



California Air Resources Board
1001 I St.
Sacramento, CA 95814

RE: Comments Regarding Amendments to Advanced Clean Cars II as discussed during November 15, 2023 Riverside Workshop.

Dear Chair Randolph and Members of the Board:

The Center for Energy Efficiency and Renewable Technologies (CEERT) offers these written comments in response to the November 15, 2023 workshop¹ regarding areas of adjustment and concomitant amendments CARB Staff are considering to update and complete the Advanced Clean Cars II (“ACC II”) regulations. For nearly 25 years CEERT has worked with CARB to develop California clean cars regulations that can be readily adapted by other states facing chronic air and climate pollution severely impacting their public and environmental health, especially in their most heavily burdened frontline communities. We have strongly and consistently encouraged the Board to adopt stringent and effective regulations that avoid either any backsliding or any gaming by the regulated parties in the State’s pursuit of a zero-emissions future. We appreciate the opportunity to comment on how CARB can further the objectives of the ACC II program in achieving the State’s critical goal of a zero-emissions transportation future.

Developing New Standards Beyond 2025 Model Year to Support Climate Goals and the Consideration of Alignment With EPA Where Appropriate

The current set of ACC II regulations adopted by CARB on August 25th, 2022 and approved by OAL on November 30th, 2022² focus on reducing and eliminating criteria air pollutants but did not update the ACC program’s greenhouse gas (“GHG”) standards which set targets though to 2025. Even with the co-benefit of the fleetwide GHG reductions that can be expected from reaching the ACC II’s ZEV targets, a significant number of passenger vehicles powered by internal combustion engines (I.C.E.s) emitting criteria air and climate pollutants will remain on California’s roads after 2035.³

¹ <https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program/meetings-workshops>

² <https://ww2.arb.ca.gov/rulemaking/2022/advanced-clean-cars-ii>

³ CARB Staff Presentation, November 15, 2023, slides 14 & 17. NB: With each new model year, the average age of passenger vehicles has been progressively increasing: See <https://www.bts.gov/content/average-age-automobiles-and-trucks-operation-united-states>

Under ACC II, California Needs to Again Establish its Own More Stringent Vehicle GHG Standards

Simply aligning with the forthcoming proposed US-EPA (“EPA”) GHG standards⁴ will be insufficient for California’s vehicle fleet to meet its critical goal of contributing to the State’s achieving at least an 85% reduction in fleetwide GHG emissions by 2045.⁵ To address this shortcoming in ACC II, CARB staff are considering adding upwardly revised GHG reduction targets to the program (beyond the 2025 GHG targets set in ACC I). While Staff note that CARB will, “... consider alignment with EPA where appropriate,”⁶ in CEERT’s view, retaining an independent California program that sets stronger vehicle GHG reduction targets than the Federal GHG standards will be necessary.

The current proposed Federal rules under consideration by the EPA only apply through 2032 – 3 years short of the duration of California’s ACC II program standards – and, in CEERT’s view are insufficient to address California’s air and climate pollution reduction needs, regardless. The additional three years under ACC II afford California the opportunity to maintain and demonstrate its leadership in its efforts to eliminate these pollutants. California’s continued world-leading stringent regulation of pollutant emissions from passenger vehicles will continue to send a robust and consistent market signal to automakers and continue to build the emissions reduction ramp that serves as a bridge towards a post-2032 and post-2035 future where all passenger vehicles emit zero criteria and zero climate pollutants. California demonstrated its leadership in the fight to eliminate criteria air pollutants through the ZEV targets it established with the adoption of ACC II. However, this leaves the work CARB undertook with ACC I only partially fulfilled. It is now time for CARB to complete updating the design of the balance of the ACC regulations needed to address climate pollutants by dealing with the millions of ICE vehicles that could be sold by 2035. In so-doing CARB should adopt GHG standards more stringent than those under consideration by the EPA.

