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California Air Resources Board
Submitted Electronically to Comment Log for Advanced Clean Cars II Amendments – June Workshop,
https://ww2.arb.ca.gov/public-comments/comment-log-advanced-clean-cars-ii-amendments-june-workshop

Subject: Ford Comments on Advanced Clean Cars II Amendments

Ford Motor Company (Ford) hereby submits our comments on the Advanced Clean Cars II (ACC-II) Amendments presented in the June 26 workshop. We appreciate the opportunity to comment as well as CARB's time and consideration.

We are encouraged by CARB's efforts to harmonize its criteria emissions program with EPA and request it to do the same with their future GHG standards. Furthermore, Ford believes that plug-in electric vehicles (PHEVs) will continue to play an essential role in electrifying our fleets. We request that CARB continue to properly credit these vehicles for the emission benefits provided by electric-only operation. We look forward to continued discussions with CARB regarding current and future PHEV environmental benefits.

Ford supports the comments submitted by the Alliance of Automotive Innovators ("Alliance"). The comments provided herein supplement those of the Alliance and highlight some specific Ford concerns.

If you have any questions, please contact Steve Henderson, Vehicle Regulatory Strategy & Planning Manager (shenders@ford.com), or Evan Belser, Policy Strategist and Managing Counsel (ebelser1@ford.com). Thank you for your attention to these comments.

Sincerely,

Steve Henderson

Light-Duty GHG Program

Greenhouse Gas (GHG) Standards

Ford is making historic investments toward electrification to meet the upcoming federal and state new vehicle emission standards. There is no question that fleet electrification is improving and will continue to improve overall fuel economy and emissions, and is a more cost-effective approach as compared to incremental, expensive reductions from already highly optimized internal combustion products.

During this transition period, a subset of our vehicles will continue to use internal combustion propulsion in order to meet customer use cases and expectations for vehicle capability. We encourage CARB to focus on total fleet averages—which is all that matters to address climate change from vehicle emissions—rather than regulating internal combustion products in isolation. A new GHG standard that requires further reductions from internal combustion vehicles would further constrain our already limited resources that would be better spent building out the industrial base necessary to electrify transportation at scale.

CARB should not create additional standards on the diminishing internal combustion sub-set of the fleet, without regard for the rest of the fleet which is going electric. But, if CARB does impose additional standards, we recommend that CARB harmonize any potential GHG standards with EPA's final multi-pollutant rule (EPA MPR).

Off-Cycle and Air Conditioning Credits

Off-cycle and A/C credits are a critical component of Ford's compliance plan while also offering real-world environmental benefits. In the EPA's MPR, the agency scaled back credit utilization and began to sunset some credit programs. CARB's harmonization with the MPR would provide a reasonable transition period without requiring separate fleet programs between the agencies. Vehicle emissions regulations are more complex than ever, and we must avoid further complexity wherever possible. Ford requests that CARB harmonize with the EPA final rule for the off-cycle, A/C efficiency and A/C leakage credit programs.

Altitude Emissions Standards

Resources and test time are limited and should focus on overall compliance. Due to the limited miles driven in these altitude-specific use-cases, and the continued electrification of the fleet, the added test complexity and costs are not justified. This is especially true in light of the significant additional testing burden required to meet new federal and California testing obligations, and especially for a company like Ford that offers a wide range of products with a range of

powertrain technologies. Ford recommends that CARB harmonize with the EPA MPR and not include US06, SC03 and 50°F altitude testing.

Plug-In Hybrid Electric Vehicles (PHEV)

PHEVs are, and will continue to be, a key technology for vehicles and use-cases which make full electrification difficult. Many consumers who are not willing to drive an EV may be willing to drive a PHEV. Ford opposes the CARB proposal to eliminate all regulatory credit for PHEV electric miles travelled (eVMT). Ford encourages, and would help support, further data-driven refinements to the fleet utility factor (FUF) for use in future EPA/CARB regulatory updates, and recommends that CARB harmonize with EPA in continuing to appropriately credit PHEV for eVMT.

