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February 20, 2024

Ms. Rajinder Sahota
Deputy Executive Officer - Climate Change & Research
California Air Resources Board
1001 I Street
Sacramento, California 95814

**Re: California Bioenergy's Comments on the Low Carbon Fuel Standard Rulemaking Package**

Dear Ms. Sahota,

Thank you for the opportunity to provide these comments to California Air Resources Board (CARB) relating to the Low Carbon Fuel Standard (LCFS) Rulemaking Package released on December 19, 2023. California Bioenergy LLC (CalBio) is appreciative of CARB's efforts over the past several years to develop the LCFS program into becoming one of the most impactful policies to support the transition from petroleum to clean fuel alternatives. There are few programs in the world which can boast the significant decarbonization of the transportation sector through sound science and policy. We write these comments with the notion that the climate emergency demands CARB strengthen the program to support achievement of California's legislatively-mandated greenhouse gas (GHG) reduction targets.

Founded in 2006, CalBio works closely with California dairy farm families, dairy co-ops and cheese producers, CARB, the California Department of Food and Agriculture (CDFA), the California Public Utility Commission (CPUC), the California Energy Commission (CEC), and the U.S. Environmental Protection Agency (EPA). We exist to reduce methane emissions and are committed to enhancing environmental sustainability for all Californians. CalBio's digester projects produce clean renewable natural gas and generate electricity, both used as a vehicle fuel to power low-emission trucks, buses, and cars thereby replacing petroleum-based fuels—diesel, gasoline, and natural gas. Our projects reduce GHGs, improve local air quality, create jobs in disadvantaged communities, and provide a new revenue stream along with other meaningful benefits to our dairy partners.

In our comments below, we suggest practical and necessary revisions which serve to improve the LCFS program in its ambition to reduce GHG emissions and implement a successful program.

1. **Addressing the Near-Term Credit Bank Surplus**
2. **Allow for Book & Claim of RNG to Off-site Electric Generators**
3. **Revise the True-Up Language to Apply to Temporary CI Scores**
4. **Establish a Temporary CI for Dairy Biogas to Electricity**
5. **Grandfather Existing Pathways Certified under GREET v3.0**

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1. **Addressing the Near-Term Credit Bank Surplus**

As of Q3 2023, the LCFS credit bank has swelled to more than 20.5 million credits, largely driven by growth in renewable diesel, electricity, and biomethane. The program has become a victim of its own success and now overcompliance threatens to stifle investment making it uneconomic to build new projects under the current market conditions. CalBio appreciates CARB's recognition of this problem by introducing both a near-term step down in the CI target in 2025 and the introduction of an Automatic Acceleration Mechanism (AAM). We believe these are fundamental concepts to bring down the LCFS credit bank surplus, however, they simply do not go far enough. Fortunately, there exists an extraordinary opportunity to increase ambition and ultimately achieve more GHG reductions by strengthening the near-term step down and enabling the AAM to begin one year earlier. Both actions will work in tandem create the near-term price signal necessary to drive investments in GHG reductions now and enable a faster, more dynamic response to changing market conditions, and help to achieve a CI reduction beyond the stated target of 30% by 2030.

The primary lever at CARB's disposal to have the most immediate impact in driving down the LCFS credit bank is to first increase the near-term step down from 5% in 2025 to at least 10%. Notably, as part of the proposed amendments, the diesel benchmark for years 2025 through 2045 has been revised from 100.45 gCO2e/MJ to 105.76 gCO2e/MJ from a 2010 base year which substantially reduces the impact of the originally proposed 5% step down in the diesel pool. For the proposed step down to be meaningful, an 10% or greater step down is required and that the increased step-down be propagated through the stringency curve translating into a revised 2030 target (e.g., a step down of 10% translates into approximately a 35% reduction in the CI in 2030 relative to 2010).

Another specific way to address the near-term credit bank surplus is to revise AAM to be triggered in 2026 based on 2025 credit bank data and increase the CI stringency target in 2027. As currently proposed, it will not kick in until 2028 based on 2026 data. However, if the proposed near-term step down, even if increased to 10%, is insufficient to draw down the credit bank, the AAM should be triggered provided the eligibility requirements are satisfied. Postponing the AAM by an additional year will undermine its ability to serve its intended purpose which is to guard against an oversupply of credits.