CEERT considers CARB retaining an independent California program as also being necessary to protect against volatility at the Federal level,⁷ given the undermining rollback and corrective re-establishment of the Federal standards during recent years.

California’s program should also address the continuing trend for the average size, weight and footprint of vehicles to increase.⁸ According to the EPA’s 2023 Automotive Trends Report⁹ cars only represented 37% of 2022 vehicle production, while vehicle size, weight and footprint have never been larger.¹⁰ These trends resulted in the MY 2022 fleet being more polluting, in aggregate, than it otherwise could have been.¹¹ Current California and Federal regulations act as a perverse incentive for auto

⁴ [Proposed Rule: Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles](#)

⁵ CARB Staff Presentation, November 15, 2023, slides 15 & 16.

⁶ CARB Staff Presentation, November 15, 2023, slide 12.

⁷ CARB Staff Presentation, November 15, 2023, slide 16.

⁸ [EPA, 2023 Automotive Trends Report: Highlights](#). (The report includes collected data up to the 2022 model year. This has also been the trend in Canada:

See: Environmental Defence Canada, 2021. [CAR WARS: SUVs versus EVs and the Battle for a Cleaner Future](#), and Équiterre, 2022.. [Des véhicules toujours plus gros : comment en sommes-nous arrivés là? \(Translation: Ever-bigger vehicles: how did we get here?\)](#)

⁹ <https://www.epa.gov/automotive-trends/download-automotive-trends-report>

¹⁰ EPA, 2023 Automotive Trends Report, Executive Summary at ES-3

¹¹ Ibid.

manufacturers to build fewer smaller more efficient cars, and increasing numbers of larger relatively inefficient trucks and SUVs, which in aggregate undermines the overall goals of the GHG standards.¹²

The framework for the proposed regulations under consideration by the EPA in its draft rule for the MY2027 and beyond fleet average standard, could result in greater total emissions even as the number of zero-emission vehicles (“ZEVs”) entering the fleet advances in future years. CARB notes that without a corrective backstop, emissions from the non-ZEV fleet “Compliant with the EPA Proposal” could rise an estimated 15 grams per mile **in less than a decade** (by 2032 when the EPA’s new rules are set to expire).¹³

In the absence of strong corrective backstops for ICE vehicles, California and Federal regulations risk automakers complying with their EV targets while simultaneously allowing any improvements in the emissions performance of their ICE vehicles to plateau. This despite there still being scope for further advancements in the emissions performance and efficiency of ICEs. (eg. The use of engine turbocharging, gasoline direct injection, gasoline direct port fuel injection, automatic stop/start, cylinder deactivation, multispeed transmissions with 7 or more discreet speed/power ranges, continuously variable transmissions, hybridization and plug-in hybridization, etc., varies extensively across the many automakers.¹⁴ Automakers still also have the option available to them to downsize and/or lightweight the vehicles they market and sell to consumers.) Moreover, there remains the risk that without the proper corrective backstops, automakers could backslide rather than advance improvements in the performance of vehicle types in their gas-powered fleets.¹⁵ (Under such a scenario automakers might attempt to justify such a strategy as a necessary evil that regulators should afford them so that they could maintain profits from the sale of less efficient and more polluting trucks and SUVs – profits, they might try to argue, needed for them to invest in further engineering development of their vehicles – while also claiming any resulting increase in emissions would be offset by their growing EV sales (a justification argument they have resorted to in the past when seeking to be under less stringent regulation.)

CARB Should Develop an Updated Fleet Utility Factor For PHEVs That is More Stringent than EPA’s and Based On Real-World Usage Data

CEERT supports CARB updating the PHEV fleet utility factor (FUF) and agrees that it should be lower than the current EPA standard to reflect lower observed FUFs in usage compared to both the existing FUF curves currently in use and the proposed FUF in the EPA rule.¹⁶ To the greatest extent possible, CARB should rely on real world usage data in developing an updated FUF. Relying on an inadequate FUF could result in an increasing disparity between actual real-world and the credited compliance values for GHG

¹² The 2023 Automotive Trends Report notes: “The longterm trend away from sedan/wagons and towards vehicle types with lower fuel economy and higher CO2 emissions has offset some of the fleetwide benefits that otherwise would have been achieved from the improvements within each vehicle type.”, at ES-3.

