Kenneth McAlinden
Specialty Manager, OBD & Regulatory Compliance
Sustainability, Environment & Safety Engineering
Ford Motor Company

August 25, 2020

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

Subject: Comments for Public Hearing to Consider the Proposed Heavy-Duty Engine and Vehicle Omnibus Regulation and Associated Amendments (hdomnibus2020)

Ford Motor Company (Ford) hereby submits our response (attached) to the California Air Resources Board Proposed Heavy-Duty Engine and Vehicle Omnibus Regulation and Associated Amendments to be considered at the Public Hearing on August 27, 2020.

We appreciate the opportunity to comment on the Proposed Rule. At Ford, we are proud of our reputation as a trusted manufacturer in the heavy-duty market where our work trucks range from privately owned medium-duty pickups to heavy-duty last mile delivery trucks used by commercial fleet customers. We are also committed to working with industry, government, and public partners to address the emissions and climate change challenges of the future.

The attached comments include technical concerns related to the proposed application of One-Bin Moving Average Window In-Use testing to Otto-cycle engines as well as various recommendations related to proposed averaging, banking, and trading provisions.

If you have any questions about the substance of these comments, please contact me at (313) 806-0173 or Greg Martin at (313) 805-4972. Thank you for your attention to this response.

Sincerely,

/s/

Kenneth J. McAlinden

Staff Report ISOR Ref.	Appendix Ref.	Ford Comment
III-3. Heavy-Duty In-Use Test Procedure Amendments (III-31)	Appendix B-2: Proposed Amendments to the Otto-Cycle Test Procedures	The proposed single bin 300 second moving average window (1B-MAW) for Otto-Cycle engines (86.1370 B-2 1.1) has not been supported by the same level of data and technical rigor as the 3-bin moving average window proposal for Diesel engines. The workshops leading up to the Heavy-Duty Omnibus Proposal included no substantial discussion of technical feasibility or unique considerations needed in order to apply the MAW methodology to Otto Cycle engines at the 24MY or 27MY standard levels. As an example, Ford is concerned that high load component protection enrichment actions unique to spark ignition products were not considered or evaluated when defining the1B-MAW test procedures or setting the compliance limits. Ford requests that CARB reevaluate the 1B-MAW window methodology for Otto Cycle engines. Ford recommends that CARB either revise the measurement "guard rails" and compliance limits to account for unique Otto-Cycle engine operating requirements or that CARB postpone the application of the MAW methodology until 27MY to allow for a more comprehensive evaluation of unique Otto Cycle engine operating characteristics.
III-7. Emissions Averaging, Banking, and Trading Program Amendments (III-73)	Appendix B-1 Proposed Amendments to the Diesel Test Procedures Appendix B-2: Proposed Amendments to the Otto-Cycle Test Procedures	CARB has proposed revisions to both the Diesel (I.15.B.3) and Otto-cycle (I.15.B.2) engine Averaging, Banking, and Trading (ABT) regulations that would require manufacturers to convert the credits in each of their 50 state averaging sets to a specific California averaging, banking and trading (CA-ABT) program based solely on California volumes beginning with the 22 MY. CARB has additionally proposed that manufacturers participating in the Optional 50-State-Directed Engine Emission Standards for Diesel (I.11.B)(5.5.4) or Otto-cycle engines (I.10.B)(3.3.4) must "forgo any credits generated from the U.S.-directed production volume". The meaning and application of the "forgo credits" provisions are unclear. These provisions may be intended to prevent manufacturers participating in the voluntary program from generating "windfall" credits in a federal ABT program and then claiming them at some future date should harmonized federal and California standards be implemented, but their inclusion in these regulations is premature. CARB should not attempt to govern future rights and obligations in connection with regulatory programs that have yet to be established. Ford believes that CARB should allow manufacturers participating in the voluntary 50-state program to continue to calculate their ABT compliance obligations and status based on 50-state volumes. This would allow for clear continuity of the CARB program and a given manufacturer's credit bank in the event of a future harmonized program. If such a harmonized program emerges, the details of credit

		usage from the Optional 50-State-Directed Engine Emission Standards program can be sorted out at that time, consistent with environmental protection objectives and principles of fairness. If such a harmonized program is not implemented by 27 MY, CARB can require affected manufacturers to convert their credit bank to a CA-ABT based bank in the manner proposed for 22 MY. This would have the additional benefit of allowing manufacturers participating in the voluntary 50-state program to continue generating reports based on their existing 50-state volume methodology which is also substantially aligned with the 50-state methodology required for CA Phase II HD GHG ABT reporting.
III-7. Emissions Averaging, Banking, and Trading Program Amendments (III-73)	Appendix B-1 Proposed Amendments to the Diesel Test Procedures Appendix B-2: Proposed Amendments to the Otto-Cycle Test Procedures	Ford requests additional clarification of the methods that will be used to align the proposed ABT methodology with changes in engine full-useful life requirements proposed to occur in 27 MY and 31 MY. The value of an ABT program is to allow manufacturers to align their product plans and scheduled investments with the regulatory requirements. Programs scheduled ahead of regulatory changes can certify to family emissions limits that generate credits while programs scheduled after regulatory changes can carry over at existing emission levels provided sufficient credits have been generated by other products. The ABT rules proposed by CARB appear to allow for such credit mechanisms to be applied to emission standards, but not to the new useful life requirements. As proposed, the 27 MY and 31 MY useful life requirements appear to apply as step change requirements to 100% of products in each of those model years. This eliminates the possibility of a manufacturer carrying over products from 26 MY to 27 MY or from 30 MY to 31 MY. Ford recommends that CARB revise the ABT rules and/or useful life requirements to allow manufacturers with sufficient emission credits to carry over products through 27MY and 31 MY at their existing useful life levels.
Averaging, Banking, and Trading Program Amendments (III-73)	Appendix B-1 Proposed Amendments to the Diesel Test Procedures Appendix B-2: Proposed Amendments to the Otto-Cycle Test Procedures	CARB has proposed a limitation on the use of zero-emission NOx credits for both the Diesel [I.15.B.3.(j)(3)] and Otto-cycle [I.15.B.2.(i)(3)] engine Averaging, Banking, and Trading (ABT) programs. In both cases, the proposed regulation states that “Any banked zero-emission NOx credits would no longer be available in the CA-ABT program for 2031 and subsequent model years.” Ford believes that credits commensurate with the actual emission benefits of zero emission powertrains should continue to be included in a manufacturer’s credit bank beyond the 31 MY. This will allow manufacturers a margin for compliance given uncertainties with the technical feasibility of the proposed full useful lives and standards.

		Eliminating these credits from a manufacturer's ABT bank creates a disincentive for any manufacturer producing fueled engines as well as heavy duty zero emission vehicles (ZEV) to exceed their heavy duty ZEV obligations under the Advanced Clean Truck regulation. Manufacturers in need of ABT NOx credits would instead be incentivized to introduce hybrid vehicles with fueled engines that would qualify for ABT credits. If CARB's intention is to prevent manufacturers from complying with 31MY+ NOx requirements primarily via purchasing credits, Ford recommends that CARB instead consider a cap on the amount of a manufacturer's 31+ MY compliance obligation that can be met through trading of ZEV credits under the ABT program (e.g., "No more than 15% of a manufacturer's total obligation can be met through purchased or traded ZEV credits"). The cap should be developed with manufacturer input and should be set at a level that balances competing considerations.