



Clerks' Office  
California Air Resources Board  
1001 I Street  
Sacramento, California 95814

July 6, 2021

Re: Comments in Response to the Proposed Amendments to the Heavy-Duty Engine and Vehicle Omnibus Regulation and Associated Amendments (HD Omnibus Regulation) – Second 15-Day Notice

Dear Sir or Madam:

Cummins Inc. appreciates the opportunity to provide comments regarding the California Air Resources Board's (CARB) Proposed Amendments to the Heavy-Duty Engine and Vehicle Omnibus Regulation and Associated Amendments (HD Omnibus Regulation) or second "15-day" notice. As stated in our August 25, 2020 comments to CARB's 60-day proposal<sup>1</sup>, we understand the unique air quality issues California faces and share CARB's goal to improve real-world oxides of nitrogen (NOx) emissions from heavy-duty vehicles.

In our August comments, Cummins shared its intent to work towards meeting the proposed model year (MY) 2024 0.050 g/bhp-hr NOx standard with advanced technology internal combustion engines and powertrains, including alternative fuel options, while highlighting concerns associated with the proposal's shortened lead times, uncertainties associated with sweeping changes to certification and compliance requirements, and negative cost impacts associated with significantly more stringent emissions warranty and useful life requirements. Those concerns remain.

In our June 4, 2021 comments to CARB's 30-day proposal<sup>2</sup>, we additionally requested CARB to

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<sup>1</sup> <https://www.arb.ca.gov/lists/com-attach/35-hdomnibus2020-VTYBclwwU20KZQdp.pdf>

<sup>2</sup> <https://www.arb.ca.gov/lists/com-attach/99-hdomnibus2020-AWJUJwFtBzkBbgNt.pdf>

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provide flexibilities to address underserved customers due to manufacturers' limited product offerings for vocational applications in the early years of the program. CARB's latest 15-day notice proposes a transitional flexibility to allow manufacturers to certify legacy diesel engines meeting current NOx and particulate matter (PM) emissions standards, limited to 45% and 25% of a manufacturer's total California diesel sales in MY 2024 and 2025, respectively. To offset the higher NOx and PM emissions of the legacy engines, CARB proposes a three-tiered approach. First, a manufacturer must exhaust MY 2022 or later HD zero-emission powertrain credits to offset the legacy engine deficit. If a manufacturer cannot obtain sufficient zero-emission powertrain credits, or credits are only available for a price exceeding a \$4,000 cost cap defined in the regulation per medium heavy-duty (MHD) legacy engine, a manufacturer (with Executive Officer approval) may use MY 2010 or later diesel engine credits to offset the legacy engine deficit. If necessary, a deficit balance may be carried over until the end of MY 2026, but at 1.25 times the remaining deficit. Finally, if a manufacturer has insufficient credits to offset the deficit at the end of MY 2026, the manufacturer must submit a plan for Executive Officer approval to carry out an emissions mitigation project targeted at California's disadvantaged communities to fully offset the deficit within five years.

Cummins appreciates and supports CARB's intent to provide additional flexibility as manufacturers transition to meeting the new, more stringent Omnibus requirements. However, a few important changes are required to ensure manufacturers have the certainty and clarity they need to implement the proposed provisions and can address customers' needs for the transitional products without market disruptions. Cummins offers these recommended changes, which are essential to providing that certainty and clarity. As we have done throughout the rulemaking process, Cummins will continue to work with CARB and other stakeholders to finalize the necessary changes to support our customers while protecting the environment.

### **Changes are needed to provide more upfront certainty on CARB approval and clarity on costs associated with manufacturers' mitigation plans**

In the 15-day proposal, manufacturers must first attempt to offset legacy engine deficits with zero-emission powertrain credits they have generated themselves or bought from other manufacturers. The sale of HD zero-emission vehicles (ZEV) and the availability of zero-emission credits are uncertain, especially in MY 2022 and 2023, when manufacturers stand to earn more credit from ZEV sales compared to MY 2024 or later, but CARB's Advanced Clean Trucks ZEV sales mandates have not yet taken effect. In the 15-day change notice, CARB acknowledges the



uncertainty associated with acquiring zero-emission credits by offering manufacturers a potential fallback plan of using traditional diesel engine credits from the same averaging set to offset legacy engine deficits. However, Cummins is not aware of the existence of any banks of MY 2010 or later diesel NOx or PM credits. Because we are not expecting sufficient credits from either the zero-emission or diesel averaging sets to be available, Cummins' most significant concern with CARB's 15-day proposal is the uncertainty related to the manufacturer's mitigation project plan.

