

CleanFuture, Inc.
P.O. Box 23813
Portland, OR 97281-3813
office: +1 503 427-1968
e-mail: john@CleanFuture.us

March 15, 2023

Dr. Cheryl Laskowski
Branch Chief, Transportation
California Air Resources Board
P.O. Box 2815
Sacramento, CA 95812

RE: Comments on February 22, 2023, Workshop to Discuss Potential Changes to the Low Carbon Fuel Standard

Dear Dr. Laskowski,

Thank you for the opportunity to provide comments related to the February 22, 2023 Workshop relating to multiple topics in the rulemaking. We appreciate the opportunity to provide comments into this rulemaking, and regard the Low Carbon Fuel Standard (“LCFS”) program as an essential program in the decarbonization of the transportation sector.

CleanFuture is an industry leading company connecting clean vehicle fleet customers with low carbon intensity (“CI”) fuels, serving both on the supply and demand side in California’s LCFS, Oregon’s Clean Fuels Program (“CFP”), Washington’s Clean Fuels Standard (“CFS”), and other emerging clean fuel standards. CleanFuture is a designated credit generator and aggregator for hundreds of fleets and thousands of vehicle units for these state CFS programs. CleanFuture provides full-service low carbon consulting to its clients including fleet efficiency; low carbon fuel utilization; clean vehicles and vehicle technologies; and monetization strategies. CleanFuture is the leading supplier of renewable electricity from biogas as a transportation fuel to heavy-duty EVs in California’s LCFS and Oregon’s CFP. We also serve as a third-party aggregator and supply funding to fleets to incentivize and advance heavy-duty vehicle electrification and charging stations, while improving economics for biogas to renewable energy projects.

CleanFuture is pleased to provide the following comments:

1) Comments on Verification of Quarterly Fuel Transaction reports for Electricity

CleanFuture has a unique perspective developed based on program experience regarding verification of electric vehicle fueling transactions as a company that serves as both:

- 1) a fuel pathway holder for numerous Tier 2 electricity pathways, and,
- 2) the first fuel reporting entity for non-residential EV charging across a large and diverse portfolio of EV assets across every EV category in the LCFS.

CleanFuture has experience in heavy-duty EV charging in trucks and buses, eTRU fueling,

eCHE fueling, eOGV fueling, electricity in fixed guideway electric vehicles, as well as EV charging in light-duty EVs and motorcycles, and electric forklifts. Based on this experience, CleanFuture understands why CARB wants to impose verification requirements to ensure data integrity given the expected expansion of transportation electrification.

At that same time, however, CleanFuture encourages CARB to develop verification systems for the diverse range of electric vehicle sectors that is fit for purpose and that does not undercut California's goal of accelerating and maximizing transportation electrification. The LCFS is an essential tool in this endeavor based on the value the program delivers to market participants. To the extent that CARB imposes a verification system that is unduly costly and burdensome, this will inadvertently impede electrification. Therefore, CARB must strike the right balance between verification and program viability with regarding to each EV market sector.

In order to achieve the proper balance that is necessary to sustain the healthy and rapid transition to electrification that is occurring in California, it is not sufficient for CARB to revise §95500 by simply adding the various EV sectors. Instead, CARB must undertake a review of §95501 on a EV sector-specific basis. Generally speaking, the verification obligations imposed on large scale biofuel facilities and oil and gas market participants are overly burdensome to impose on the EV sectors. Electric vehicles are integrated into businesses that utilize a wide variety of infrastructure at different scales, and the infrastructure and vehicles are sometimes quite limited in scale and number. The existing §95501 should not simply be transferred to these diverse EV sectors. CARB should instead review each EV sector and establish varying requirements. In many of these sectors low-cost verifications including desk audits, remote verifications (i.e., via video conferencing) and submission of documentation for sampling review by verification bodies is sufficient and should be permissible. To the extent CARB lacks sufficient time in this rulemaking to undertake this sector-specific review, these regulatory changes should be undertaken in a future rulemaking with sufficient time to assess these issues.

2) Comments on Metering Requirements for Electric Forklifts

Metering requirements should provide flexibility to measure electricity supplied to electric forklifts depending on each site's specific situation. Due to individual site and vehicle/fleet characteristics, there are a broad array of configurations to deliver electricity to vehicles. The LCFS should similarly allow metering of aggregated electricity charging consumption measured at the electric distribution panel level when isolated to forklift charging, or metering batteries or chargers, or use of forklift truck telematics so that the most cost-effective technology can be deployed at any given location. Each site and electric forklift truck deployment is different, so providing for a range of data collection options is important.

3) Forklift Crediting with Fractional Displacement

On the issue of forklift crediting, we would first recommend that CARB refrain from imposing a sudden LCFS change that reduces electric forklift crediting. One of the key strengths of the LCFS program is its tenure and reliability. Sudden shifts in crediting as have been proposed for forklifts are disruptive to market participants, and erode confidence in the stability of the LCFS program. Reduced confidence in the LCFS from industry will result in the LCFS becoming less relevant and effective in achieving its electrification goals. Therefore we recommend that CARB stay the course and maintain its current approach to forklift crediting.

