



December 21, 2022

Sent Via Electronic Mail and Submitted via CARB’s Online Comment Submittal Form

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Re: Comments in Response to November 9, 2022 Low Carbon Fuel Standard Workshop

Dear Ms. Laskowski and Mr. Botill:

The undersigned organizations submit these comments to urge CARB to amend the Low Carbon Fuel Standard to remove fuels derived from dairy and swine manure (“factory farm gas fuels”) from the LCFS for the reasons outlined below. In the alternative, we urge CARB to (1) amend the LCFS to correct for the gross distortions created by avoided methane crediting and an improperly narrow well-to-wheel system boundary for the fuels’ life cycle assessment; (2) prevent non-additional credits from methane reductions achieved through other programs and funding mechanisms; and (3) ensure that the LCFS does not inflict racially disparate impacts from pollution caused by CARB’s policies that monetize factory farm gas fuels and incentivize manure generation or otherwise prolong or exacerbate pollution in lower income or environmentally burdened communities.

We have significant concerns with two proposals CARB staff raised during the November 9, 2022 workshop. First, CARB staff discussed maintaining CARB’s practice of crediting alleged methane avoidance as methane reductions indefinitely or waiting until 2040 to phase out that harmful policy. Second, CARB staff discussed a fundamental policy shift whereby the LCFS would become a financial mechanism to support and increase biomethane infrastructure with the

goal of supporting the biomethane industry and ensuring its viability for use in the future as a hydrogen feedstock and as fuel to replace fossil gas in certain sectors.

We also reiterate the policy reforms set forth in the Petition for Rulemaking and Petition for Reconsideration (“Petitions”),¹ which CARB staff have excluded from LCFS workshops to date.

The LCFS must not support or promote practices that exacerbate or extend pollution in environmentally burdened communities, lower income communities, or communities of color; it must support a swift and effective transition away from gasoline; and it must actually and effectively reduce the carbon intensity of transportation fuels. For these reasons, CARB must immediately amend the LCFS to change its treatment of factory farm gas fuels.

I. The Problem: The LCFS has over-produced and over-valued credits derived from factory farm gas fuels.

Currently the LCFS inflates the number of credits generated by factory farm gas fuel producers by valuing that gas as carbon negative and rewarding credits for non-additional reductions. The massive amounts of credits generated² have nothing to do with the characteristics of the gas itself but rather are predicated on the following policy decisions: (1) not regulating methane emissions from dairy and swine operations; (2) assuming that methane captured from manure lagoons is avoided, naturally occurring methane rather than intentionally created methane; (3) excluding GHG emissions upstream and downstream of the anaerobic digester when determining the carbon intensity of factory farm gas fuels; and (4) allowing biomethane producers to generate credits from plainly non-additional reductions. CARB’s policy decisions have resulted in significant market distortions, both in the LCFS and agricultural markets. CARB staff acknowledged during the workshop that the biomethane RNG market was “saturated” and that there are currently eleven million banked LCFS credits.

II. CARB should amend the LCFS to immediately eliminate “avoided methane crediting.”

The LCFS currently calculates a significant negative carbon intensity based on CARB’s interpretation that biogas systems result in “avoided methane” reductions. This interpretation relies on the faulty assumptions that dairy and swine operations must liquefy manure and store the liquid manure anaerobically in giant lagoons and, but for anaerobic digesters, the methane from the lagoons would offgas into the atmosphere. CARB staff suggested during the workshop that CARB might phase out the “avoided methane crediting” policy by 2040.

CARB must not wait eighteen years to phase out avoided methane crediting. Rather, CARB should amend the LCFS to immediately and fully cease treating methane reductions as avoided methane. This shift would acknowledge the reality on the ground and reduce the excessive amount of credits being generated from irrational negative carbon intensity scores.

¹ Ex. 1, Petition for Rulemaking; Ex. 2, Petition for Reconsideration.

² For the year 2021, credits from factory farm gas fuels represented over 10% of total credits sold into the LCFS market. See CARB, 2021 LCFS Reporting Tool (LRT) Quarterly Data Summary Report No. 4 (April 2022), <https://ww2.arb.ca.gov/resources/documents/low-carbon-fuel-standard-reporting-tool-quarterly-summaries>.

