GENERATE

May 10th, 2024

Matt Botill
Chief, Industrial Strategies Division
California Air Resources Board
1001 I Street, Sacramento, CA 95814

Mr. Botill and CARB Staff,

I am pleased to write on behalf of Generate Capital, PBC ("Generate") regarding the current rulemaking process to update and strengthen the Low Carbon Fuel Standard ("LCFS"). Generate is a leading sustainable infrastructure company based in San Francisco. Generate builds, owns, operates, and finances infrastructure solutions for clean energy, transportation, water, waste, agriculture, and smart cities. Founded in 2014, Generate partners with technology- and project-developers to deliver affordable, reliable, and sustainable resources to over 2,000 customers, companies, communities, school districts and universities.

Over the last several years, Generate has written many letters to CARB proposing or endorsing various policy elements of a revamped LCFS. We commend you and CARB Staff for consistently being open to feedback from a wide variety of stakeholders with – often strong – opinions of what an ideal LCFS program would look like. In this letter, we will continue to offer feedback on next steps, but the underlying emphasis of this letter should be unequivocal: **it is time to finalize this process**. The first meeting CARB hosted on potential changes to the LCFS program was in October 2020, when LCFS credits priced at $195/MT and the credit bank was under 8 million; credits are currently $48/MT and the credit bank has ballooned to 23 million. Pricing continues to fall as the market simply does not believe CARB will ever take action. Investment in projects has ceased. Operating projects are shuttering. It is time.

We urge CARB to finalize this rulemaking with a vote at the June or July board meeting.

As such, the areas we will offer our perspectives on in this letter are much more limited than in prior rounds of comments. This is a credit to CARB staff, who have sufficiently iterated on and refined the proposed changes to the point that what we are now discussing are largely technical matters. While there are other areas such as technology neutrality that are core to why we have invested in LCFS-linked projects, we feel as though we have offered our fully developed thoughts in prior commentary. The areas we will focus on in this letter include:

- The changes to the diesel baseline and its impact on credit supply and demand, and;
- The 2025 CI step-down and the 2030 CI target.

We would be happy to discuss these and other aspects of the LCFS program with CARB staff. We are committed to the ongoing success of the LCFS program, of California's Scoping Plan, and to the decarbonization of our economy at scale. Thank you for your hard work on these goals and towards California's continued leadership in the fight against climate change.

Sincerely,

Asher Goldman

Asher Goldman
Vice President
Generate Capital

CARB's solution to offset the increase in diesel's baseline CI value included a key flaw, making the solution inadequate to address the increase in the credit bank expected from this change; the CI reduction targets should be increased to fully counteract the change in the baseline

In our prior letter to CARB following the publication of the ISOR, we flagged that the increase to diesel's 2010 baseline effectively reduced the ambition of the LCFS program and would be expected to result in a larger credit bank, reduced credit pricing, and reduced investment in projects. At the April 10 Public Workshop, we were pleased to see that CARB moved to address this, incorporating offsetting changes to the CI scoring of biomass-based diesel products. In the presentation used during the workshop, CARB noted that "[a]n adjustment in the RD/BD CI scores to reflect the same change to both is included in the modeling". At the time, we had believed that the adjustment being incorporated by CARB would functionally increase the CI scores of these fuels by 4.78g/MJ, which would have been a satisfactory outcome.

Upon further review and discussion with other market participants, it has become apparent that this view was not entirely correct. The 4.78g/MJ increase applied to biomass-based diesel's CI scores had been calculated from the revised modeling of tailpipe emissions of methane, nitrous oxide, and carbon dioxide. Our understanding is that the increased carbon dioxide would not be counted here as it is considered biogenic. As a result, the actual applied change to biomass-based diesel fuels' CI scores would be just 2.74g/MJ.

This is material to the supply-demand balance in the LCFS market. Assuming no change in biomass-based diesel volumes from Q4 2023 (a bad assumption given the huge volumes of renewable diesel coming online in 2024), the change from a 4.78g/MJ adjustment to a 2.74g/MJ adjustment would yield an extra 650,000 MT of credit production in 2025; through 2040, this would be expected to be **worth 10M MT of incremental credit production**.