¹³ CARB Staff Presentation, November 15, 2023, slide 20.

¹⁴ 2023 Automotive Trends Report, Executive Summary at ES-8

¹⁵ This is effectively what is happening with the EURO 7 standards recently approved by the European Parliament and currently under consideration by the EU member states. <https://www.euractiv.com/section/road-transport/news/eu-parliament-votes-to-dilute-new-euro-7-vehicle-pollution-limits/>; <https://www.euronews.com/green/2023/12/13/weakened-eu-vehicle-emissions-standards-could-mean-100-billion-in-health-and-environmental>; <https://www.transportenvironment.org/discover/euro-7-deal-to-freeze-air-pollution-limits-shows-that-the-car-lobby-is-back/>

¹⁶ eg. See: <https://www.sciencedirect.com/org/science/article/pii/S1556831822004269>; <https://www.tandfonline.com/doi/full/10.1080/15568318.2020.1849469>; <https://www.mdpi.com/2032-6653/11/1/6>; <https://theicct.org/publication/fs-real-world-phev-us-dec22/>

emissions with the increasing size of a PHEV. (This disparity would result from the gap between the all-electric zero emissions charge depleting mode – when operating solely on the vehicle traction-battery – and the higher emitting ICE powertrains.) This could lead to continued over-crediting for PHEVs' which fall short of the ACC II goals when in real use, and effectively allow for the use of PHEVs to take advantage of a loophole retained within the regulations. This would allow for PHEVs of increasing size to, in aggregate, undermine the goals of any updated GHG provisions being considered for ACC II, and further exacerbate the problems outlined in the discussion above regarding passenger cars vs SUVs and trucks.

While CARB updated the minimum certified all-electric range for PHEVs to 70 miles, beginning with the 2029MY under ACC II, certification should include the requirement that this be based on real-world usage provisions if a revised FUF is to avoid the disparity problem.

Criteria Air Pollutant Standards

CEERT strongly supports CARB adopting any provision incorporated by the EPA in its forthcoming Emissions Standards for MY2027 and Later LDVs and MDVs, that is an improvement and more stringent than under the current ACC II regulations: such as the 0.5mg/mile particulate matter (PM) standard¹⁷; any evaporative emissions and/or vapor recovery requirements; testing and certification procedures; longer useful life requirements; etc., as appropriate. (The engineering solutions automakers would need to employ to achieve a 0.5mg/mile PM emissions would have the effect of bringing US and California PM emissions requirements closer to the more stringent particulate number standard established under the EURO 6 which limits particle emissions for all passenger cars to 6.0×10^{11} #/km equivalent to 0.5mg/km using the UN/ECE Particulate Measurement Programme protocol¹⁸).

Particulate Matter

CEERT supports CARB retaining the exclusion of ZEVs from the proposed PM phase-in to 0.1 mg/mile (and now also including the progression from 0.6 to 0.3mg/mile for US06) for LDVs under ACC II (8 & 10 mg/mile with a now lower US06 limit for MDVs) and would support CARB retaining the ZEV exclusion if it were to adopt a 0.5mg/mile for all LDVs and MDVs in response to EPA provisions.

NMOG+NOx

CEERT supports CARB retaining the ACC II NMOG+NOx standards which excludes ZEVs from fleet averaging after MY2029.

ZEV Assurance Measures

As California continues to seek to build a robust and self-sustaining vehicle market for ZEVs, CEERT encourages all efforts to provide greater support and assurance to consumers who are interested in or have already purchased a ZEV. Critical among these is ensuring that EV users can reliably¹⁹ and

¹⁷ CEERT is one of many organizations advocating for the EPA to adopt a 0.5mg/mile PM standard.

