



March 15th, 2023

VIA ELECTRONIC FILING

California Air Resources Board 1001 I Street
Sacramento, CA 95814

RE: California Low Carbon Fuel Standard Feb. 22nd, 2023 Public Workshop

Dear Ms. Laskowski and California Air Resources Board's Transportation Fuels Branch Staff,

We are pleased to provide comments on potential changes to California's Low Carbon Fuel Standard ("LCFS") program. We appreciate the opportunity to engage with Air Resources Board ("ARB") staff during this process. These comments build and expand upon comments and analysis that we provided to ARB on June 23rd, 2022, August 9th, 2022 and December 21st, 2022.

ARB's Direction Is Promising

We were encouraged that ARB emphasized several important objectives for its LCFS rulemaking during the February 22nd Workshop, specifically to

- Update the LCFS to support growth in the low-carbon fuel supply by modifying the carbon intensity (CI) reduction targets through 2030 to 30% or greater, and establishing post-2030 targets;
- Provide a long-term price signal and increase regulatory certainty; and
- Streamline program implementation.

We commend ARB for collaborating with stakeholders in the lead-up to making definitive and constructive changes to the LCFS program.

Updating Carbon Intensity Reduction Targets: The Path Is As Important As The Destination

The LCFS program's success in supporting the growth of low-carbon-intensity fuels has been abundantly clear over the past year as the path of the program's outperformance has consistently accelerated. ARB's quarterly data for Q3 2022, released on January 31st, 2023, showed a 13.3% CI reduction, not far off the current 2025 target!

The path towards a more ambitious CI schedule matters greatly, and we were encouraged that CARB's own modelling suggested "that a 'step change' in compliance target stringency is

needed in the short term to send a strong price signal in the mid-2020s to increase ambition for 2030.”¹

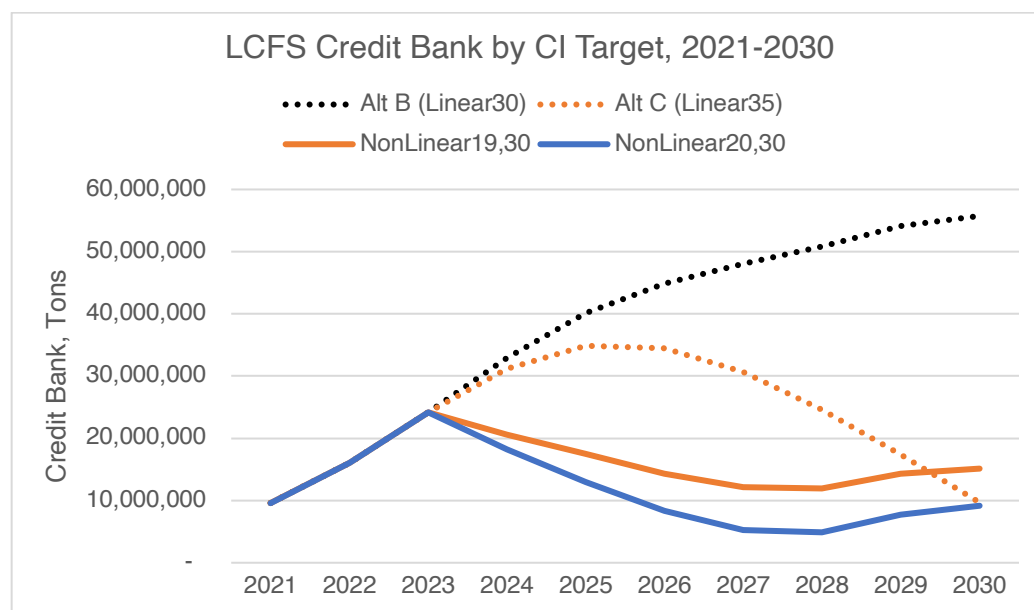
That conclusion aligns with our own. Indeed, we believe that a significant step-down towards a 20% target in 2024 on the way to an ambitious minimum 30% target in 2030 is the **single most consequential action** ARB can take for several reasons, including:

- It is forward-looking, allowing the ambitions of the LCFS program to retake the lead,
- It results in an immediate inflection in the trajectory of the credit bank,
- It leads to an immediate and robust price response, and
- It encourages a front-loading of investment, leading to greater near-term GHG reductions relative to linear alternatives.