Throughout the rulemaking process, CARB staff has continually demonstrated a commitment to science-based reasoning underpinning each decision made. We applaud this; the fact-based approach allows investors like us to have confidence in CARB to oversee and administer this program in a consistent, level-headed manner. As such, we do not want CARB to adjust the CI scores of biomass-based diesel fuels any more than the rigorous modeling already performed suggests reflects the fuels' real-world lifecycle emissions. Instead, we would like to see CARB consider this mechanical increase in credit production (and corresponding relaxation of the LCFS's stringency) as you set the step-down magnitude. **Our estimate is that this change is equivalent to reducing the 2025 step-down by ~2% and we suggest increasing the step-down's magnitude accordingly.**

For both the 2025 step-down and the 2030 target, CARB must substantially increase the ambition of the LCFS program in order to reaffirm the LCFS as a program that attracts and rewards long-term capital investment and infrastructure development

Two weeks ago, CARB published data from Q4 2023 showing a 17.3% achieved CI reduction[1]. That puts the program roughly achieving the program's targets *for 2028*. We at Generate specialize in climate investing, and we cannot point to another decarbonization program that has so wildly outpaced its targets. As CARB is aware, the consequence of that rapid success

[1] California Air Resources Board. *LCFS Quarterly Data Spreadsheet*. April 2024.

has been a collapse of the market price of LCFS credits in the face of substantial excess supply; at present, **LCFS credit prices are the lowest they have been since 2015**.

The market is demanding more ambition than what has been proposed to date, including that from the April 10 Public Workshop. Pricing has fallen nearly 30% since the publication of the workshop documents containing the revised step-down values[2]. The remedy for this is greater ambition for both the 2025 step-down as well as for the 2030 CI reduction target.

In the April 10 workshop, we noted in our oral remarks that we would include details of why we viewed a 5% step-down for 2025 to be inadequate. Since then, Q4 2023 data showing nearly 3m MT of excess credits has made this point even clearer. With a 5% step-down, we would expect a continued rapid build in the credit bank – more than doubling over the next 3 years – and an immediate triggering of the Auto-Acceleration Mechanism. It isn't hard to see why: the achieved CI reduction increased by over 4% from Q4 2022 to Q4 2023, and at the end of 2023 that metric sits just 1.5% below where a 5% step-down would place the CI target for 2025. No matter which forward-looking assumptions we use, we get to a 5% step-down being woefully inadequate.

The 7% step-down proposed in the April 10 workshop is also insufficient. While we had initially thought that 7% would be fine, the 2023 Q4 data release combined with the previously discussed error in the adjustment to biomass-based diesel fuels' CI scores pushes this step-down level outside of the range that would balance the market. Our modeling shows an early AAM triggering if this were the chosen step-down and a continued build to the credit bank for the next several years.

Considering the latest data and the other adjustments CARB has communicated in this rulemaking process, our view is that a *minimum* of a 9% step-down is needed to avoid the AAM being triggered, and that a 10% or 11% step-down not only must be considered but are the lowest values at which we would anticipate the credit bank being worked down over time. Each of these scenarios includes CARB maintaining the view that the 30% 2030 target is set. We know that there may be a degree of "sticker shock" to the numbers suggested; CARB must realize, however, that the real sticker shock is seeing credits trade *below $50/MT*. **At present pricing, the LCFS program is not a catalyst for investment**. In each of our prior letters to CARB, we have strongly recommended implementing the step-down in 2024 – a year in which we now believe there will be more than 12m MT added to the credit bank – to avoid the increased magnitude in the step-down that would be needed if CARB waited until 2025; given the delay in this rulemaking, **these levels of action are not only justified but are necessary**.

Alternatively, CARB could choose to adjust the 2030 CI reduction target and lessen the need for as large of a 2025 step-down. If CARB were to adjust the 2030 target to 32%, a 9% step-down would be adequate to promote a stable investing environment. With a 35% 2030 target, a 7% step-down becomes viable. As we have discussed in prior letters, these two adjustments to the CI schedule interact with one another and CARB has the ability to lessen the necessary magnitude of the change in one category by increasing the change in the other. Regardless of the specific values chosen, it is clear that this aggregate magnitude of targets is needed.

[2] Argus Media. *CA LCFS Spot Price.* Accessed May 2024.

Closing Comments

While there are other areas where we have interest in CARB adjusting the current proposal – particularly the AAM and RNG treatment, which we have commented on several times in prior letters – we believe that those considerations must be secondary at this stage to CARB finalizing the implementation of this rulemaking with an appropriate level of programmatic ambition. For years, we have collaborated with CARB and other market stakeholders in an effort to form a more perfect LCFS program, and we seem to be approaching the resolution of that process. It is vital for it to result in a program that can once again attract the needed investment to decarbonize California's transportation system with speed and scale.

To reach that end state, the core adjustments from the latest proposal we request are:

- Finalizing the LCFS rulemaking at the June or July CARB board meeting;
- Including a 2025 CI step-down of at least 9% and ideally 11%, and;
- Increasing the 2030 CI reduction target to at least 32%;

Generate appreciates the opportunity to provide commentary and suggestions, and we look forward to collaborating with CARB on finalizing this process. Should you have any questions about the information contained herein, please do not hesitate to contact us.