

December 6, 2024

Submitted via https://ww2.arb.ca.gov/lispub/comm/bclist.php

California Air Resources Board 1001 I Street Sacramento, California 95814

RE: Proposed Amendments to the Advanced Clean Trucks Regulation and the Zero-Emission Powertrain Certification Test Procedure

To Whom It May Concern:

The Alliance for Automotive Innovation (Auto Innovators)¹ appreciates the opportunity to provide comments on the second 15-day Proposed Amendments to the Advanced Clean Trucks Regulation and the Zero-Emission Powertrain Certification Test Procedure.

Complete Medium-Duty Vehicle Certification

Auto Innovators agrees with CARB's proposed change to 13 CCR 1963.2(i) that provides added clarity on the elements of ACC I test procedure needed to certify. We also request that CARB consider allowing newer versions of industry standard test procedures:

- BEV Test Procedure Reference SAE J1634-2012
- PHEV Test Procedure Reference SAE J1711-2010
- FCEV Test Procedure Reference SAE J2572-2008

Credit Generation for Incomplete Class 3 Vehicles

Auto Innovators agrees with the changes in this second 15-day notice to provide Class 2b incomplete vehicles with the same certification options as complete Class 2b/3 ZEVs under section 1963.2(i).

Auto Innovators requests, however, that CARB make the same provisions available to incomplete Class 3 vehicles as they can only certify to ZEP or ACC II 1962.4 pathways. Auto Innovators asks that CARB allow optional inclusion of incomplete medium-duty ZEVs from 10,001-14,000 lbs. GVWR in section 1963.2(i).

Specifically, Auto Innovators requests that CARB allow incomplete Class 3 vehicles to meet the requirements of either the Zero-Emission Powertrain Certification Regulation in 13 CCR section 1956.8(a)(8) and 17 CCR section 95663(d), 13 CCR section 1962.2, 13 CCR section 1962.4, or the certification procedures in sections B, D, and F(1-5) of the "California Exhaust Emission Standards

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¹ Auto Innovators represents the full auto industry, including the manufacturers producing most vehicles sold in the U.S., equipment suppliers, battery producers, semiconductor makers, technology companies, and autonomous vehicle developers. Our mission is to work with policymakers to realize a cleaner, safer, and smarter transportation future and to maintain U.S. competitiveness in cutting-edge automotive technology. Representing approximately 5 percent of the country's GDP, responsible for supporting nearly 10 million jobs, and driving \$1 trillion in annual economic activity, the automotive industry is the nation's largest manufacturing sector. www.autosinnovate.org.

and Test Procedures for 2018 and Subsequent Model Year Zero-Emission Vehicles and Hybrid Electric Vehicles, in the Passenger Car, Light-Duty Truck and Medium-Duty Vehicle Classes" as amended on September 3, 2015.

This would be consistent with CARB's treatment of Class 2b and 3 vehicles in other sections of the ACT regulation, where these two weight classes are categorized together rather than having to meet separate requirements for Class 2b and 3, such as the Table A-1 "ZEV Sales Percentage Schedule" and A-2 "Weight Class Modifiers" in Section 1963.1 "Advanced Clean Trucks Deficits". Incomplete and complete MDV ZEVs are generally developed and deployed with completely identical drivetrains regardless of their incomplete versus complete status. The emissions application and behavior of an incomplete and complete zero-emission vehicle are identical.

	Certification Pathway to Earn ACT Credit							
Class / GVWR Range	ZEP Cert 13CCR 1956.8(a)(8) and 17CCR 95663(d)	ACC-I 13CCR 1962.2	ACC-II 13CCR 1964.2	Sections B, D, and F(1-5) of the California Exhaust Emission Standards and Test Procedures for 2018MY and Subsequent Model Year Zero- Emission Vehicles and Hybrid Electric Vehicles, in the PC, LDT and MD Vehicle Classes	California Standards and Test Procedures for New 2021 and Subsequent Model Heavy- Duty Zero- Emission Powertrains			
Medium Duty Class 2b 8,501-10k <u>Completes</u>	X ref: Section 1963.2(i)	X ref: Section 1963.2(i)	X (26MY+) ref: Section 1963.2(i)	X ref: Section 1963.2(i)	X ref: Section 1956.8(a)(8)			
Medium Duty Class 2b 8,501-10k Incompletes	X ref: Section 1963.2(i)	X ref: Section 1963.2(i)	X (26MY+) ref: Section 1963.2(i)	X ref: Section 1963.2(i)	X ref: Section 1956.8(a)(8)			
Medium Duty Class 3 10,001-14k Completes	X ref: Section 1963.2(i)	X ref: Section 1963.2(i)	X (26MY+) ref: Section 1963.2(i)	X ref: Section 1963.2(i)	X ref: Section 1956.8(a)(8)			

