



Transmitted via Email
swade@arb.ca.gov
mansingh@arb.ca.gov
jyuan@arb.ca.gov

March 20, 2017

Mr. Sam Wade
Branch Chief Fuels Program
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Low Carbon Fuel Standard: Electricity as a Transportation Fuel

Dear Mr. Wade:

CalETC is a non-profit association promoting economic growth, clean air, fuel diversity and energy independence, and combating climate change using electric transportation. CalETC is committed to the successful introduction and large-scale deployment of all forms of electric transportation including plug-in electric vehicles, transit buses, port electrification, off-road electric vehicles and equipment, and rail. Our board of directors includes: Los Angeles Department of Water and Power, Pacific Gas and Electric Company, Sacramento Municipal Utility District, San Diego Gas and Electric Company, Southern California Edison, and the Southern California Public Power Authority. Our membership also includes major automakers, manufacturers of zero-emission trucks and buses, and other industry leaders supporting transportation electrification.

CalETC supports the Low Carbon Fuel Standard (LCFS), a program that has been successful thus far in reducing the carbon intensity of California's transportation fuel pool. Given the near-total dependence on oil in the transportation fuels sector, the LCFS is essential to California's efforts to both diversify the transportation fuels sector and reduce emissions from carbon-based fuel.

We appreciate this opportunity to provide feedback to CARB staff on proposed modifications to some of the electricity-related provisions of the LCFS.

1. CARB staff proposes to update ELC002_1 based on new information to reflect the changes in California's electric mix driven by the Renewable Portfolio Standard and other factors. On an annual basis, CARB staff proposes updating and posting the ELC002_1 pathway carbon intensity value using the most recently available electricity data from the California Energy Commission's Quarterly Fuel and Energy Report or other appropriate data source suggested by stakeholders.

CalETC supports the CARB staff proposal. This approach is consistent with the treatment of other LCFS fuel pathways and recognizes that electricity is heavily regulated with stringent

requirements to rely increasingly on renewable resources. The California utilities are committed to working with CARB staff to provide the most robust data in support of the annual carbon intensity updates. Our initial suggestions regarding the most robust sources of data for updating the carbon intensity factor for electricity include the mandatory reporting information that CARB maintains, CEC's quarterly fuel and energy report and CEC's power content label. We will review each of these data sources and work with CARB to determine which source or combination of sources most accurately reflects carbon emissions associated with electricity in California.

2. CARB staff proposes the addition of a new electricity pathway, "ELCR100." ELCR100 will be a Lookup Table pathway representing electricity produced completely using wind or solar generation resources. Applicants who produce electricity from other renewable sources (such as biomass generation) that is not adequately represented by the previously discussed pathways would still need to apply for an individual (non-lookup table) pathway.

CalETC supports the addition of an ELCR100 pathway. Similar to the comment above, this new pathway is consistent with the treatment of other LCFS fuel pathways and recognizes the carbon reduction value of 100 percent solar- and wind-generated electricity. We suggest keeping this approach as simple as possible, green tariff programs at the utilities exist and are already verified. Therefore, green tariff programs are an obvious option for complying with this optional pathway. Further, this pathway supports utilities' and California's goals to reduce emissions from the electricity sector. Other possible options for ELCR100 should also be explored with the assurance that such pathways are not overly complicated and can be verified with relative ease.

3. CARB staff proposes providing two clear options to recognize a reduced carbon intensity for renewable power supplied to electric vehicle charging stations. CARB staff proposes allowing renewable electricity to be eligible for an improved carbon intensity score if it:
 - a. is obtained through a program with eligibility requirements that match or are more stringent than the Green Tariff Shared Renewables Program¹⁰ under California Public Utilities Code Section 2833(1)(ii); or,
 - b. meets all of the following criteria: generated on land owned by the charging station operator and located within the same EDU territory as the charging station; the renewable generation system is developed expressly for supplying the station's power demand, meaning the project is developed concurrently or after the station is installed, as existing resources may not be shuffled to meet the station's demand; meets the renewable eligibility requirements in the California Energy Commission (CEC) Renewables Portfolio Standard Eligibility Guidebook (RPS Guidebook); and does not produce RECs or other attributes recognized under any program except RFS2.

CalETC supports these options in concept. The California utilities have already begun meeting with CARB staff to discuss how renewable resources are tracked and credited in the current renewable resource markets and provide CARB with data from fleets that utilize the green tariff programs. Please also refer to our previous response.

