



Helping dairies fuel a renewable future

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August 27, 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 August 12, 2024 Low Carbon Fuel Standard Proposed Amendments

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) Draft Rulemaking Package released on August 12th, 2024. California Bioenergy LLC (CalBio) is appreciative of CARB's efforts over the past several years to develop the LCFS program into one of the most impactful policies to support the transition from fossil fuels to lower carbon 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 from the perspective 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 carbon-negative renewable natural gas and electricity, both used as a vehicle fuel to power low-emission trucks, buses, and cars.

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. Establish a Temporary CI for Dairy Biogas to Electricity

It is of great concern to CalBio that no Temporary CI 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. CalBio presents below, a simple update to *Table 8 – Temporary Pathways for Fuels with Indeterminate CIs* which is to include an electric pathway with the same -150 CI score allowed for Dairy Biogas-to-RNG pathways:



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Table 8. Temporary Pathways for Fuels with Indeterminate CIs

<i>Fuel</i>	<i>Feedstock</i>	<i>Process Energy</i>	<i>CI (gCO₂e/MJ)</i>
Electricity	Dairy Manure and Swine Manure	Grid electricity/solar and wind electricity, natural gas, and/or parasitic load	-150

CARB should correct this oversight given dairy biogas-to-electricity pathways fully reduce methane in the same manner as dairy biogas-to-RNG pathways which should be recognized. Project economics for dairy biogas-to-electricity are more challenging than RNG projects given they are currently not eligible to participate under the EPA's Renewable Fuel Standard program nor participate in the LCFS and BioMAT simultaneously. Providing a temporary pathway for dairy biogas-to-electricity is even more important now as California ramps up its transition to electrifying transportation. Doing so requires recognizing and supporting all strategies that support the unprecedented increase in electricity generation and related infrastructure that will be required.

CalBio is appreciative and commends CARB for proposing a credit True-Up back to the temporary CI, recognizing the actual GHG reductions that have occurred when a project's provisional CI score is certified. Unfortunately, with no temporary CI available for Dairy Biogas-to-Electricity, these projects are ineligible to be retroactively credited and are thus further disadvantaged. They are also exempt from the Tier 1 pathway approach since no Tier 1 GREET model was developed for electric projects as suggested by CalBio in an earlier comment letter.¹ This means they are subject to approximately two years of review time and therefore two years without credit generation.

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.

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

¹ [CalBio Comments 2-20-2024](#)



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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 vehicles.

Please consider including the following edits in bold and underline to the draft LCFS regulation:

Section §95488.8(i)(2):

(2) *Book-and-Claim Accounting for Pipeline-Injected Biomethane Used as a Transportation Fuel or to Produce Hydrogen or to Generate Electricity*. Indirect accounting may be used for RNG used as a transportation fuel or to produce hydrogen or to generate electricity for transportation purposes (including hydrogen that is used in the production of a transportation fuel), provided the conditions set forth below are met:

(A) RNG injected into the common carrier pipeline in North America (and thus comingled with fossil natural gas) can be reported as dispensed as bio-CNG, bio-LNG, or bio-L-CNG, or as an input to hydrogen production or to electricity production, without regards to physical traceability. Entities may report natural gas as RNG within only a three-quarter time span. If a quantity of RNG (and all associated environmental attributes, including a beneficial CI) is pipeline-injected in the first calendar quarter, the quantity claimed for LCFS reporting must be matched to natural gas sold in California as RNG no later than the end of the third calendar quarter. After that period is over, any unmatched RNG quantities expire for the purpose of LCFS reporting.

...

(C) To substantiate RNG quantities injected into the pipeline for dispensing as bio-CNG, bio-LNG, or bio-L-CNG or as an input to hydrogen production or to electricity production, the pathway application and subsequent Annual Fuel Pathway Reports must include the following documents linking the environmental attributes of RNG (in MMBtu or Therms) with corresponding quantities of natural gas withdrawn:

1. Unredacted monthly invoices showing the quantities of RNG (in MMBtu) sourced and the contracted price per unit;
2. Unredacted contract by which the fuel pathway holder obtained the environmental attributes.



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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), which seeks to ensure the LCFS program incentivizes “the production of low-carbon and renewable alternatives, such as low-CI electricity” and acknowledges that “biomethane can play a key role in decarbonizing stationary sources” and additional end uses such as electricity generation can displace the need for fossil gas.

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.”² 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. Restore Avoided Methane Crediting Periods

In the latest staff proposal, CARB has reduced the crediting period from three 10-year crediting periods to only two. This is problematic for several reasons:

- **Increased Financial Uncertainty and Risk:** Methane reduction projects involving dairy manure management require significant upfront investment. Reducing the crediting periods decreases the expected financial return when these investments were made. This change in policy not only moves the goalposts on projects that have already committed capital, but it also creates significant increased financial uncertainty in any future investments in the program. This ultimately slows progress in methane emission reductions, undermines confidence in the regulatory framework, and discourages long-term investments in all renewable fuels.
- **Discouraging Technological Innovation:** Longer crediting periods provide more time for projects to adapt and incorporate new technologies that can enhance methane reduction. CARB has signaled a need to move dairy RNG towards other sectors such as electricity generation and hydrogen production. A shorter period limits the ability of project developers to invest in and deploy innovative technologies that require a longer horizon to become cost-effective.
- **Potential Negative Impact on Small-Scale Projects:** Smaller projects, which may have less access to capital, could be disproportionately affected by the reduction in crediting periods. These projects often rely heavily on the revenue generated from credits to remain financially viable. Reducing the crediting period reduces the potential for smaller projects to be built.

² <https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf>



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CalBio asks that the crediting periods be restored, recognizing it sets a bad precedent for projects seeking to capture and eliminate fugitive methane sources. Investments have already been made in recent years with the expectation that three crediting periods were available in the program. CARB should grandfather these projects by including a statement in Section 95488.9(f)(3)(A) clarifying that “Projects which have been certified prior to January 1, 2028 shall remain eligible for three 10-year crediting periods.” Failing to address this establishes a negative precedent not only in the LCFS program, but also for future carbon programs that have yet to be established by other states and countries.

4. Preservation of the 9% CI stringency stepdown in 2025

In the latest draft LCS amendments, CARB is proposing a 9% stepdown in CI stringency beginning in 2025. In the interest of moving swiftly to a final rule that can be implemented, CalBio supports this stepdown. However, CARB should consider retaining the annual rate of CI reductions through to 2030 and beyond. By holding the CI reduction target to 30% CARB has made a shallower slope for year-over-year reductions by 2030. Instead, maintaining the slope already established in the proposal would result in a CI reduction target of ~34% by 2030, would create a path for greater emission reductions, reduce the uncertainty of whether the Automatic Accelerator Mechanism will kick in, and result in greater investment in renewable fuels.

CalBio thanks CARB for the opportunity to comment on the LCFS regulations and we look forward to further dialogue on these topics.

Sincerely,

Andrew Craig
Vice President, Greenhouse Gas Programs
California Bioenergy LLC