[https://www.edf.org/media/new-letter-public-interest-groups-supports-protective-epa-particulate-pollution-limits-new#:~:text=\(Washington%2C%20D.C.%20%E2%80%93%20November%202015,for%20cars%20and%20passenger%20trucks.;](https://www.edf.org/media/new-letter-public-interest-groups-supports-protective-epa-particulate-pollution-limits-new#:~:text=(Washington%2C%20D.C.%20%E2%80%93%20November%202015,for%20cars%20and%20passenger%20trucks.;)
<https://www.lung.org/getmedia/c9276a6b-0fae-451d-af8c-82023d1fa142/Health-Orgs-Letter-to-President-Biden-on-LDV-and-MDV-PM.pdf>

¹⁸ <https://www.mdpi.com/2227-9717/9/12/2216>; <http://www.combustion-engines.eu/Particle-number-measurements-in-the-European-legislation-and-future-JRC-activities,116158,0,2.html>

¹⁹ Not always a given: <https://www2.arb.ca.gov/resource/documents/evse-technology-review>;
<https://www.pollutionprobe.org/pollution-probe-releases-groundbreaking-report-on-the-consumer-ev-charging-experience-in-canada/>

seamlessly²⁰ charge their vehicles at any charging station. Many consumers' reticence to adopt an EV is due to their perception and understanding regarding how much of an inconvenience, and even a barrier BEV charging experience might be.²¹ It is critical to the success of the ACC II program that reliability and accessibility issues around BEV charging are resolved. To that end CEERT wholeheartedly supports conformance testing for EV charging interoperability.²² This will be even more important for California and beyond with the rapid acceleration of charger deployments and the increasing number of charger companies recently enabled by the massive expansion in Federal funding.²³

Consumer-facing ZEV Labels

CEERT supports the development of a new consumer-facing ZEV label. Some of the key information from the battery label, standardization of fastcharging metrics and information on the impact of temperature on range (potentially a function of the particular battery chemistry in the car) could be useful to the consumer. It might also be useful to clarify with automakers whether differences in the battery's response to L2 vs various levels of power used for DC fast-charging effects the real-world realized range from each charging event as has been apparently reported by some BEV drivers²⁴ and if this proves to be a ubiquitous issue across the industry to also have this information reflected in the consumer labeling.

Conclusion

Updates and amendments to ACC II will provide CARB with an opportunity to extend its groundbreaking regulations even further by completing the unfinished balance of the suite of programs established under ACC I. Improving the stringency of the LEV IV (and, if need be, ZEV regulations) together with extending stringent GHG standards through to 2035 will further ensure that criteria air and climate pollutants are reduced as rapidly as possible and more quickly improve the health of the public and the environment. This work can be enhanced by the elimination of unnecessary crediting and the elimination of loopholes and any perverse incentives that remain in the ACC II regulatory program.

CEERT looks forward to further engagement with CARB in exploring how to accomplish these goals.

Sincerely,



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²⁰ Industry still needs to work on some issues highlighted and anticipated by the California PEV Collaborative more than a decade ago, <https://www.veloz.org/resource/maps-and-apps-todays-mapping-and-location-based-services-for-plug-in-electric-vehicle-charging-infrastructure/>

²¹ eg. As noted in CARB Staff Presentation, November 15, 2023, slide 41.

²² The release of the [SAE J3400 Technical Information Report for the Tesla-developed NACS \(North American Charging Standard\) on December 19th](#), adopted by all automakers, except Stellantis at this time, should hopefully help to expedite the resolution of some of this challenge.

²³ <https://www.bloomberg.com/news/newsletters/2024-01-16/how-the-us-can-emerge-from-its-ev-charging-woes>

²⁴ <https://money.usnews.com/investing/news/articles/2024-01-09/tesla-lowers-range-estimates-as-u-s-regulators-tighten-vehicle-test-rules> <https://www.bloomberg.com/news/newsletters/2024-01-16/how-the-us-can-emerge-from-its-ev-charging-woes>