CALIFORNIA BIOENERGY
Helping dairies fuel a renewable future
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June 14th, 2023

Ms. Cheryl Laskowski
Branch Chief, Low Carbon Fuel Standard Team
California Air Resources Board

Submitted via LCFS Comments Upload Link

RE: CalBio Comments on CARB's May 31 and June 1, 2023 Low Carbon Fuel Standard Virtual Community Meetings

Dear Ms. Laskowski:

Thank you for the opportunity to provide comments to the California Air Resources Board (CARB) on the recent community workshop meetings held on May 31 and June 1, 2023 to solicit feedback from the community on the future of the Low Carbon Fuels Standard (LCFS) program. CalBio is deeply committed to the health of the communities in which we operate. We write these comments encouraging CARB to more fully recognize the achievements of the LCFS program in its proceedings. As over a decade of experience and evidence attest, the LCFS has been one of the most impactful policies supporting the transition from petroleum to clean fuel alternatives--There are few programs in today's environment where there is such broad consensus on science and policy. The urgency of climate change demands that we take full advantage of the opportunity to strengthen the program to support achievement of California's legislatively mandated greenhouse gas reduction targets.

California Bioenergy LLC (CalBio) is a leading developer of dairy digester projects. 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). It develops projects that meet or exceed all environmental requirements delivering benefits including reducing greenhouse gas (GHG) emissions, improving local air quality, reducing odors, protecting water quality, and creating local jobs. It produces clean renewable natural gas and generates 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.

The LCFS Program is Working – Methane Reductions are Significant and Consistent with the Goals of the 2022 Scoping Plan

CalBio is currently operating over 50 dairy digesters projects in California, built in partnership with family-owned dairies, which are preventing over 1 million tons of CO2e from being emitted into the atmosphere each year. This is a remarkable achievement which has been made possible through an effective blend of state grant funding (CDFA, CPUC), the Federal Renewable Fuel Standard (RFS), and CARB's LCFS program.

The role of the LCFS program has been essential in helping to achieve these reductions. By encouraging the use of low-carbon fuels, the LCFS program has played a vital role in helping California achieve the targets laid out in the 2017 Scoping Plan1 of a 40% reduction in greenhouse gases relative to 1990 levels by 2030. The 2022 Scoping Plan2 released last December seeks to build upon this success and set California on a path of achieving a more stringent 2030 target (i.e., 48% below 1990 emissions) as well as carbon neutrality no later than 2045.

Methane reduction from dairy digesters is one of the ways the LCFS program contributes to achieving the state's ambitious greenhouse gas reduction targets. Dairy digesters are systems that capture methane emissions from dairy cow manure management. By harnessing this technology, methane emissions, which are potent greenhouse gases, can be significantly reduced. The LCFS program recognizes the carbon intensity reduction achieved by utilizing biomethane from dairy digesters.

Overall, the LCFS program has been working as intended, stimulating project investments and resulting in significant emission reductions. In order to achieve the additional reductions needed by the state to achieve its 2030 reduction target as well as carbon neutrality by 2045, a similar blend of incentives must remain in place. If CARB sets an appropriate CI reduction target for 2030 on the order of 35% (including a significant step down of 5% or more in 2024), and continues to appropriately recognize avoided methane crediting for dairy digesters, CalBio can help California achieve 2 to 3 million more metric tons of CO2 equivalent reductions over the next five to seven years thereby supporting the methane reductions called for under SB 1383 and sending a clear and consistent signal to project developers that California is committed to high quality dairy digester projects that will deliver benefits for decades.

During the community workshops, there were several calls to eliminate avoided methane crediting for dairy digester projects under the baseless characterization that the state-of-the-art projects being built in response to the LCFS are adversely impacting communities. As you know, the data, studies, independent reports consistently conclude that these dairy digesters are delivering numerous benefits to the state and to communities. Thus, it is critical that CARB retains its adherence to the scientific principles upon which the LCFS is built and respond to false claims concerning these projects. Discontinuing the recognition of avoided methane emissions would undo over a decade of policy direction from CARB and undermine the ability of the state to achieve the goals of the Scoping Plan. Furthermore, it would jeopardize the ability for dairies with digesters to remain operational, likely shutting down projects, reversing the methane reduction accomplishments of California and catalyzing leakage (i.e. the exodus of dairy farms from California to other states with an increase in dairy product imports). It will also stifle future investments in projects needed for the state to meet its greenhouse gas reduction targets as well as the ability to partner with the agricultural community in the most economically challenged region in the state.