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	Certification Pathway to Earn ACT Credit						
Medium Duty Class 3 10,001-14k Incompletes	X (24MY+) ref: Section 1963.2(h)	Not addressed in Second 15-Day Change Proposal	X (26MY+) ref: Section 1963.2(h)	Not addressed in Second 15-Day Change Proposal	X ref: Section 1956.8(a)(8)		

NZEV Credits

Auto Innovators supports CARB's decision to include NZEV in section 1963.2(j), which aligns treatment of NZEVs in both the ACC II and ACT regulations.

Test Procedures for NZEVs

Several Auto Innovators member companies have also engaged with CARB over the past year regarding appropriate test procedures for demonstrating all-electric range per 13 CCR 1963.2(b)(2) to generate NZEV credits. After discussion with CARB staff, CARB and member companies agreed that test cycles for demonstrating AER may be "one of the duty-cycles, as selected by the manufacturer, that is utilized to demonstrate criteria pollutant or CO2 emission compliance," per "California Certification and Installation Procedures for Medium- and Heavy-Duty Vehicle Hybrid Conversion Systems." For chassis dynamometer-certified vehicles, this could include test cycles such as the Urban Dynamometer Driving Schedule (UDDS, 40 CFR 86 Appendix I (a), incorporated by reference in CARB medium-duty criteria emission test procedures), and for engine or powertrain dynamometer-certified vehicles such as the Heavy-Duty Transient test cycle (40 CFR 1037 Appendix A, incorporated by reference in CARB heavy-duty GHG test procedures) or the Heavy-Duty Steady-State test cycle (55 mph or 65 mph steady-state cruise, using 40 CFR 1037 Appendix D grade profile, incorporated by reference in CARB heavy-duty GHG test procedures).

Additional all-electric range testing considerations may be found in other documents, such as the use of Average Loaded Vehicle Weight required by "California Interim Certification Procedures for 2004 and Subsequent Model Hybrid-Electric and Other Hybrid Vehicles in the Urban Bus and Heavy-Duty Vehicle Classes." For heavy-duty vehicles, other questions of how and whether typical heavy-duty powertrain test procedures and parameters other than test weight apply to all-electric range testing remain unresolved. These include coefficient of rolling resistance, aerodynamic drag area, axle ratio, tire size, and other parameters described at 40 CFR 1036.545 and especially whether parameters can be determined using section 1036.545(h) (previously at 40 CFR 1037.550, as incorporated by reference in CARB heavy-duty GHG test procedures).

Because these requirements for generating NZEV credits are not directly described or referenced in 13 CCR 1963.2 and require simultaneous interpretation of multiple technical requirement documents, there has been a lack of clarity among manufacturers as to the required test procedures to generate NZEV credits. We therefore request CARB revise 13 CCR 1963.2(b) to directly reference a single test procedure document covering NZEV all-electric range testing requirements

for ACT credit, aligned with the requirements discussed and agreed with manufacturers earlier this year regarding test cycles and weights described above.

GHG Implications of ZEP Certification and Fleets

In our September 24, 2024 letter to CARB regarding medium-duty ZEV certification pathways, Auto Innovators also requested a clear statement from CARB that the ZEV credit certification pathway would not affect the greenhouse gas (GHG) averaging set in which medium-duty ZEVs were included. At various times and to various companies, CARB staff has asserted or suggested that zero-emission powertrain (ZEP) certification may affect GHG certification by requiring ZEP-certified vehicles, including MDVs, to be placed in the heavy-duty vocational vehicle GHG averaging set (17 CCR 95663(a) for California compliance, 40 CFR 1037 for EPA compliance).

