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Helping dairies fuel a renewable future
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December 27, 2023

California Air Resources Board
Low Carbon Fuel Standard
1001 I Street
Sacramento, CA 95814

Re: Bar 20 Biogas LLC Tier 2 Pathway Application No. B0490; Response to Leadership Counsel for Justice & Accountability, Central Valley Defenders of Clean Water & Air, Animal Legal Defense Fund, Center for Food Safety, and Food & Water Watch

California Bioenergy LLC ("CalBio") writes on behalf of Bar 20 Biogas LLC ("the project") to provide responses to the comments received in a letter dated December 15, 2023 regarding the Tier 2 Pathway Application (No. B0490) for low-CI electricity from dairy manure biogas using a Solid Oxide Fuel Cell generator at Bar 20 Dairy in Kerman, CA for use as a transportation fuel in California. CalBio is responding within the scope of the Low Carbon Fuel Standard ("LCFS") program per § 95488.7(d)(5)(A), which requires responses to comments "related to potential factual or methodological errors."

CalBio appreciates the comments and is committed to full and accurate accounting of life cycle emissions associated with the pathway application. CalBio commends the California Air Resources Board ("CARB") in its development of the world-leading LCFS program and Simplified CI Calculator for Biomethane from Anaerobic Digestion of Dairy and Swine Manure ("CI Calculator"). The CI Calculator has been vetted through public processes to ensure greenhouse gas ("GHG") emission reductions are achieved beyond a business-as-usual baseline.

The coalition of groups ("Commenters") who submitted comments contend that the application should be rejected as summarized below. As part of the comment submission, the Commenters reference a petition that was filed with CARB requesting all fuels from dairy biomethane be excluded. To this, CalBio provides CARB's response which was to deny the petition.[1]

As to the other statements made by the Commenters, CalBio does not believe any of these claims to be accurate and our responses are outlined below. The project—a first-of-its-kind dairy digester to fuel cell project—has been developed entirely within the framework established by CARB to develop low carbon fuels in the transportation sector. In addition to reducing GHGs, this project generates ultra-clean renewable electricity that displaces use of

[1] https://ww2.arb.ca.gov/sites/default/files/2022-04/LCFS%20Reconsideration%20Petition%20Response.pdf

fossil-based fuels, improves local air quality, and creates local job opportunities on family-owned farms.

(1) LCFS System Boundary

The Commenters argue "the application incorporates an unlawfully truncated system boundary that ignores feedstock production at the Bar 20 Dairy in Kerman, CA and other emissions such as those from storage and disposal of digestate, resulting in artificially low Carbon Intensity (CI) values and inflated credit generation."

This statement is incorrect. The project's pathway application utilizes the exact methodology and calculators designed for use under the LCFS regulation. The lifecycle analysis for this pathway application was conducted using a modified version of the Board-approved Tier 1 Simplified CI Calculator for Biomethane from Anaerobic Digestion of Dairy and Swine Manure, which is incorporated by reference in the LCFS regulation, § 95488.3(b). As noted in the CARB Staff Summary, "the modified calculator has been determined to be equivalent to CA-GREET3.0 pursuant to § 95488.7(a)(1) of the LCFS regulation."

The purpose of the LCFS pathway application is to calculate the methane emissions that would have occurred in the absence of the digester project. The lifecycle emissions are calculated in part using the GHG assessment boundary defined in Chapter 4 of the Compliance Livestock Offset Protocol ("LOP"), which delineates the Sinks, Sources, and Reservoirs ("SSRs") that must be included or excluded when quantifying the net change in emissions associated with the installation and operation of a dairy digester. The lifecycle analysis includes an assessment of the baseline manure management practices at the dairy and because methane emissions from dairy operations are not regulated, reductions from this facility exceed regulatory requirements and are therefore additional.