To the extent that CARB determines that it is imperative to alter forklift crediting in this rulemaking, we would recommend that CARB take a measured approach in order to minimize disruption and maintain industry confidence. In particular, CleanFuture recommends review of the work done by Dr. Colin Murphy at UC Davis, “Improving Credit Quantification Under the LCFS: The Case for a Fractional Displacement Approach.”

In the paper, Dr. Murphy makes the following recommendation regarding e-forklifts:

“Based on the assumption of a 40% incumbent fraction, immediate application of FD crediting would result in a precipitous drop in LCFS credit generation from this category, compared to the current method. While this would more accurately reflect anticipated emissions benefits, it could have a disruptive effect on the progress of this sector toward carbon neutrality. To mitigate this, a gradual catch-up approach that limited the maximum rate of change for the $F_{displaced}^{XD}$ term to no more than 10% per year was adopted. This guaranteed a phase-down period for credits from fuel displacement of no less than 10 years (Figure 4).”¹

The Fractional Displacement (FD) crediting approach described in this paper proposes a minimally disruptive, technologically neutral modification to the existing LCFS credit quantification methods. CARB’s proposed reduction in e-forklift crediting is an ad-hoc solution which reduces confidence in the LCFS and is a piece-meal approach which fails to address an underlying problem as advanced technology vehicles achieve widespread adoption with significant market penetration. The paper proposes a structured approach with a sound methodology to mitigate market imbalances expected to emerge over the coming decade.

As CARB implements regulations requiring discontinuation of sales of vehicles with the incumbent technology by a given point in time, the incumbent fleet fraction could be estimated using models of vehicle retirement and replacement, based on targets set in the regulation.

The FD approach offers the opportunity to more accurately represent credits generated by advanced technology vehicles as they become more prevalent in the fleet, which would strengthen the connection between actual emissions benefits and the amount of incentive. This instills a robust market with continued confidence in the LCFS, CARB must develop defined criteria for removal or reduction of a fuel or technology from LCFS eligibility. Such criteria should be developed with stakeholder participation; and must transparent and objective to provide long-term signals within the regulation. To the extent CARB lacks sufficient time in this rulemaking to develop a long-term solution applicable to all advanced vehicle technologies within this rulemaking, these regulatory changes should be undertaken in a future rulemaking with sufficient time to assess these issues.

4) CARB should not impose Mandatory Use and Reporting of LCFS Credit Proceeds on Private Businesses

In terms of cumulative LCFS credit value, the LCFS market is heavily dominated by private businesses including petroleum refiners and importers who are the regulated parties, and companies that produce the largest credit generating fuels: ethanol, renewable diesel, biodiesel, and biomethane. Notably, while the LCFS mandates that the regulated parties achieve the annual fuel standards, it does not dictate the means of compliance. Similarly, the LCFS does not impose

¹ Dr. Colin Murphy, “Improving Credit Quantification Under the LCFS: The Case for a Fractional Displacement Approach,” (December 21, 2022), at <https://escholarship.org/uc/item/0px4m8hz>, at p. 16.

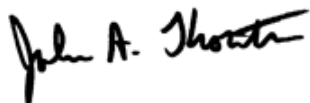
mandates on the large volume fuel-producing LCFS credit generators that would require these private businesses to spend credit proceeds in a particular manner and report this spending to CARB. For these businesses, CARB is appropriately relying on the market-based nature of the LCFS to incentivize these businesses to supply low carbon fuels to the California transportation market and decarbonize these fuels to the greatest extent feasible. These companies are not burdened to spend proceeds from LCFS credit sales in a prescribed manner and to report that spending to CARB. These LCFS participants continue to generate the large majority of LCFS credits and this free-market approach has been highly successful in growing supply and lowering the CI of these fuels.

In the past several years, electricity has become a more significant source of LCFS credit generation and has changed the LCFS landscape with electricity credits. In particular, highly energy efficient EVs benefit from energy economy ratios (EERs) such that these vehicles can generate significant credits even though the electric “fuel” that the vehicles typically use is comparable in carbon intensity (CI) to diesel, gasoline and fossil natural gas. Also importantly, the electric distribution utilities (EDUs) that supply electricity to the residences of light-duty EV drivers are not in the business of supplying low carbon intensity fuel but are instead investor-owned utilities, publicly-owned utilities, or electrical cooperatives in the business of supplying electricity. Given this situation, there are sound policy reasons for CARB to impose credit proceeds use and reporting obligations on EDUs in that these participants are essentially receiving revenues based on their customers’ activities.

The policy justification for mandating expenditures and reporting does not extend to Non-Residential EV Charging and private businesses. CARB should therefore maintain its existing approach of not requiring private businesses to spend proceeds from LCFS credit sales in a prescribed manner to report that spending to CARB.

Thank you for the opportunity to comment.

Sincerely,



John A. Thornton, President
CleanFuture, Inc.