Criteria Air Pollutant Standards

Light-Duty Certification Bins

Flexibility in certification bins is increasingly important as the stringency of the emissions standards continues to increase. Appropriate bin resolution allows OEMs to more robustly attain credit for improved emission performance while minimizing the compliance risk associated with testing variability and measurement challenges associated with ultra-low emissions levels. Ford supports the elimination of the "Cleaner Car" provision beginning in 2026MY for both light- and medium-duty vehicles, however the additional bins (most importantly Bin 35) available in Tier 4 should be included in LEV4.

Medium-Duty Vehicle Criteria Emission Standards

Ford appreciates CARB's proposed ACC II Medium-Duty Vehicle (MDV) amendments to harmonize ACC II with EPA's recently finalized Tier 4 regulation. However, for several of the changes, CARB's proposed timing is misaligned with EPA's timing for Tier 4.

In particular, CARB has proposed combining separate class 2b and 3 MDV NMOG+NOx requirements into a single fleet average beginning 2030MY, including amending existing ACC II 2030MY MDV NMOG+NOx fleet average requirements. CARB has also proposed replacement of the hot LA92 cycle (also referred to as "Hot 1435 Unified Cycle") currently used for class 3 MDV testing with the US06 cycle, as well as replacing the partial US06 (bag 2 US06) for class 2b vehicles with power-to-weight ratio at or under 0.024 with the full US06 beginning 2030MY.

CARB's proposed 2030MY implementation for these changes is not aligned with EPA. EPA's default pathway for Tier 4 medium-duty vehicles is a 100% phase-in in 2031MY, with optional early phase-ins beginning 2027MY. Ford supports CARB's efforts to harmonize with Tier 4, but we encourage CARB to align with EPA on implementation timing in order to allow sufficient lead time for compliance as well as reduce unnecessary testing and certification complexity.

Medium-Duty Vehicle Certification Pathways and In-Use Testing

Ford encourages CARB to update ACC II to allow similar certification options for Medium-Duty Vehicles (MDVs) as EPA has recently finalized in its Multi-Pollutant Rule . In particular, Ford supports EPA's optional heavy-duty engine certification for MDVs with gross combined weight rating (GCWR) greater than 22,000lbs and encourages CARB to adopt a similar certification

pathway. CARB says its current optional engine certification only for class 3 diesel and incomplete vehicles is "not inconsistent with EPA options," but we need actual consistency. EPA's MPR allows engine certification of high-GCWR class 2b MDVs and complete gasoline class 3 MDVs that ACC II does not.

Additionally, as the MDV market increasingly electrifies, battery weights may drive large ranges of gross vehicle weights across which a single hybrid powertrain is used. If it is more likely for an MDV to share a powertrain with a class 4 or above vehicle (which must engine or powertrain certify) than a class 2a or below vehicle (which must chassis certify), allowing more options for heavy-duty engine certification of MDVs would most effectively reduce certification complexity. Engine certified heavy-duty vehicles are also already subject to stringent on- and off-cycle standards, including the heavy-duty engine FTP and SET cycles and Moving Average Window in-use testing, and allowing heavy-duty engine certification of MDVs would not be expected to increase real-world emissions versus MDV chassis certification, especially under heavy load.

Ford supports CARB's proposal to align Moving Average Window (MAW) in-use standards for diesel MDVs with CARB's HD Omnibus 2-Bin MAW heavy-duty diesel engine standards beginning 2027MY. However, we also encourage CARB to adjust the ACC II 1-Bin MAW standards for gasoline MDVs to reflect the heavy-duty gasoline engine FTP standards proposed in CARB's March 20, 2024 HD Omnibus workshop[1] (that is, to 0.035 g/hp-hr NOx, 0.06 g/hp-hr NMHC, 0.005 g/hp-hr PM, 6.0 g/hp-hr CO, with 2.0 conformity factor 2027-2029MY and 1.5 conformity factor 2030MY+). ACC II gasoline MDV MAW standards are currently defined relative to Otto cycle heavy-duty FTP standards per "California 2026 and Subsequent Model Year Criteria Pollutant Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles" – Part I(I)(4.113.3), and if these FTP standards are updated in HD Omnibus they should be updated in ACC II as well.