Large scale dairy and swine operators have *chosen* to manage manure by concentrating and confining animals and storing manure in liquid form. Operating liquid manure management systems thus intentionally creates methane.³ The alternative approach to manure management such as pasture-based systems and dry manure handling are examples of operations that do not liquefy manure and show that liquefied manure anaerobically stored in lagoons is not an inevitable, naturally occurring condition. Thus, CARB should interpret the greenhouse gases generated at these facilities as intentionally produced emissions, not claimed as “abated” to secure lucrative, negative carbon intensity values.

III. CARB’s proposal to invest in biomethane to support its transition to other uses is not in line with the purpose of the LCFS and will exacerbate harms discussed throughout these comments.

The goal of the LCFS program is to lower the carbon intensity of transportation fuels. In addition to our recommendation that CARB remove factory farm gas fuels from the LCFS for the reasons stated in Petitions and these and various other comments, we ask that CARB reject the proposal to use the LCFS program to ensure the long-term viability of factory farm gas fuels to support their deployment for future uses beyond the transportation sector.

CARB staff acknowledged during the November 9th workshop that CARB, as a matter of policy, wants to shift factory farm gas fuels out of the transportation fuel sector and into use as a non-transportation hydrogen feedstock and for fuel for sectors beyond transportation. CARB staff described using continued crediting of factory farm gas fuels in the LCFS as a financial mechanism to incentivize more biomethane infrastructure and to avoid stranded assets as it pursues that shift.

At the same time that the RNG market is “saturated” and there are eleven million banked credits, CARB is proposing to *continue* and *prolong* the use of the LCFS and the excessive credits derived from factory farm gas fuels to finance biomethane infrastructure for non-transportation uses and to provide investment certainty for those benefiting from the financial windfall. CARB should not use a market-based mechanism, the purpose of which is to reduce carbon intensity in fuels, as a financing mechanism for other climate priorities. The LCFS should not become a machine that makes money to support CARB’s policy priorities outside the scope of the program, regardless of their merit. In this case, there is no merit to doubling down on misguided investments that promote production of manure-derived biogas and, in doing so, undermine our climate and equity goals.

³ See Emily Grubert, *At Scale, renewable natural gas systems could be climate intensive: the influence of methane feedstock and leakage rates*, 15 ENVTL. RES. LETTERS (Aug. 2020) (“This analysis shows that 1) RNG from intentionally produced methane, even from climate-neutral CO2 sources, has substantial climate impacts at methane leakage levels observed in the existing, mature biogas industry; (2) for any meaningful system scale, RNG is likely to be derived from intentionally produced methane; and (3) even RNG from waste methane can have negative climate impacts relative to the most likely alternative of flaring, not venting, the methane when leakage from RNG production and use exceeds flaring loss rates.” (Internal citations omitted)).

IV. CARB should revise the well-to-wheel assessment for factory farm gas fuels.

There was no discussion from CARB staff at the November 9th workshop regarding the flawed system boundary of factory farm gas fuels. CARB should amend the LCFS to adjust the system boundary for factory farm gas fuels to include all lifecycle / well-to-wheel emissions so that carbon intensities reflect these fuels' true climate impact, just as CARB does for other participating fuels. The well-to-wheel system boundary, and thus an assessment of emissions, must include manure feedstock production (cattle feed, enteric emissions, dairy operational emissions, etc.) and the storage and disposal of digestate including emissions associated with land application of digestate and composting of digestate solids. The failure to include complete and accurate lifecycle / well-to-wheel emissions accounting compounds the problems identified with avoided methane crediting, resulting in even more substantially artificially low carbon intensity values. A fuel pathway analysis must take into account “feedstock production” and “waste generation, treatment and disposal.”⁴ Recent research indicates that emissions from factory farm gas fuels production are significantly higher than currently appreciated, with especially high emissions from digestate storage.⁵ This recent study did not consider additional emissions from digestate handling and application, which is another potentially large source of emissions resulting from factory farm gas fuels production that must be included in the pathway analysis.⁶

V. CARB should amend the LCFS to ensure additionality.

Similarly, there was no discussion at the November 9th workshop as to how CARB would amend the LCFS to correct the program's current failure to ensure the additionality of credits from factory farm gas fuels, as required by Health and Safety Code § 38562(d)(2).⁷ The majority of digesters that generate credits in the LCFS have received funding from at least one, if not multiple state programs, including the California Climate Investments-funded Dairy Digester Research and Development Program, the SB 1383 biomethane pilot project administered by the CPUC, and the Aliso Canyon Mitigation Agreement. Those programs claim the GHG reductions from digester projects and provide the financial support such that the reductions are required by law and/or otherwise would have occurred but for the LCFS incentive. Accordingly, credits derived from the vast majority of projects participating in the LCFS are patently not additional. Nevertheless, CARB awards credits for these projects in open violation of section 38562(d)(2) when the LCFS plainly meets the definition of a market-based compliance mechanism in Health & Safety Code § 38505(k). CARB should amend the LCFS to prevent non-additional credits from factory farm gas fuels.