As proposed, it is not until the end of MY 2026 that a manufacturer submits a mitigation project plan for CARB Executive Officer approval. The provisions allow for a manufacturer to submit a contingency plan earlier, but only to be "assessed" by CARB, not "approved". As written, that would not work, but because the remainder of that regulatory section pertains to approvals, CARB should clarify its intent by replacing the word "assessed" with "approved". Otherwise, manufacturers would not participate in this space by offering MY 2024 and 2025 legacy engines without knowing up front what their financial liability would be, in the likely event that sufficient zero-emission and/or diesel engine credits would not be available. Without changes to the currently proposed regulation, we see no viable path for manufacturers to appropriately price and sell legacy engines. Because the mitigation plan's cost would remain unknown until the plan is approved at the end of 2026 (as written), there would be no certainty of financial liability, which is needed now for pricing and selling MY 2024 and 2025 legacy engines. As a result, applications requiring legacy engines may go unserved. Therefore, we recommend that the regulatory language should prescribe an explicit path for manufacturers to seek and gain early CARB final approval for mitigation projects at any time, without waiting until 2026. Only after CARB final approval of a mitigation plan would any manufacturer be able to assess the financial liability of the transitional flexibility for the purpose of appropriately pricing and selling legacy engines. To clarify, even once a manufacturer receives CARB's approval for its post-2026 mitigation plan, the manufacturer still would be required to use ZEV credits and other credits first, to the greatest extent specified in CARB's regulations, through 2026.

**Changes are needed to provide more certainty in the availability of credits and clarity on the anticipated costs of acquiring them**

The proposed amendments specify a \$4,000 cost threshold above which a manufacturer is not required to buy zero-emission credits and may seek approval to use diesel engine credits to offset legacy engine deficits. The \$4,000 cost cap is described by CARB as the cost of credits sufficient to offset one MHD legacy engine. The cost of credits to offset one heavy heavy-duty (HHD) legacy



engine is not defined. Cummins believes that the proposed cost cap of \$4,000 will be too high for many of our customers. In Table IX-5 of the Initial Statement of Reasons<sup>3</sup> released with its 60-day proposal, CARB estimated the incremental cost for diesel engines to meet the proposed MY 2024 and 2025 standards as \$1,550 for MHD engines and \$2,466 for HHD engines. Those are the costs CARB used in its cost-to-benefit analysis to justify the Omnibus rule. Manufacturers and their customers should not be forced to pay more for credits to offset legacy engines than what CARB projected it would cost to comply with the standards. Therefore, the cost cap for zero-emission credits should be set at \$1,550 for MHD engines and \$2,466 for HHD engines. CARB's proposed cost cap is more than double, effectively creating a "two-for-one" credit requirement. Furthermore, it is important to specify the cost cap for HHD engines in the regulation as well as MHD, so manufacturers have clarity on how much they may need to spend to acquire zero-emission credits to price HHD legacy engines accordingly.

As noted above, the proposed restrictions requiring the use of zero-emission credits and MY 2010 or later diesel credits, neither of which exist today, do not provide the certainty needed by manufacturers to ensure product availability for customers. Cummins has offered CARB recommendations intended to provide additional certainty around the availability of credits. Our June comments in response to CARB's 30-day notice called for CARB to allow the use of manufacturers' hard-earned pre-2010 credits, even if at a discount. As noted in our comments, EPA envisioned an unlimited lifetime for those credits. By declaring them valueless, CARB decreases the incentive for manufacturers to generate credits in the future. CARB should change the requirements to allow manufacturers to use pre-2010 credits to offset legacy engine deficits. At a minimum the retirement of pre-2010 credits should be considered in the mitigation plan.

Another existing source of credits are engines already certified to CARB's Optional Low NOx standards. Currently, CARB prohibits those from generating NOx credits, even though they are certified well below today's standard (e.g., natural gas engines certified to 0.02 g/bhp-hr NOx). CARB should recognize the investment by manufacturers to develop those engines, and their positive impact on the environment, by allowing those engines to generate credits and still qualify for incentive programs. CARB should remove its restrictions on participating in averaging, banking, and trading (ABT) programs in §1956.8 and §86.xxx-11.B that prevent those engines from earning credits. At the very least, CARB should remove the two-year pull-ahead of MY 2024 requirements associated with alternate OBD thresholds, which are certification roadblocks to earning credits in

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<sup>3</sup> <https://ww2.arb.ca.gov/sites/default/files/classic/regact/2020/hdomnibuslownox/isor.pdf>



MY 2022 and 2023, even without incentives.