[1] https://ww2.arb.ca.gov/sites/default/files/2024-04/01_Omnibus_Workshop_Omnibus_Amendments_ADA.pdf, slide 9.

Zero-Emission Vehicle Assurance Measures

Interoperability Standards

Ford shares CARB's view on the importance of public charging interoperability. Reliable and accessible charging is a key enabler for widespread EV adoption and mass-market penetration of EVs. We place high priority on our customers' charging experience and are committed to contributing to the technical, market and policy enablers required to ensure a reliable public charging experience. Ford customers have access to The BlueOval Charge Network, which will give Ford EV customers unprecedented access to fast-charging.

There is great momentum and effort across the charging ecosystem to solve the interoperability challenges. Ford's technical, business, and policy experts are actively engaged – including in leadership positions – across a myriad of charging standards, testing organizations, and initiatives, including SAE, ISO, CharIN, and ChargeX.

Ford is encouraged by CARB's thoughtful evaluation of both timing considerations and standardization developments as the public charging interoperability ecosystem is still under development and its openness to looking to cross-industry efforts such as SAE interoperability standards development. Flexibility will also be an important regulatory consideration to ensure any efforts don't add unnecessary burden or cost or inadvertently result in hinderance of reliable charging.

As CARB's evaluations proceed toward the Staff Report development, we look forward to exploring additional flexibilities in the timing and implementation of the most effective measures to meet our shared interoperability goals for public charging.

Consumer-Facing Vehicle Labels

The Federal Fuel Economy and Environment Label is the primary (and sometimes only) resource that consumers use to compare vehicle efficiency across multiple makes and models. Ford believes that the existing electric vehicle label provides valuable information to the consumer but can, and should, be improved. Ford believes an additional California only label would confuse consumers who may be interested in an electric vehicle. Ford supports CARB working with the EPA and others to update the existing label rather than creating a different (and potentially conflicting or duplicative) label.

Ford encourages CARB to work with the EPA and the Society of Automotive Engineers (SAE) in updating the existing fuel economy label (40 CFR Part 600.311) and corresponding test method(s). The existing test methods provide a wealth of knowledge that should be better utilized for consumer use.

Additional test methods or modifications to existing test methods should be avoided. CARB ACC-II and the upcoming EPA multi-pollutant rule will more than double the electrified vehicle testing workload. Any additional testing requirements will further complicate the already significant laboratory workload and increase program costs and costs to consumers.

Ford is encouraged with the work being produced in the SAE and MSTRS electric vehicle (EV) Testing/Label workgroups and looks forward to working with the CARB staff on specific recommendations concerning vehicle ranges and vehicle charge times.

BEV Durability Programs

The latest EPA final rules allow a manufacturer to show BEV durability compliance via the EPA final rule or CARB ACC-II durability program. Ford would support CARB providing similar flexibilities to reduce unnecessary test burdens. In the final rule, the EPA also clarified that virtual miles due tobattery degradation via vehicle-to-building (V2B), vehicle-to-grid (V2G) or vehicle-to-x (V2X), applications may be included in determining compliance with the durability provisions (but excluded from warranty). Ford requests that CARB include similar virtual mile allowances, especially considering parallel regulatory efforts in California to explore how to use EVs to strengthen the electrical grid and reduce the cost of electricity for ratepayers.

Analytically Derived Fuel Economy (ADFE) for BEV and HEV Products

Fleet electrification and testing complexities continue to grow. Testing of electrified powertrains is an arduous process and there are significant concerns that even future laboratory resources will be unable to contain the workload. We continue to request that CARB and EPA adopt ADFE processes to help address these concerns. ADFE is heavily utilized in internal combustion vehicle and should be adopted for electrified powertrains.