4. CARB staff proposes requiring a unique identifier for each registered fueling facility (electric vehicle charging station). CARB staff has learned, through communication with the electric vehicle service providers, that the meter used on the electric vehicle charging equipment should have a unique serial number assigned by the original equipment manufacturer. The serial number, along with the manufacturer information, could be used to assign a unique identifier for each electric vehicle fueling facility. This unique identifier could facilitate validation of each new registered electric vehicle fueling facility in LRT-CBTS and would allow CARB staff or verification bodies to match utility records to specific fueling facilities. Staff believes that providing facility-specific information will improve data accuracy and avoid double-counting of fuel dispensed at individual fueling facilities, and ensures that the fuel for which credits were claimed is used for transportation in California.

CalETC recognizes the need to ensure against double counting and suggests pursuing alternative approaches to the unique serial number referenced by CARB staff. The serial number approach has significant challenges, including:

- a. EV charging meter ownership varies and different parties perform maintenance and replacement activities.
- b. As substantially more chargers are installed, it is likely that site hosts will seek to reduce costs for themselves and/or their customers by simplifying the metering system such that it may apply to a full bank of chargers and not specifically to each charger.
- c. Keeping an accurate overall EV charging station metering database would be challenging, given the logistical considerations.
- d. Charging systems are developing rapidly and it is essential to a positive consumer experience and for the industry to focus on simplicity and cost reduction, in addition to consumer convenience.

We suggest standardization of the GPS reporting process combined with a verification protocol could simplify and strengthen the current system. The verification process could include a random inspection in locations where there are both multiple charging units and multiple credit generators.

Of note, the California Department of Food and Agriculture, Division of Measurement Standards (DMS), is currently in the pre-rulemaking phase for proposed regulations that would result in the verification and labeling of electric vehicle supply equipment (EVSE).¹ CalETC is already working with DMS and other stakeholders as part of the DMS process. We suggest CARB track the process to determine if the labeling could inform the LCFS verification as appropriate.

5. CARB staff is seeking feedback from stakeholders to develop a specific Energy Economy Ratio (EER) for medium-duty electric buses. The current EER for light/medium-duty electric vehicles determined by the comparison of light-duty electric vehicles with their light-duty conventional counterparts. The medium-duty electric vehicles, such as shuttle buses, may have a different energy economy ratio than light-duty electric vehicles.

CalETC supports staff's recommendation. Presuming specific EERs for medium-duty electric buses is somewhat straightforward and transit agencies and bus manufacturers support a specific EER for medium-duty electric buses, CalETC believes it is appropriate to ensure these vehicles are receiving credits for the full LCFS credit value of their carbon reduction. CARB could facilitate ease in credit generators proposing new EERs by providing a list of resources to aid in the development of new EERs. Such resources include EPRI and NREL as well as expert consultants and academic institutions.

6. CARB staff is seeking feedback from stakeholders to develop vehicle class-specific EER values for heavy-duty electric vehicles based on weight of vehicle classes used in ARB mobile emission inventory EMFAC2014. CARB staff believes more specific EER values could improve

¹ Specifically, DMS is considering language contained in the National Institute of Standards and Technology (NIST) Handbooks 44 and 130. These provisions, as currently drafted, only apply to EVSEs that sell electricity at retail as a vehicle fuel, where "a quantity determination or statement of measure is used wholly or partially as a basis for sale or upon which a charge for service is based." (Handbook 44 [2016] 3.40. Electric Vehicle Fueling Systems, Section A.1., https://www.cdfa.ca.gov/dms/pdfs/regulations/Handbook44_2016_340ElectricVehicleFuelingSystems.pdf. See also Title 4, Division 9, Chapter 7 Motor Vehicle Products, Advertising, Labeling and Method of Sale Requirements, Section 2.34. Retail Sales of Electricity Sold as a Vehicle Fuel, https://www.cdfa.ca.gov/dms/pdfs/regulations/CCRChapter_7_DRAFTTextFuelsLubricantsAutoProducts.pdf.) The proposed regulations do not apply to "the use of any measure or measuring device owned, maintained, and used by a public utility or municipality only in connection with measuring electricity subject to the authority having jurisdiction such as the Public Utilities Commission; ... used solely for dispensing electrical energy in connection with operations in which the amount dispensed does not affect customer charges or compensation; ... or the wholesale delivery of electricity." (Handbook 44 [2016] 3.40. Electric Vehicle Fueling Systems, Section A.2.) Once the regulations are finalized and adopted, enforcement will require the inspection and testing of applicable EVSE. Although this process is not currently included in the proposed regulations, DMS has indicated in workshops that the process for marking EVSE that comply with the regulations will likely include some sort of seal and tracking/numbering system, such as the sealing used for retail gasoline stations. Such a process could be useful for tracking these EVSE under the LCFS program, however the process will need to be worked out with DMS and the local weights and measures officials who will be implementing the regulations.