Finally, similar to provisions in CARB's Advanced Clean Truck rule, CARB should encourage the transition to zero-emissions powertrains by allowing up to 75% NOx/PM credit in the Omnibus program for near-ZEV such as range-extended battery-electric powertrains, based on the all-electric range.

**Changes are needed to provide additional compliance certainty by recognizing more products meeting the CARB standards in the calculations**

As proposed, a manufacturer's sales volumes of legacy engines in MY 2024 and 2025 are limited as percentages of their total California diesel sales. Limiting the volumes based on diesel sales does not encourage or recognize manufacturers' investments in other technologies to meet California standards and customers' needs. CARB should allow manufacturers to include their heavy-duty Otto-cycle engines in total California sales for the percentage calculations, not just diesel engines.

**Cummins is committed to continue working with CARB to ensure a successful final rule**

Without regulatory certainty that manufacturers can obtain CARB approval of mitigation plans before they release legacy engines, we do not see a workable path for manufacturers to offer these engines to customers. Cummins urges CARB to make changes in the regulatory text to provide the necessary certainty to ensure customers for these engines are not underserved. In addition to this concern and others highlighted above, additional technical comments are included in the Appendix. Cummins is committed to continuing to work with CARB and other stakeholders to ensure the final rule is successful for the environment, for the people of California, and for our customers. For questions, please contact me: [jackie.m.yeager@cummins.com](mailto:jackie.m.yeager@cummins.com).

Sincerely,

*Jackie M. Yeager*

Jackie M. Yeager

*Director – Emissions and Fuel Efficiency Policy*

*Product Compliance & Regulatory Affairs*

*Cummins Inc.*



## Appendix – Additional Recommended Changes to the HD Omnibus Regulation

**Legacy engine requirements** – §1956.8(a)(2)(C)3.a and §86.xxx-11.B.5.3.5.1 set forth proposed criteria for certification of legacy engine families. The criteria appropriately allow for legacy engines to meet 2023 requirements in several areas. However, there are many other provisions not mentioned where 2023 (rather than 2024) requirements should be applicable to legacy engines, such as §86.xxx-30.B carry-over provisions, §86.010-38 fuel requirements, Subpart T manufacturer-run in-use testing, §1065.518.B pre-conditioning, §1065.680.B IRAF calculations, §1065.935.B range and drift provisions, §2140 in-use compliance testing, Title 13 warranty reporting and corrective actions, and perhaps more. Additionally, the new in-use idling compliance test of §86.1370 B.7 should not apply to legacy engines. CARB should revise the legacy engine requirements such that 2023 requirements will apply for these provisions and others that may be identified after a more thorough review. The most straightforward remedy would be for CARB to follow a similar approach as taken in §1956.8(a)(2)(C)2.a in specifying requirements for certifying engines at or above 525 hp.

**PM FEL cap for legacy engines** – §86.xxx-15.B.(3)(i)(1)(G) specifies the family emission limit (FEL) cap for PM as 0.010 g/bhp-hr for MY 2024 and later engines. However, the PM standard for legacy engines is the 2023 standard of 0.01 g/bhp-hr, with two digits after the decimal point instead of three. CARB should revise (G) to specify a PM FEL cap of 0.01 g/bhp-hr for MY 2024 and 2025 legacy engines, to be consistent with the applicable PM standard for legacy engines.

**Deficit carry-over** – In §1956.8(a)(2)(C)3.b.v. and §86.xxx-11.B.5.3.5.2.(e), CARB proposes that NO<sub>x</sub> and PM deficits generated by legacy engines are subject to the provisions of §86.004-15.A.(b)(5), which says ABT compliance will be determined at the end of the model year, and engine families without adequate credits will violate the conditions of the certificate of conformity. The proposed language conflicts with language elsewhere in the legacy engine provisions which proposes that legacy engine deficits may be carried over until the end of MY 2026 under certain conditions. CARB should revise the proposed language of §1956.8(a)(2)(C)3.b.v. and §86.xxx-11.B.5.3.5.2.(e) to clarify that an exception to §86.004-15.A.(b)(5) is allowed for the carry-over of legacy engine deficits through the end of MY 2026.