produce Option 1-compliant products because the Option 1 standards are not feasible. Accordingly, the certification standards for NO<sub>x</sub> must be set at Option 2-like levels, not 0.02 g/bhp-hr. Otherwise, the standards will fail to provide the requisite compliance margins, which will render them infeasible in practice, and will cause unacceptable compliance and recall risks for manufacturers.
- (iv) The proposed extended emission warranty and useful life (UL) requirements should be reduced sufficiently to ensure that manufacturers are not required to assume that they will need to replace aftertreatment systems during the extended warranty/UL periods.
- (v) The proposed 3B-MAW in-use compliance protocol should be revised based on a modified sum-over-sum protocol, with a separate in-use idle standard, to guard against additional potential infeasibility issues, especially those associated with the proposed medium/high load "Bin-3" standards.
- (vi) The proposed in-use standards should be adjusted to account for the measurement variability and capabilities of portable emission measurement systems ("PEMS"), and to reflect the fact that the current on-board diagnostics (OBD) thresholds will not be able to screen-out potentially malfunctioning vehicles, as is done under the current in-use testing program. While EMA agrees with EPA that the in-use standards should be reduced, the safeguards to ensure proper vehicle screening and to guard against "false" or otherwise unwarranted failures need to be retained.

- (vii) As EPA suggests in, the final rule should include higher interim NO<sub>x</sub> standards for a sufficient number of years to allow manufacturers to gain in-field experience with the additional emission-control technologies that will be required, and to gather real-world data to assess how those systems perform and age under real-world operating conditions out to the extended useful life periods.
- (viii) The proposed NO<sub>x</sub> program should be revised so that there is a better overall match of the program's costs and monetized health benefits, and, as noted, to guard against counter-productive pre-buy/no-buy market responses.

Finally, EMA is adamant the current Phase 2 greenhouse gas (GHG) standards should not be revised. The Phase 2 standards appropriately incentivized manufacturers to accelerate the deployment of medium- and heavy-duty ZEVs.

To read EMA's comments in full, [click here](#).