CalBio proposes CARB increase the 2030 CI target to at least 35%. This is one of the scenarios that CARB has been workshopping since 2022 and is the one which is expected to achieve the highest levels of GHG reductions[1]. A study from ICF found that the LCFS could accommodate a carbon intensity target of 41-44%[2]. Increasing the stringency to drive GHG reductions is in alignment with the 2022 Scoping Plan for Achieving Carbon Neutrality (2022 Scoping Plan)[3] which lays out a path to achieve targets for carbon neutrality and reduce GHG emissions by 85 percent below 1990 levels by 2045. The actions described

[1] https://ww2.arb.ca.gov/sites/default/files/2022-11/LCFSPresentation.pdf
[2] https://ww2.arb.ca.gov/form/public-comments/submissions/4306
[3] https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf

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above are necessary to give confidence to investors that new projects can be built and allow for greater GHG reductions to be achieved.

**2. Allow for Book & Claim of RNG to Off-site Electric Generators**

An important opportunity for CARB to incentivize additional GHG reductions is to expand the language in §95488.8(i)(2) to allow for the book-and-claim of pipeline-injected biomethane to be used to generate Low-CI electricity as a transportation fuel. Currently, CARB recognizes electricity as a transportation fuel in §95482(b) and moreover in §95488.8(i)(1) recognizes that "Low-CI electricity used as a transportation fuel can be indirectly supplied through a green tariff program…or other contractual electricity supply relationship." This is achieved by REC-matching, where the reporting entity must demonstrate that the low-CI electricity is supplied through book-and-claim accounting to electric vehicle charging provided "that any renewable energy certificates associated with the low-CI electricity were retired in the WREGIS for the purpose of LCFS credit generation" (see §95491(d)(3)). However, in the context of electricity derived from low-CI dairy biogas, this pathway requires the RECs to be created from a generator co-located with the digester.

Given the recognition CARB has for 1) book-and-claim of Low-CI electricity production to be matched to electric vehicles, and 2) RNG injected into the commercial distribution pipeline and withdrawn at a CNG station in California, CalBio argues that by the same logic, RNG injected and withdrawn via book-and-claim should qualify for the purposes of generating electricity. In this construct, RECs generated from an electric generator located off-site from the dairy powered by gas fed through the utility pipeline should similarly be allowed to match RECs to electric.

This approach aligns with CARB's existing book-and-claim accounting framework and greater GHG reductions could be realized by making this targeted change to the regulatory text that is in keeping with CARB's objectives of supporting the transition to zero emission transportation. As noted, this recommendation is fully aligned with CARB's goals expressed in the Initial Statement of Reasons (ISOR), page 4, which states:

> *"This regulatory update proposal, which is described in detail in this staff report, is focused on the following key concepts:*
>
> - *Increasing the stringency of the program to reduce emissions and decarbonize the transportation fuel sector, which will also aggressively reduce our dependence on fossil fuels;*
> - *Strengthening the program's equity provisions to promote investment in disadvantaged, low-income and rural communities;*
> - ***Supporting electric and hydrogen truck refueling;***
> - *Incentivizing more production of clean fuels needed in the future, such as low-carbon hydrogen;*

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- ***Supporting methane emissions reductions and deploying biomethane for best uses across transportation;*** *(emphasis added)*

Further on page 6 of the ISOR, it states:

> *"The purpose of the LCFS regulation is to reduce the carbon intensity (CI) of transportation fuels used in California, thereby reducing GHG emissions, and to* ***incentivize the production of low-carbon and renewable alternatives, such as low-CI electricity*** *and renewable hydrogen, and biofuels to displace fossil fuels and allow more energy security in the transportation sector." (emphasis added)*

Further on page 30 of the ISOR, it states:

> *"****Biomethane can play a key role in decarbonizing stationary sources*** *or other energy applications, and the 2022 Scoping Plan Update identifies additional end uses in the industrial, commercial, and residential sectors; production of hydrogen; and* ***electricity generation by displacing the need for fossil gas.****" (emphasis added)*

CARB would be remiss to lose this opportunity to encourage and incentivize low-CI dairy biomethane to be used for electricity generation. This will create an additional market for RNG derived from dairy biogas, as CARB has signaled it is seeking to phase it out of combustion in CNG vehicles and "direct biomethane to sectors that are hard to decarbonize or as a feedstock for energy."[4] Directing RNG as a feedstock to electricity production is a readily available solution and further encourages grid resiliency which will be necessary as electric vehicle charging scales in the state.