Building upon what we presented in our December 21st comments, we have modeled five scenarios: ARB’s Alternatives B and C and three scenarios with significant CI step-downs of 18%, 19% and 20% in 2024 on the way to a minimum 30% CI by 2030.²

Figure 1 illustrates how the different CI reduction targets impact the supply and demand fundamentals of the LCFS credit market.

Figure 1: Estimated Credit Bank Trajectory Under Five Alternatives



¹ CARB, Low Carbon Fuel Standard Public Workshop: Potential Regulation Amendment Concepts, February 22nd, 2023, Page 52

² In all cases, we assume the credit bank will have grown to approximately 24.1 million MT by the end of 2023. This is roughly 3 million MT more than our assumption in our December 21st Comments, due to the accelerated outperformance of the program. We have aligned inputs to our model with those from the California Transportation Supply (CATS) model in response to ARB’s November 9, 2022 Public Workshop in which staff provided inputs to their own modeling. We have provided ARB more details regarding the inputs of our modeling via confidential correspondence.

Our conclusions about Alternatives B and C are identical to those in our comments on both August 9th and December 21st: neither of these linear alternatives immediately inflect the trajectory of the bank and both lead to credit bank levels and trajectories later in the decade that would jeopardize the ability of the LCFS program to meet its objectives.

By contrast, a “step-down” in the 2024 CI reduction target to 19% or 20% on the way to a minimum 30% by 2030 produces optimal outcomes on three key metrics:

- It results in an immediate inflection in the trajectory of the credit bank, rebalancing the market in response to the encouraging success of the LCFS in earlier years while keeping the bank in positive territory in later years.³
- It results in the most positive impact on the near-term incentive value of the LCFS while producing an average cost between 2024-2030 slightly higher the average LCFS credit price between 2018 and 2021 but below the cap.
- It results in the greatest reductions of Greenhouse Gases by front-loading new investments such that, between 2026 and 2030, it achieves reductions higher than Alternatives B or C.

In short, adopting a CI schedule with a meaningful step-down in 2024 is the only path that allows ARB to meet its objective of providing a long-term price signal and increasing regulatory clarity for the market. This will incentivize near-term investment, help scale nascent technologies and ultimately support the deeper transportation sector decarbonization needed through mid-century.

Verification for Electricity Credit Generation

In its February 22nd Workshop ARB highlighted the potential to introduce third-party verification requirements for EV charging transaction types.⁴ While we appreciate the need for third-party verification to ensure the integrity of the LCFS program, we encourage ARB staff to consider the cost-effectiveness and feasibility for third-party verification of reporting for residential EV charging.

We recommend ARB establish that any third-party verification of EV charging transactions occur annually and in aggregate, or through a random sampling of residential EV charging data. We also recommend that ARB consider how the requirements for third-party verification will interact with the requirements imposed on many credit generators by the 2018 California Consumer Privacy Act, particularly for residential EV charging.

³ We note that while this does not result in annual credits \geq deficits between 2024 and 2028, the more appropriate constraint, which applies in this case, is that credits + the credit bank \geq deficits in any given year.

⁴ CARB, Low Carbon Fuel Standard Public Workshop: Potential Regulation Amendment Concepts, February 22nd, 2023, Page 72

Other Changes To Streamline Program Implementation

BTR has previously encouraged ARB to consider other technical changes to the LCFS, including many of the changes described below.

EV EERs

We noted that in its February 22nd Workshop, ARB highlighted it would be making several updates to emissions factors and fuel pathway carbon intensities.⁵ We respectfully suggest that ARB also update the Energy Efficiency Ratio (“EER”) assigned to on-road light, medium, and heavy-duty EVs based on a more recent analysis of how the efficiency of internal combustion engine vehicles compares to similar EVs.