(2) Additionality of Methane Reductions

The Commenters believe CARB did not consider the additionality requirements of Health and Safety Code § 38562, which requires the state to adopt GHG emissions limits and emissions reduction measures by regulation to achieve the maximum technologically feasible and cost-effective reductions in GHG emissions in furtherance of achieving the statewide GHG emissions limit.[2]

According to CARB's response to the petition, the Health and Safety Code § 38562 does not apply to the LCFS.[3] Also, as discussed above, crediting for the voluntary capture of methane is limited to the methane that would have otherwise been vented to the atmosphere in the absence of such a project. The lifecycle analysis prepared using the CA-GREET3.0 and reviewed by CARB and an independent third-party verifier confirms that real, quantifiable, permanent, and additional emission reductions have occurred.

[2] https://codes.findlaw.com/ca/health-and-safety-code/hsc-sect-38562.html
[3] https://ww2.arb.ca.gov/sites/default/files/2022-04/LCFS%20Reconsideration%20Petition%20Response.pdf

The Commenters also state that the California Department of Food and Agriculture (CDFA) has "already claimed" the methane emission reductions from this digester and that they would have occurred without the LCFS program. This statement is incorrect. The project received funding through CDFA's Dairy Digester Development and Research Program (DDRDP) which provides financial assistance for the installation of dairy digesters in California, resulting in reduced greenhouse gas emissions. The DDRDP grant program[4] was established to help encourage the development of dairy digesters given the urgency of mitigating short-lived climate pollutants such as methane. The DDRDP funding is insufficient to cover the full cost of installing a digester and the LCFS is a necessary source of revenue to ensure the long-term viability of the project. The DDRDP and LCFS are complementary programs and together they have been extremely successful in helping the state achieve its methane reduction goals.[5][6] Lastly, participation in one program does not preclude a project from participating in the other and the emission reductions are accurately accounted for once in the state's GHG Inventory.[7]

(3) Incentivizing Methane Production

The Commenters speculate that the LCFS program incentivizes expansion and consolidation of dairies but fail to recognize that dairy industry consolidation is a trend that has been occurring for decades, not only in California, but all over the country.[8] Furthermore, the project is a separate entity from the dairy operation, which exists to produce widely consumed goods such as milk, butter, yogurt, ice cream, etc., where herds are managed based in response for demand for their products, not for biogas production. The Commenters also point out differences between the permitted herd numbers and CARB's staff summary and speculate that there are two dairies, however as mentioned in the LCA, there is only one remaining dairy. The farm retains the permits from the old dairy facility which has since shut down and there are no current plans to expand. CalBio has provided highly detailed herd information to CARB as part of the application.

(4) Pathway Application Transparency

The Commenters assert that the application is overly redacted and that it is "impossible" to verify the approximate livestock population. The information provided in the LCA document and site-specific inputs includes highly detailed descriptions of how the project is designed and operates. The information being redacted is considered to be confidential business information. Furthermore, all site-specific CI data for the fuel pathway application underwent verification by an independent third-party verifier in accordance with § 95500 of the LCFS regulation.

(5) Discriminatory Impact

[4] https://www.cdfa.ca.gov/oefi/ddrdp/docs/2022_DDRDP_Legislative_Report.pdf
[5] https://ww2.arb.ca.gov/sites/default/files/2022-03/final-dairy-livestock-SB1383-analysis.pdf
[6] https://clear.ucdavis.edu/sites/g/files/dgvnsk7876/files/inline-files/Meeting-the-Call-California-Pathway-to-Methane-Reduction_0.pdf
[7] https://ww2.arb.ca.gov/sites/default/files/2023-12/2000_2021_ghg_inventory_trends.pdf
[8] https://clear.ucdavis.edu/sites/g/files/dgvnsk7876/files/inline-files/Meeting-the-Call-California-Pathway-to-Methane-Reduction_0.pdf

The Commenters state that certification of this pathway would result in a discriminatory impact in conflict with CARB's obligations under California Government Code 11135, and Title VI of the Civil Rights Action, as well as undermine the Sustainable Groundwater Management Act (SGMA) and violate Article X, section 2 of the California Constitution. CalBio is not in a position to respond to these claims as they are not relevant to the GHG lifecycle assessment of the project.

