



May 3, 2024

Matthew Botill
California Air Resources Board
1001 I Street
Sacramento, CA 95814

Subject: Comments on the Low Carbon Fuel Standard Workshop

Dear Mr. Botill:

Thank you for the opportunity to comment on the April 10th California Low Carbon Fuel Standard (LCFS) Workshop. The LCFS is one of the most powerful climate change policies in the world, uniquely supporting a wide array of innovative, low-carbon fuel production pathways. Its success has proven a model for similar programs that are emerging in other states and countries. We strongly encourage the California Air Resources Board (CARB) to amend the program in a manner that protects and builds on its successful, technology neutral and science-based approach to ensure the program continues to drive innovation and greenhouse gas reductions for decades into the future.

About Ductor

Ductor was founded in 2009 with the ambitious aim of creating a solution that would help solve today's environmental challenges in the energy and agriculture sectors. Today, we build, own, and operate turnkey microbiological facilities, turning organic resources from the agricultural sector into sustainable fertilizers and biogas. With two plants in Mexico and Germany and numerous projects in the pipeline, we are living up to our purpose and unlocking bio-resources to make food sustainable and energy clean.

Ductor's technology transforms nitrogen-rich organic resources from agriculture, aquaculture, and other organic sources into energy and fertilizers. We specialize in feedstock that cannot be used directly in conventional anaerobic digestion and biogas facilities. This feedstock is fed into the Ductor pre-process, where an IP-protected consortium of microorganisms and the IP-protected Ductor process converts them via fermentation and subsequent ammonia recovery into organic and sustainable liquid nitrogen fertilizer. The feedstock is further processed via anaerobic digestion to generate biogas, which is upgraded to pipeline quality. The digestate is further processed into additional fertilizing and soil-improving products.

Ductor's technology targets the poultry sector, which is growing globally to meet the increasing demand for meat and egg products. According to the USDA, as much as 1.4 billion tons of manure is produced annually by the 9.8 billion head of livestock and poultry in the United States. Sustainable and alternative treatment options for this growing waste stream are needed to address environmental and emissions impacts associated with poultry litter management, storage, and land application.

CARB Should Increase the Step-Down to at Least 9%

Ductor appreciates CARB hosting the April workshop to, among other things, re-evaluate the targets associated with the program. As described in our previous comments related to targets and stringency of the program,¹ Ductor supports a stronger step-down, and encourages the step down to take effect as soon as the amended regulation does – including potentially for a portion of 2024.

Since CARB proposed regulatory amendments in December, the credit bank has continued to grow, and credit prices continue to stay low. According to the most recent program data released by CARB,² at the end of 2023, the credit bank stood at 23.5 million credits, and it grew by a net of 8.2 million credits in 2023. If the bank grows by a similar amount in 2024, the cumulative credit bank would stand at nearly 32 million credits by the end of 2024.

According to the analysis presented at the workshop,³ a 9% step-down would remove 27 million banked allowances through 2046. *This means that even the highest step-down under consideration would not clear the existing credit bank over the lifetime of the program.* We fear this is insufficient to correct the market, especially with the modest proposed 2030 targets, which would strengthen the target less over the next 5 years than a 9% step-down would do in a single year.

Accordingly, we encourage CARB to continue analyzing near-term targets (the step down and 2030 targets), including consideration of the potential impacts of step-downs of greater than 9% and 2030 targets of greater than 30%. In particular, we support targets in-line with analysis by ICF, which suggests a step-down of 10.5-11.5% is appropriate, as well as 2030 targets of greater than 40%.⁴

Still, while we support even greater levels of stringency that align with the ICF analysis (and which would only support California's climate change goals), we believe the following would be an appropriate, conservative baseline approach for CARB to consider, at a minimum:

- A 9% step-down, to take effect as soon as the regulation does
- Maintain the proposed rate of annual reductions from 2025-2030 in the proposed amendments (2.25 percentage points), which on top of a 9% step down, would take stringency from 22.75% in 2025 to 34% in 2030.

¹ <https://www.arb.ca.gov/lists/com-attach/6505-lcfs2024-VDBXJFIwUXZQOQh6.pdf>

² See LCFS Dashboard, Figure 3. <https://ww2.arb.ca.gov/resources/documents/lcfs-data-dashboard>

³ See slide 45, <https://ww2.arb.ca.gov/sites/default/files/2024-04/LCFS%20April%20Workshop%20Slides.pdf>

⁴ <https://www.arb.ca.gov/lists/com-attach/7078-lcfs2024-VDVcNFlyVGsLdFQu.pdf>

We note that, under this framework, if the auto acceleration mechanism (AAM) were triggered twice by 2030, and post-2030 stringency remained as proposed (an increase of 4.5 percentage points annually), the 2030 target would reach 43%, which the ICF analysis has shown to be reasonably achievable, and would better align with the state's economy-wide greenhouse gas reduction goals.