“Geofencing Radius” for Residential EV Charging

ARB should consider reducing the current “conservative” Geofencing Radius (“GFR”) of 220 meters to a smaller and more precise GFR (such as 20 meters), as described in LCFS Guidance 19-03, Appendix A “Rationale for Minimum and Maximum Geofencing Radius.” The GFR is used to “disaggregate the quantity of electricity used for residential and non-residential EV charging” and should be as precise as possible.

We are concerned that as charging station network operators and utility companies install more charging stations, an increasing amount of residential EV charging will be erroneously categorized as non-residential and therefore ineligible to generate credits. This will be particularly acute in densely populated urban areas of a mixed-use commercial/residential nature.

We believe that geolocation data (latitude, longitude) provided by non-residential reporting entities, as well as the precision of on-vehicle telematic systems, supports a higher precision GFR.

Incremental Credit Generation for Residential EV Charging

EV manufacturers are currently second in a “hierarchy” of stakeholders eligible to generate incremental LCFS credits for residential EV charging. This hierarchy provides little value to the efficacy of the LCFS and unnecessarily complicates the registration process. EV manufacturers generate the vast majority of all incremental LCFS credits generated for residential EV charging.

We recommend ARB consider either eliminating the hierarchy and establishing EV manufacturers as the sole stakeholder eligible to generate incremental LCFS credits for

⁵ CARB, Low Carbon Fuel Standard Public Workshop: Potential Regulation Amendment Concepts, February 22nd, 2023, Pages 65-66

residential EV charging or reorganizing the hierarchy such that EV manufacturers are the first-priority credit generator.

ARB should also clarify in the regulation that EV manufacturers may designate a third-party to act as a first-priority credit generator on their behalf.

Expand the Boundaries for the Book-and-Claim Accounting System

To generate incremental LCFS credits, EV manufacturers and others must purchase and retire Renewable Energy Certificates (“RECs”). The price of the RECs has been largely uncorrelated with the value of the incremental LCFS credits since ARB introduced the book-and-claim accounting mechanism in its 2018 rulemaking. As such, the cost of CA-sited RECs required to generate incremental LCFS credits could ultimately exceed the value of the incremental credits, particularly as the value of the incremental credits continues to decline and/or if LCFS prices were to continue to decline.

In both its November 9th and February 22nd Workshops, ARB suggested changes to changes to the geographical boundaries of certain fuel pathways. ARB could similarly consider adjusting the requirement that RECs purchased and retired from *outside* California for LCFS purposes be associated with electricity that is physically scheduled *into* California, for example, by allowing any REC generated from a Zero CI resource in the Western Interconnect qualify. In doing so, ARB would enable incremental credit generators to access a larger supply of RECs. Additionally, CARB could enable book-and-claim accounting of RNG sourced from projects across North America to be eligible for both hydrogen production *and* electricity generation.

Conclusion

We continue to be encouraged by ARB’s direction towards introducing suitably aggressive CI reduction targets pre-2030 and providing an investable pathway for California to meet a 2045 CI reduction target of 90%.

Adopting a CI schedule with a significant step-down towards 20% on the way to an ambitious minimum 30% target in 2030 is the single most consequential action ARB can take.

The transportation sector is the largest sector contributing to greenhouse gas emissions and reducing those emissions is critical to achieving carbon neutrality. The LCFS has been an important and effective tool, and it can continue to be so particularly if ARB makes changes to streamline the implementation of incremental electricity crediting such as those described above.

We thank you again for the opportunity to provide these comments, and we look forward to continued engagement with ARB staff. If we can provide additional information or further support your efforts, please contact us.

Sincerely,

A handwritten signature in blue ink, reading "Ashley P. Beaty". The signature is fluid and cursive, with the first name "Ashley" and last name "Beaty" clearly legible.

Ashley P. Beaty
Vice President of Policy and Partnerships
Bridge To Renewables, Inc.

A handwritten signature in black ink, reading "Russell Dyk". The signature is cursive and stylized, with the first name "Russell" and last name "Dyk" clearly legible.

Russell Dyk
Head of Environmental Products
Bridge To Renewables, Inc.