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Submitted Via Electronic Mail: cleancars@arb.ca.gov

Subject: Comments on Advanced Clean Cars II Amendments

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

If you have any questions, please contact Steve Henderson, Vehicle Regulatory Strategy & Planning (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 investing in electrification to meet the upcoming EPA, NHTSA and CARB regulations. 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 what ultimately matters to address climate change from vehicle GHG emissions—rather than focus on non-ZEV fleet average while ignoring the electrification of the fleet. A new GHG standard that requires further reductions from internal combustion vehicles would further constrain our already limited resources as we transition our fleet under the ZEV mandate.

We caution CARB on creating additional standards but, if deemed necessary, we recommend that CARB harmonize any potential GHG standards with EPA's final multi-pollutant rule.

Plug-In Hybrid Electric Vehicles (PHEV) Fleet Utility Factor (FUF)

Hybrids are critical to our decarbonization efforts while offering our customers what they demand. Ford encourages, and would help support, further development of the fleet utility factor for future EPA/CARB regulatory updates. Ford recommends that CARB harmonize with the EPA's final multi-pollutant rule to avoid conflicting requirements.

Criteria Air Pollutant Standards

Light-Duty Certification Bins

Flexibility in certification bins is critical as the regulatory standards continue to drop. Adequate bins allow OEMs to achieve lower emission standards while still meeting the customer's needs for performance and capability. Ford requests that CARB add additional bins available in Tier 4 to the LEV4 amendments.

Medium-duty Vehicle Certification and In-Use Testing

Ford appreciates CARB's consideration of EPA's upcoming final Tier 4 rule in making any potential changes to medium-duty vehicle LEV IV regulations. We encourage CARB to remain harmonized with EPA medium-duty test methods and procedures, especially as certification complexity grows with an increasing number of electrified medium-duty vehicles. This includes certification bins available to medium-duty vehicles or where heavy-duty regulations are adopted in ACC-II for medium-duty vehicles. In particular, we request CARB harmonize the moving average window (MAW) in-use testing as it applies to medium-duty vehicles with EPA's Clean Trucks Plan (CTP) quickly and with minimal deviation from CTP, as CARB has also committed to doing with its Heavy-Duty Omnibus Rule beginning 2027 model year. We also recommend CARB adopt a fuel-neutral certification pathway similar to EPA, allowing optional certification of gasoline engines used in medium-duty vehicles to the heavy-duty Otto-cycle engine standards as CARB currently allows for diesel engines used in medium-duty vehicles.

Zero-Emission Vehicle Assurance Measures

Interoperability Standards

Ford shares CARB's view on the importance of 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 charging experience.

Ford customers have access to The BlueOval Charge Network, which is the largest integrated charging network in North America. The network provides access to over 106,00 charging stations, including 11,800+ DC fast charging stations and, beginning later this year, access to an additional 15,000+ Tesla Superchargers across the U.S. and Canada. This will give Ford EV customers unprecedented access to fast-charging. Ford Pro, our commercial vehicle charging business, also helps the transition to EVs for commercial vehicle fleets, with full scale solutions for planning, fleet operations, installation of charging equipment, and charging and energy management for home, depot and public 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. We have extensive experience with evaluation, diagnosis and solutions for charging reliability, and look forward to future dialogue with CARB to help further our shared goals for a seamless charging customer experience.

Any regulatory approach must not inadvertently hinder the objective of reliable charging. Flexibility in interpretation is inherent in the current standards, allowing a wide range of hardware and software (on both charger and vehicle sides) to interact effectively, sometimes requiring customization to do so. Industry needs the ability to deviate from standards that have been implemented to improve interoperability or charging reliability. For example, ISO 15118-2 utilizes timeouts to detect failures and specifies specific timeout values. However, there are instances of existing charging hardware for which Ford increased timeout length in order to address a field issue and deliver sufficient interoperability. If it were mandated to meet this specific ISO 15118-2 timeout parameter, we would not have had the flexibility to solve the error state. Additionally, the error handling specified in ISO 15118-2 results in termination of a session in case of almost any error, which does not always result in the best customer experience, as it is possible to implement a different approach that allows recovery from certain types of errors. For example, if payment with Plug & Charge is unsuccessful, the user should be able to pay with alternate means. If an approach of rigid conformance to ISO 15118-2 is taken, any plug

and charge authentication failure would result in termination of the session. These are just a couple of data points demonstrating the complexity of execution and the associated flexibilities of implementation seen in the charging ecosystem.

Additionally, EV-EVSE communication standards and interoperability are only one part of ensuring successful charging events. A reliable charge is the result of a complex ecosystem, with multiple, variable failure points stemming from a diverse set of potential root causes. This creates great complexity and need for careful analysis to identify (with specificity and data) the problems we are tasked with addressing to deliver a reliable charge. We look forward to exploring the multitude of these considerations with CARB. We seek dialogue where we can both share our expertise (including specific feedback CARB has requested) and gain insights from CARB to better contribute to the vision CARB has for this important topic.

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 and in the worst case may cause them to look to more traditional vehicles instead.

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.

Ford looks forward to working with the CARB staff on specific recommendations concerning highway range, cold/hot range and vehicle charge times.

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.