It should be noted, however, that as part of the development of our projects, CalBio engaged with environmental justice groups as well as held public meetings where we shared information about the projects we were building to members of the local community. Overall, members of the community were supportive of the technology and development our projects bring to the central valley. Investment in digesters create well-paying, meaningful jobs to priority populations in the central valley. Additionally, digesters provide significant air quality benefits and improved wastewater management to those communities. By displacing fossil fuel consumption and combustion, this projects not only reduces methane but also substantially reduces air pollutant emissions such as H2S, NOx, PM2.5, and PM10.[9]

Furthermore, the double-lined covered lagoon digester installed in this project, which was permitted by the Regional Water Board, helps dairies protect groundwater resources in several ways, including through implementation of best practices for leak detection and monitoring and leachate collection and removal.

(6) CI Value and Fuel Cell Technology

The Commenters challenge the integrity of the CI value achieved by this project and contend that the resulting credits enable further deficit generation. As described above, the number of LCFS credits generated by this project is calculated using a lifecycle approach and occurs when the renewable electricity is used in an electric vehicle as a substitute for fossil-based vehicle fuel. A pathway with a more negative CI value does not necessarily mean it is more "lucrative" than a pathway with a higher CI. Please refer to § 95486.1 of the LCFS regulation for how credits and deficits are calculated. As a producer of renewable fuels, CalBio supports the transition away from fossil fuels and further action by CARB to increase its CI reduction targets in the LCFS program.

The Commenters also refer to the fuel cell producing "zero carbon emissions." CalBio specifies the technology-specific emission factors for the fuel cell used in the fuel pathway in the List of Site-Specific Inputs, which demonstrates that the pathway does not assume that the fuel cell produces zero carbon emissions. In fact, even though the CO_2 that is emitted from the project is biogenic, the fuel pathway CI conservatively includes CO_2 emissions assuming a CO_2 emission factor derived by the U.S. Environmental Protection Agency for the stationary combustion of natural gas. When paired with carbon negative dairy biogas as a fuel, and recognizing the avoidance of methane emissions that would have occurred in the absence of the project, the net effect is negative CI electricity. This is a much less carbon intensive source of renewable electricity when compared to solar or wind because the LCFS directly incentivizes the capture

[9] https://ww2.arb.ca.gov/sites/default/files/2020-07/dairy-emissions-matrix-113018.pdf

and utilization of methane that would otherwise be emitted. The commenters also state that the fuel cell was used with "fossil gas" at other projects but this is not true. CalBio has however developed more projects that generate electricity from dairy biogas.

In addition, the Commenters reference a past Consent Agreement and Final Order with EPA involving disposal of waste generated from Bloom Energy Servers. The Commenters also reference Bloom's stance on biogas in connection with two unrelated projects. CalBio is not in a position to respond to these claims as they are not relevant to the GHG lifecycle assessment of the project, however, we recognize that Bloom Energy is a strong supporter of on-site biogas to electricity which is clearly evidenced in their public comments submitted to CARB under the current LCFS rulemaking[10] and to the EPA's proposed SET rule[1112] that was released in December 2022.

CalBio is appreciative of the opportunity to respond to these comments, discuss the details of our pathway application, and support the integrity of the LCFS program. We are confident our application fully complies with the requirements of the LCFS program and respectfully request CARB proceed with the certification of the pathway. CalBio is prepared to respond to any further input or inquiry from CARB should it be necessary.

Sincerely,

Andrew Craig
Vice President, Greenhouse Gas Programs
California Bioenergy LLC

[10] https://www.arb.ca.gov/lists/com-attach/147-lcfs-wkshp-feb23-ws-AGMBaFwwBTsLaAVr.pdf
[11] https://www.regulations.gov/comment/EPA-HQ-OAR-2021-0427-0442
[12] https://www.regulations.gov/comment/EPA-HQ-OAR-2021-0427-0701