Responses to Request for Stakeholder Feedback

We appreciate CARB requesting additional feedback on the stringency of the program and design of the AAM, and we offer the following responses to the questions posed at the workshop (slide 49).

- **Short-term vs long-term market conditions – how should staff approach the increased stringency need? Is it a onetime near-term need or do stakeholders anticipate rapid and sustained decarbonization progress through the next 10+ years?**

As identified in the ICF analysis, there remains tremendous market interest and opportunity for innovation in low carbon fuels through 2030 and beyond. Ductor, and our technology, are clear examples of this. We have a growing pipeline of projects that we hope deploy in support of California's climate change and other environmental objectives, which would bring additional volumes of low carbon fuels to the state. Completing this pipeline of projects will take years, and requires decades-long vision of reasonable market returns to support financing and project development. Other renewable fuels projects and investments identified in the Scoping Plan (e.g., carbon capture and sequestration, direct air capture, sustainable aviation fuels, etc..) are in a similar position, and likely need to see a market through at least mid-Century in order to support near-term development.

Accordingly, we encourage CARB to approach increased program stringency as an ongoing need. Each element of the proposed targets (2025, 2030, 2045) is important, and deserves thorough analysis to ensure it aligns with the Scoping Plan and the state's climate change priorities. As described above and further below, we believe this includes:

- A stronger 2025 step-down, of at least 9% and likely 10.5-11.5%
- A stronger 2030 target, of at least 34%, and likely 40+%
- A responsive AAM that is able to quickly correct program stringency if/when the market continues to overperform

We expect the 2045 target deserves further analysis, as well, but we believe the current 2045 proposal is appropriate for now. While long-term targets are important to provide an ongoing signal and vision for the program, there will be additional time to evaluate the 2045 target as part of future rulemakings.

- **Which approach can provide a smooth/sustained market signal to support deeper decarbonization in the 2030s?**

We believe a strong 2030 target is critical to ensuring a smooth and sustained mid- to long-term market signal. We urge CARB to re-evaluate 2030 targets and ensure that the stringency of the program in 2030 aligns with the State’s climate goals (i.e., a 48% economy wide reduction in greenhouse gas emissions).

If the State wants to succeed in meeting its climate change targets, it needs to plan to succeed. Setting appropriately strong targets that align with the State’s climate change goals, rather than relying on the AAM to potentially get there, is critical to achieving the outcomes identified in the Scoping Plan. This likely requires a 2030 target of at least 40%, and likely closer to the 48% economy-wide greenhouse gas reduction target.

The AAM is also an important new element of the program, and one that will support a smooth and sustained market signal in both the 2020s, and 2030s.

- **Should staff consider any changes to the trigger conditions for the AAM?**

Yes. We reiterate our previous comments and encourage CARB to include in 15-day changes adjustments to the AAM that would allow it to be more responsive to market conditions, while still retaining its conservative design. Specifically, we encourage:

- Moving the AAM forward a year, so that it reviews 2025 data and can be potentially triggered in 2026 and take effect in 2027
- Remove the restriction against applying it in consecutive years
- Lower the trigger to no more than 2-2.5x quarterly deficits, per ICF’s recommendation⁵

A responsive AAM will best support a smooth/sustained market signal and help avoid boom/bust cycles in investment that might otherwise come if AAM triggers are too slow to respond to market need and lead to long periods of low credit prices (the result of which is likely to be periods of credit price spikes, if low credit prices lead to a period of underinvestment in clean fuels production.)

Other Items for 15-Day Changes

Finally, we wish to reiterate additional comments we offered on the proposed amendments, which we hope CARB will address through 15-day changes:

- The LCFS has proven one of the most powerful programs in the world for reducing potent short-lived climate pollutants. It similarly can be applied to reduce even more potent N₂O emissions. **Tier 1 calculators, especially for organic waste, should include accounting for avoided N₂O emissions.**

⁵ <https://www.arb.ca.gov/lists/com-attach/7078-lcfs2024-VDVcNFlyVGsLdFQu.pdf>

- Protecting technology neutrality and enabling innovation is central to the success of the LCFS. **We recommend minor 15-day changes, as specified in our previous comments,⁶ to ensure new biogas pathways, including from poultry litter, are clearly supported by the regulation.**
- Avoided methane crediting and book-and-claim access for biogas projects are central to enabling biogas projects and associated emissions reductions. **We urge CARB to avoid restricting avoided methane crediting or biogas book-and-claim accounting in the program.**

Conclusion

We very much appreciate your work, and the work of other CARB staff, to engage stakeholders throughout this process. We understand the wide array of issues related to the LCFS program that are under consideration for amendments, and we appreciate your efforts to strengthen the program and advance California's climate change and related objectives.

Thank you for your consideration of these comments, and please do not hesitate to reach out with any questions.

Sincerely,

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⁶ See pp. 4-5: <https://www.arb.ca.gov/lists/com-attach/6505-lcfs2024-VDBXJFIwUXZQQQh6.pdf>