

California Air Resources Board (CARB) staff is requesting feedback and data associated with the potential concepts for Tier 5 that were presented during the public workshop: [Potential Amendments to the Off-Road Diesel New Engine Regulations](#), on November 3, 2021. The slide numbers below correspond to the presentation link. Email your comments and data* to Tier5@arb.ca.gov.

The earlier the data is provided, the easier it will be for CARB staff to take the data into account. Therefore, if possible, please reply by February 1, 2022, or reach out to us to let us know you need more time. Thank you!

1. Federal Preemption (Slide 8)

California needs United States Environmental Protection Agency's (U.S. EPA) co-operation in cleaning up off-road engines. CARB is requesting the stakeholders to communicate with U.S. EPA to work to harmonize with California.

2. Off-Road Low Load Cycle (Slide 12)

Staff requests feedback on whether Southwest Research Institute's (SwRI) Low Load Application Cycle (LLAC) can serve as an off-road certification cycle to ensure emissions are controlled during low load off-road operation.

3. Potential Off-Road Hybrid Powertrain Concepts (Slide 14)

Staff requests feedback on whether there is a demand for a dedicated off-road hybrid powertrain certification procedure. Staff also requests feedback on whether the heavy-duty on-road hybrid powertrain certification procedure is sufficient for certifying off-road hybrid powertrains.

4. Potential Useful Life Concepts (Slide 15)

Staff requests feedback on extending useful life.

5. Potential Lengthened Minimum Warranty Periods (Slide 16)

Staff requests feedback regarding:

- What extended warranties do off-road manufacturers currently offer?
- Why are the current emissions warranty periods adequate or inadequate?

6. Possible Idle Reduction Concept (Slide 17)

Staff requests data to appropriately stop engines after prolonged idle or for setting an off-road diesel idling standard.

7. Possible Selective Catalytic Reduction (SCR) Inducement Concepts (Slide 18)

Staff requests comments on whether inducements should apply beyond SCR.

8. Possible On-Board Diagnostics (OBD) Concepts (Slide 20)

Staff requests feedback on what off-road OBD requirements should be included in the Tier 5 rulemaking.

9. Manufacturer-Run Off-Road In-Use Testing Program (Slide 21)

Staff requests suggestions for a manufacturer-run off-road in-use testing program.

10. Flexibility/Transitional Program for Equipment Manufacturers (TPEM) (Slide 25)

Staff requests feedback and data showing the need for additional flexibility allowances under Tier 5. If granted, should flexibility allowances apply to manufacturers that produce both engines and equipment?

11. Averaging, Banking, and Trading (ABT) (Slide 27)

Staff requests feedback and suggestions on how to improve the current ABT recordkeeping and reporting requirements to better track Family Emission Limit (FEL) engines in California.

* Submitted information may be subject to the California Public Records Act (PRA), but information marked as confidential, including trade secrets, will be redacted. Data received may be aggregated and anonymized for use in the rulemaking record as needed to support the proposal.