November 21, 2014

(Transmitted via email: mwaugh@arb.ca.gov)

Mr. Michael S. Waugh, Chief
Transportation Fuels Branch
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Re: Comments on November 2014 Low Carbon Fuel Standard Workshop

Dear Mr. Waugh:

The California Electric Transportation Coalition (CalETC) appreciates the opportunity to comment on the Low Carbon Fuels Standard (LCFS) November 2014 workshop. CalETC is a non-profit association with a board of directors that includes: Los Angeles Department of Water and Power, Pacific Gas & Electric, Sacramento Municipal Utility District, San Diego Gas & Electric and Southern California Edison.

First, we laud the California Air Resources Board (CARB) in the design and implementation of the LCFS. The regulation is designed to set a standard for the regulated industry and allow the industry to determine how best to meet that standard. This design has resulted in unanticipated innovation in both fuels and vehicles. Early implementation of the LCFS has demonstrated the effectiveness of the design in that the industry is over complying and credits are being generated from sources not originally anticipated during the development of the LCFS. CARB staff has meticulously considered all aspects of the regulation during this unfortunate legal delay and we appreciate the opportunity to provide some initial feedback.

CalETC respectfully requests that the marginal electricity emissions factor (g/MJ) in the look-up table be updated to reflect a transition from 20% renewables in the current factor to a new factor that includes the required 33% renewables by 2021, and that look-up table also include appropriate values for 2017 and 2019 as part of this transition.

Although we understand that there may be some legal considerations in adjusting the electricity emissions factor, we believe the LCFS has consistently recognized cleaner pathways for all fuels. As with every alternative fuel, there are unique aspects to electricity that make it a particularly attractive low-carbon fuel. California's electricity mix is clean and getting cleaner, the state requires one-third of all electricity be generated from renewable resources by 2020 and the state utilities will exceed that requirement. We thank you for your consideration in this matter.

CalETC also supports the amendment to the EER for electric buses. The update is consistent with testing of three different buses at the Pennsylvania Transportation Institute (PTI) Test Facility:

- New Flyer of America Model XD40 – Diesel
- BYD Motors, Inc Electric Bus – Electricity
- Proterra, Inc Model BE-35 – Electricity

The testing was done using a Transit Coach Operating Duty Cycle (ADB Cycle) that comprises of three (3) Central Business District (CBD) phases, two (2) Arterial (ART) phases and one (1) Commuter (COM) phase. As stated in the reports by PTI, "the results of this test will not represent actual mileage but will provide data that can be used by recipients to compare buses tested by this procedure." There was one modification made to the testing cycle for the electric buses, where when the electric buses can no longer maintain the specified test speed, the bus will be driven to the charge station for a full charge. The electric

buses then resumed the test cycles. All necessary data including total miles traveled, total energy consumed while driving and total energy consumed while charging were recorded. The table below shows the calculations that reproduce the EER values presented by ARB. There is a small variation in miles per diesel gallon equivalent (DGE) for the electric buses presented below and what was calculated by PTI since the LCFS uses a lower heating value for diesel (134.47 MJ/gallon). Conversion from kWh/mi to mi/DGE was done with the LHV of diesel and the conversion factor of 3.6 MJ/kWh. Even with the small variations in fuel economy, the values match those presented by ARB during the November 13, 2014 workshop.

Vehicle	Fuel Economy	Conversion to mi/DGE	EER	Average EER
New Flyer	4.82 mi/gallon	4.82 mi/DGE	N/A	
BYD Motors	1.988 kWh/mi	18.79 mi/DGE	3.9	4.2
Proterra	1.73 kWh/mi	21.59 mi/DGE	4.5	

CalETC will provide additional comments on additional subjects as the rulemaking process continues. We look forward to working with staff as this groundbreaking and essential regulation is re-adopted. Thank you for your consideration.

Regards

Eileen Wenger Tutt, Executive Director
California Electric Transportation Coalition

EWT/kmg
cc: Manisha Singh (mansingh@arb.ca.gov)