### 3. Revise the True-Up Language to Apply to Temporary CI Scores

CalBio is appreciative to CARB for proposing a credit True-Up after provisional certification and recognizing the real GHG reductions that have occurred when a project's CI score decreases. Unfortunately, this approach fails to recognize, perhaps more importantly, the true GHG reductions that should be credited once the provisional certification is achieved relative to the GHG reductions credited while operating under the -150 CI Temporary Pathway for dairy digesters. It is unclear why CARB deviated from this approach in the proposed rule, particularly when it was workshopped in 2022 during which time it proposed *only* adjusting the temporary CI score and did not contemplate adjustments for subsequent verifications.[5]

A key point raised in those workshops was the idea that a True-Up would ease the pressure for CARB to review pathways and alleviate concerns with delays in certification. Considering CARB staffing shortages

[4] https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf
[5] https://ww2.arb.ca.gov/sites/default/files/2022-08/August%202022%20Workshop%20Slide%20Deck%20Presentations.v16.pdf

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leading to pathway review times often exceeding 18 months from the time they are submitted, it would be in CARB's own interest to give itself the necessary time to review projects without unfairly discounting legitimate GHG reductions for delays outside the project's control. The Temporary CI has been conservatively set to -150 gCO2e/MJ, this can cost a project millions of dollars while waiting for a return on investment. If this issue is left unresolved, it further poses risks to future investment in projects and reduces the potential for additional GHG reduction opportunities. CARB should be taking steps to encourage development, and credit projects appropriately in the interest of fairness and reflecting true environmental performance.

4. **Establish a Temporary CI for Dairy Biogas to Electricity**

It is of great concern to CalBio that no Temporary CI exists for Dairy Biogas-to-Electricity pathways has been established in the LCFS since the program's inception and that CARB has not sought to correct for this in the proposed amendments. The failure to include this provision discriminates and disadvantages in-state dairy digester projects which contribute to California's SB 1383 goals and provide renewable electricity as a grid resource and transportation fuel. As referenced in the ISOR and quoted in CalBio's comments under topic #2 above, one of the *primary purposes* of the LCFS regulation is to incentivize the production of low-carbon and renewable alternatives, such as low-CI electricity.

CARB should correct this oversight given dairy biogas-to-electricity pathways fully reduce methane in the same manner as dairy biogas-to-RNG pathways and thus should be treated equally. Project economics for dairy biogas-to-electricity are generally more challenging than RNG projects given they are currently not eligible to participate under the RFS program or BioMAT. Failure to allow electric projects to receive a Temporary CI score further exacerbates the concerns expressed in CalBio's comments under topic #3 by preventing beneficial projects from receiving revenue until the provisional certification is achieved, a process which can last several months to years.

It should be noted that CalBio has made significant financial investments in cleaner electricity generating technologies such as Bloom Fuel Cells and Mainspring Linear Generators which convert methane into electricity without combustion. These technologies should alleviate concerns around NOx emissions associated with internal combustion engines. CalBio would be supportive of CARB unlocking the Temporary CI for dairy biogas-to-electricity if it meant requiring the use of a non-combustion technology such as a fuel cell or linear generator.

5. **Grandfather Existing Pathways Certified under GREET v3.0**

CalBio is proposing CARB consider grandfathering in pathways which have already been certified under GREET v3.0. These pathways have already undergone public review and comment period and should remain under models which they have been validated and verified through the end of their crediting

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periods. It would be administratively burdensome to deviate from the modeling that has been established for existing pathways and require unnecessary adjustments to the information CARB and 3rd party verifiers have already reviewed and approved.

CalBio commends CARB for developing the LCFS as the nation's leading and most successful example of a market-based carbon reduction program for the transportation sector. We thank you for considering these comments.

Sincerely,

Andrew Craig
Vice President, Greenhouse Gas Programs
California Bioenergy LLC