the accuracy of credit calculation of heavy-duty EV applications. The term heavy-duty vehicle covers a wide spectrum of vehicle types and sizes, ranging from 8,501 lbs. to over 60,000 lbs.

CalETC does not oppose this concept, but we are concerned that having many more EERs for each class of truck and bus could unnecessarily complicate the program and may have minimal impact on credit values. As an alternative, we suggest that CARB use a single EER for these categories of vehicles (recognizing it would be conservative) and new EERs could be developed over time. It may be that some credit generators prefer the conservative EER for simplicity and expediency. See the response in the previous comment regarding resource lists for parties seeking to pursue specific EERs.

7. CARB staff is seeking feedback from stakeholders to develop specific EERs for Ground Support Equipment (GSE) and Truck Stop Electrification (TSE).

CalETC supports development of EERs for GSE and TSE. Allowing credits for these applications is consistent with the LCFS goal to reduce the carbon intensity of fuels and would encourage electrification of these applications. Parties wishing to generate credits from these sources should pursue EER development using the resource lists previously suggested.

8. CARB staff is proposing to allow electric forklifts that are introduced into the California market after the 2010 baseline year to earn LCFS credits using the regular credit formula that includes the EER term.

CalETC supports CARB staff's proposal as it would make the credit calculations consistent among all the off-road electricity applications.

9. For light- and medium-duty EVs, CARB staff is considering a new credit calculation methodology that would start by crediting the EDU based on a quarterly estimate of the full electric use by vehicle type (rather than based on an estimate of residential charging that is employed currently). To avoid double counting, ARB would then subtract credits generated by separately metered residential, public, private/workplace, and fleet charging explicitly claimed by opt-in parties within the service territory of each EDU. This approach may accurately capture more electricity use and avoiding "stranded credits" from currently unreported public, workplace and fleet EV charging.

CalETC supports the concept of this new credit calculation approach. Currently the potential credits for electricity are not being realized as many workplace and public charging applications do not opt-in to the LCFS. This approach would ensure that electricity used as a fuel for vehicles is generating LCFS credits. The staff's approach to ensuring against double counting also ensures that site hosts or workplaces that want to generate LCFS credits can do so. To ensure the program is kept as simple as possible and ensure the value of the LCFS credit

gets to EV drivers, it will be important to clarify that only public or workplace charging are considered opt-in parties. With the ever-increasing amount of vehicle usage data directly available, including: the on-board diagnostic requirements coming into effect this year (MY 2018); auto maker data provided voluntarily; and data collected in aggregate by national labs or other stakeholders. This approach is robust and can reflect any changes in the technology or marketplace accurately.

10. CARB staff is seeking feedback from stakeholders to the combination of EV fleet charging with private access charging and the elimination of the battery switch category.

CalETC supports combining electric vehicle fleet charging with private access charging. We recognize the battery switch category as just another charging location already capable of generating LCFS credits, referencing battery switching specifically in the regulation is duplicative and unnecessary.

CARB staff is considering exempting grid EV charging from third-party verification, with the exception of the renewable pathway option above.

CalETC supports exempting grid electric vehicle charging from third-party verification, with the exception of the renewable pathway option. Utilities are heavily regulated and the reporting requirements for utilities are more onerous than for other fuels, e.g. other fuels are not required to demonstrate that proceeds are returned to drivers. Additionally, the utility calculations for LCFS credits are largely a result of data points originating from CARB, unlike other credit generators.

Thank you for your consideration, CalETC and its member utilities look forward to continuing to work with CARB staff in support of the Low Carbon Fuel Standards.

Regards,
California Electric Transportation Coalition



Eileen Wenger Tutt
Executive Director