However, this has not been apparent to Auto Innovators from ACT rulemaking workshops or the current wording of ZEP certification section 13 CCR 1963.2(h):

h) Zero-Emission Powertrain Certification for ZEVs. Beginning with the 2024 model year, onroad ZEVs over 14,000 pounds GVWR and incomplete medium-duty ZEVs from 8,501 through 14,000 pounds GVWR produced and delivered for sale in California must meet the requirements of 13 CCR section 1956.8 and 17 CCR section 95663 as amended by the Zero-Emission Powertrain Certification regulation to receive ZEV credit.

The reference to 17 CCR 95663 does not specify 95663(a) or (b), suggesting heavy-duty vocational vehicle or medium-duty work factor GHG standards could apply, respectively. And 13 CCR 1956.8 has minimal applicability to medium-duty ZEVs, as Class 2b-3 vehicles are not part of the heavy-duty zero-emission averaging set for NOx or particulate matter credits and heavy-duty engine GHG standards (13 CCR 1956.8(a)(7) and (c)(4)) do not apply to ZEVs without internal combustion engines. The proposed language in 13 CCR 1963.2(h) and (i) does point more specifically to the ZEP certification section 13 CCR 1956.8(a)(8) and test procedure section 17 CCR 95663(d), which we appreciate.

Other regulations such as EPA's GHG standards for 2027-2032MY medium-duty vehicles have been written assuming ACT will drive increased medium-duty vehicles subject to medium-duty, not heavy-duty GHG standards.² Manufacturer product and compliance plans to meet GHG and ZEV

² EPA Final Rule: Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium Duty Vehicles, 89 Fed. Reg. 27,842, 27,915 (Apr. 18, 2024). <u>https://www.govinfo.gov/content/pkg/FR-2024-04-18/pdf/2024-06214.pdf</u>. "While [EPA] did anticipate that some growth in development of [ZEV] technologies would occur due to the credit incentives in the HD GHG Phase 2 final rule, [EPA] did not expect the level of innovation observed since [EPA] finalized the rule in 2016, the IRA or BIL incentives, or *that California would adopt the Advanced Clean Trucks (ACT) rule at the same time these advanced technology multipliers were in effect.* We therefore proposed phasing out multipliers for PHEV, BEV, and FCEV technologies one year earlier than provided in the Phase 2 rule such that the multipliers would be eliminated in MY 2027. ... In light of the current existence of, and expected continued rapid increase in, adoption of advanced technologies (include zero-emission technologies) in the MDV market, *EPA is, as proposed, removing the BEV, PHEV, and FCEV multipliers for MY 2027.* ... *Given that MY 2025 has already begun and that MY 2026 begins as early as nine months from this final rule, EPA believes it would not be appropriate to change the MY 2025 or 2026 multipliers.*" (emphasis added).

requirements have relied on similar interpretations of CARB regulations. Given the past uncertainty in this area, even with the new proposed language we request that CARB more explicitly state in 13 CCR 1963 that ZEV credit certification pathway, including ZEP certification, does not impact GHG averaging set for medium-duty vehicles.

Labeling

Auto Innovators agrees with the proposed change that clarified the label is optional and text is simplified.

Include Medium Duty Credit Pooling

The Clean Trucks Partnership included an agreement to consider credit pooling across ACTadopting states. CARB held a public workshop to discuss this but did not include a proposal in this rulemaking. OEMs must encourage and accept sales of medium and heavy-duty ZEVs regardless of the state in which the customer resides.

A lack of pooling for medium-duty Class 2b and 3 vehicles could lead to market distortions and sales biasing in an attempt to achieve uniform ZEV sales across all ACT states regardless of infrastructure readiness or other supportive measures (i.e., incentives) in each state. Auto Innovators supports credit pooling to maximize ZEV sales and as a compliance enabler to the ACT rule.

Thank you again for this opportunity to comment. If you have any questions, please contact Catherine Palin at cpalin@autosinnovate.org