Digesters Significantly Improve Local Air Quality in the Areas it is Most Needed

In addition to the significant climate benefits dairy digesters have been able to achieve since the inception of the LCFS program, it is important to consider the local impact of digesters. Despite claims to the contrary, digesters create significant improvements to the local air quality by capturing and removing hydrogen sulfide (H2S). Without a digester, in the open lagoon system, H2S oxidizes in the atmosphere to sulfur oxides (SOx), which further convert to sulfate particulate matter. Digester projects capture and eliminate the H2S allowing for immediate and meaningful improvement in local air quality as well as significant improvements in odor management.

CalBio is operating 50+ digesters in California which are capturing the manure from roughly the equivalent of 185,000 milk cows. CalBio's third-party consultant, with expertise in transportation-related emissions, estimates that the currently active projects reduce over 176.5 tons of H2S emissions per year. Accounting for PM2.5 formation from H2S, these projects reduce PM2.5 emissions by over 333.5 tons per year. This is equivalent to almost **3.8 million passenger cars equivalent emissions** (based on the average "LDA" PM2.5 emissions rate per CARB's EMFAC

[1] https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf
[2] https://ww2.arb.ca.gov/sites/default/files/2023-04/2022-sp.pdf

2022 emissions model[3]). To place this in context, reductions from currently active projects are approximately equal to half of all San Joaquin Valley on-road (light, medium, and heavy-duty vehicles) PM2.5 emissions.

CalBio's goal is to double the number of digester projects, approximately doubling the annual air quality benefits to over 667 tons per year of secondary PM2.5 reductions. Importantly, these PM2.5 reductions are not spread throughout the state or even the San Joaquin Valley, but are concentrated in the areas around the dairies providing significant air quality improvements in these communities.

In addition, H2S is largely responsible for the odor associated with animal manure. The near complete elimination of H2S by the digester project results in a commensurate reduction in odor. Similar to H2S reductions, the biomethane captured by the digester projects is used in heavy duty trucks and buses decreasing NOx emissions relative to diesel fleets. The San Joaquin Valley's role as a major freight corridor via the I-5 and CA-99 means that statewide heavy-duty vehicle emissions benefits are likely to occur in significant part within the region.

These reductions and the assumptions behind them are documented in a methodology document that was required and submitted to CDFA with grant applications submitted under the DDRDP4. Also as part of the grant application process, CalBio set up outreach meetings to partner with the community including responding to any questions raised. We are also active members of our communities providing significant scholarship and housing funding all focused on disadvantaged populations. We have received support from numerous local residents encouraging us to invest in the community and build more digester projects.

Digesters Support the Local Economy

The dairy industry and digester projects are a vital source of jobs in disadvantaged communities. CalBio provides well-paying jobs and benefits to a growing team with a remarkable range of education and backgrounds. Many of CalBio's employees have come out of the oil fields. Many never attended college. Many live in disadvantaged communities. The LCFS program has had a direct impact on the livelihoods of the CalBio team and the communities in which they reside. Much of what attracts individuals to join CalBio is the ability to work on projects that benefit the planet. We are proud of the work we are doing and to be able to say our small company, which focuses on building partnerships with family farms, is having a beneficial impact on the climate.

CalBio commends CARB for developing the LCFS as the nation's leading and most successful example of a market-based carbon reduction regulation for the transportation sector. We strongly encourage CARB to ensure the program continues to support further investment in dairy digesters which are delivering significant near-term, in-state GHG emission reductions, improvements in local air quality, and projects which create renewable energy jobs in communities where they are most needed. Thank you for considering our comments.

Sincerely,

Andrew Craig
Vice President, Greenhouse Gas Programs
California Bioenergy LLC

[3] https://arb.ca.gov/emfac/
[4] https://www.cdfa.ca.gov/oefi/ddrdp/