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PACCAR Inc.
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July 14, 2025

California Air Resources Board
1001 I Street,
Sacramento, California 95814

RE: Notice of Public Hearing to Consider Proposed Amendments to the Advanced Clean Trucks Regulation and the Zero-Emission Powertrain Certification Test Procedure

Dear Members of the California Air Resources Board,

PACCAR is a global technology leader in the design, manufacture and customer support of premium medium- and heavy-duty trucks under the Kenworth, Peterbilt and DAF nameplates. PACCAR also (i) designs and manufactures advanced diesel engines and battery electric vehicles, (ii) provides financial services and information technology, and (iii) distributes truck parts related to its principal business. PACCAR is committed to advancing clean transportation technologies and delivering industry-leading environmental performance across our brands.

PACCAR appreciates the opportunity to provide comments on the Proposed Amendments to the Advanced Clean Trucks (ACT) Regulation and the Zero-Emission Powertrain (ZEP) Certification Test Procedure (hereafter “Proposed Amendments”).

PACCAR appreciates the added flexibilities incorporated in the Proposed Amendments. These flexibilities are essential to fostering a collaborative environment

where manufacturers and stakeholders can work together to reach our shared goals for improved air quality and sustainable transportation. In this spirit of constructive engagement, we respectfully submit the following comments on specific provisions in the Proposed Amendments.

In summary, and as described further below:

- CARB should remove the proposed minimum AER requirement beginning in model year 2030 and instead award credits proportionally based on the available AER multiplied by the 0.01 factor outlined in section 1963.2(b)(1), which will incentivize manufacturers to invest in developing plug-in hybrid electric vehicles and encourage more widespread electrified powertrain development across vehicle classes.
- CARB should not adopt the proposed 20% credit reduction for Class 2b–8 to Class 7-8 tractor vehicle conversions or the proposed 1,000/model year credit transfer cap.
- CARB should add deficiency provisions to the proposed Section 1956.8(a)(8), California Standards and Test Procedures for New 2021 and Subsequent Model Heavy-Duty Zero Emission Powertrains – Proposed Regulation 1.
- CARB should add provisions to the proposed ZEP Regulation that allow running changes and field fixes after the first year of production.

1. CARB Should Revise its Proposed Section 1963.2(b)(2) – Minimum AER Requirement

The Proposed Amendments lower the minimum AER for 2030 model year and beyond NZEVs from 75 miles to 45 miles as a condition to earn ACT credits. PACCAR acknowledges this reduction as a positive step toward facilitating the introduction of plug-in hybrid electric vehicles (PHEVs) in the heavy-duty truck sector. However, retaining any minimum AER requirement creates a barrier to earning credits, thereby diminishing manufacturers' incentives to invest in and develop PHEVs. To better support market introduction and PHEV innovation, PACCAR recommends eliminating the minimum AER requirement entirely. Instead, credits should be awarded proportionally based on the available AER multiplied by the 0.01 factor outlined in section 1963.2(b)(1). This approach would provide a more equitable and flexible framework, encouraging wider development of electrified powertrains across various vehicle classes.

Additionally, PACCAR respectfully requests CARB remove the NZEV credit cap of 0.75 credits and allow manufacturers to earn a full credit for vehicles with extended electric range. This change would further incentivize the development of higher-range PHEVs, accelerating emissions reductions.

2. CARB Should Reconsider the Percent Value Reduction and the Transfer Cap in Proposed Section 1963.3(c)(3) – Flexibility to Convert Class 2b–8 Credits to Class 7–8 Tractor Credits

The Proposed Amendments allow manufacturers to convert surplus Class 2b–8 group credits to Class 7–8 tractor group credits at 80% of their original value, subject to a cap of 1,000 credits per model year. PACCAR appreciates CARB’s intent in proposing this flexibility as an additional means to address the Class 7-8 tractor class compliance challenge. However, we disagree with the proposal to further reduce the credit value for Class 2b–8 vehicles when converted to Class 7-8 tractor credits. The current weight class modifiers already account for differences in credit values by vehicle class; applying an additional 20% reduction diminishes the utility and attractiveness of this flexibility, deterring its use. This proposed additional credit reduction also undermines real-world emissions reductions since the credits were initially earned based on emissions reductions in specific weight classes. Reducing the credit value as a condition to transfer the credit doesn’t support additional emissions reductions, but rather, disincentivizes emissions reductions in weight classes that could more easily support zero emission vehicles. Furthermore, the proposed cap limiting credit transfers to a maximum of 1,000 per model year is an unnecessary restriction. This limitation will constrain the potential growth and deployment of zero-emission vehicles in higher-acceptance markets (i.e., Class 2b-8).

PACCAR recommends that CARB does not adopt the proposed 20% credit reduction for Class 2b–8 to Class 7-8 tractor vehicle conversions or the proposed 1,000/model year credit transfer cap. We believe that these revisions to the Proposed Amendments will

maximize the utilization and impact of the proposed flexibility, thereby supporting broader market penetration of zero-emission trucks.

3. Section 1956.8(a)(8), California Standards and Test Procedures for New 2021 and Subsequent Model Heavy-Duty Zero Emission Powertrains – Proposed Regulation 1 Should Include Deficiency Provisions

The current HD ZEP regulation contains many references to 13 CCR 1971.1 regarding diagnostic communication and also contains diagnostic requirements. While these elements are critical driver and service interfaces, the proposed [regulation as currently written creates an untenable situation in which there is no pathway to certification if even minor deficiencies occur during the test procedures. By contrast, section 1962.5(g) of the Advanced Clean Cars II (ACC II) for LD ZEVs and section 1971.1(k) for normal [HD OBD engines allow CARB to grant deficiencies for minor non-conformities, providing a more reasonable pathway to certify.

PACCAR respectfully requests CARB add a deficiency provision to the section 1956.8(a)(8) certification section modeled after 40 CFR 86.010-18 (n), as well as a disclosure requirement in the letter of intent, similar to the HD OBD cover letter content requirements in section 1971.1(j)(2.16).

4. The ZEP Regulation Should Include Provisions that Allow Running Change and Field Fixes After the First Year of Production

The current HD ZEP regulation only supports Running Changes (RC) for software or component improvements during the calendar year of the Model Year production (see C1.1.5 – excerpted below for reference). There is no provision to support Field Fixes (FF) after the first year of production. It is not clear how or if the Zero Emission Powertrain can

be updated if improvements or necessary component changes are needed later in the vehicle's life. PACCAR respectfully submits that CARB should add a RC/FF provision similar to 13 CCR 1971.1(m) that would allow a manufacturer to maintain the same RC/FF process used in engines.

- 1.5. Manufacturers may add or modify powertrain configurations within a family (or subfamily) mid-MY provided that the affected components are not part of the battery module. If the manufacturer adds or modifies powertrain configurations, the manufacturer will be required to notify the Executive Officer of these changes within 30 days of the completion of the MY in which the changes took place, and the affected subfamilies. Manufacturers will be required to distinguish the powertrain configurations by powertrain serial number or using a combination of build date and a manufacturer-designated model code.

PACCAR appreciates the opportunity to submit these comments.

Sincerely,

A handwritten signature in blue ink, appearing to read 'C Webb', with a stylized flourish at the end.

Cynthia Webb

Director of Emissions Compliance

PACCAR Inc