⁴ Cal. Code Regs. Tit. 17 §§ 95481(a)(66), 95488.7(a)(2)(B).

⁵ Semra Bakkaloglu et al., *Methane Emissions Along Biomethane and Biogas Supply Chains Are Underestimated*, 5 ONE EARTH 724–736 (June 17, 2022), <https://www.sciencedirect.com/science/article/pii/S2590332222002676>.

⁶ *Id.* at 728; Michael A. Holly et al., *Greenhouse Gas and Ammonia Emissions from Digested and Separated Dairy Manure During Storage and After Land Application*, 239 AGRIC. ECOSYSTEMS & ENV'T 410, 418 (Feb. 15, 2017), <https://doi.org/10.1016/j.agee.2017.02.007>.

⁷ See Ex. 1, Petition for Rulemaking, section III.A.2; Ex. 2, Petition for Reconsideration, section III.A.3.

VI. CARB should amend the LCFS to honor its commitment to environmental justice and to ensure that its policies and programs do not inflict racial discrimination.

CARB has a legal duty under both California and federal law to ensure that its policies and programs do not discriminate on the basis of race, color, or national origin. *See* Gov. Code § 11135; 42 U.S.C. § 2000d. As described in the Petitions, large dairy and swine operations in California and throughout the country produce significant air and water pollution. Low-income communities and communities of color in the San Joaquin Valley bear a disproportionate share of these impacts in California, ranging from ozone pollution to PM2.5 pollution to nitrate contamination of drinking water. Large, industrial dairy operations in the San Joaquin Valley are disproportionately located near low-income and communities of color, especially Latino communities.⁸

CARB's policies described above, that generously award excessive credits and non-additional credits, create a strong incentive to produce more manure and thus more pollution in these communities. Now, CARB announces that it will continue to use the LCFS as a financing tool to further build out biomethane infrastructure to provide factory farm gas as a hydrogen feedstock and for fuel in hard-to-decarbonize sectors.

CARB must ensure that its policies and programs do not cause racially disparate impacts. As described in the Petition for Reconsideration, we are already seeing instances of dairies with factory farm gas systems expanding their herds, regardless of what state-wide herd size data trends show.⁹ Accordingly, we call on CARB to exclude factory farm gas fuels from the LCFS or, in the alternative, correct the gross negative carbon intensity values and ensure non-additional reductions do not generate LCFS credits.

We are especially concerned that CARB's proposal to phase-out avoided methane crediting by 2040, rather than immediately, will create a rush of large dairies and swine operations along with fuel producers seeking to lock in lucrative LCFS credits.

CARB must acknowledge its duty to protect civil rights and ensure that the LCFS, through the 2023 amendment process, does not inflict racially disparate impacts.

VII. CARB should align modeling to support environmental justice and effective climate resilience.

In furtherance of the goals of the LCFS program and California's commitment to environmental justice and climate resilience, we urge CARB to hold at least one workshop specifically related to environmental justice. CARB must ensure that modeling scenarios include environmental justice considerations and provide for the exclusion of polluting fuels and elimination of program policies that favor such fuels.

⁸Arbor J.L. Queist et al., *Disparities of industrial animal operations in California, Iowa, and North Carolina* (2022).

⁹ Ex. 2, Petition for Reconsideration at 10-16.

VIII. Conclusion

For the reasons stated above, CARB should exclude factory farm gas from the LCFS or, in the alternative, amend the LCFS to correct the excessive credit generation, prevent non-additional credits from the LCFS, and prevent racial discrimination. We further urge CARB to immediately cease avoided methane crediting rather than waiting to phase it out by 2040 and to abandon plans to use the LCFS as a financing tool for non-transportation biomethane infrastructure entirely outside the scope of the LCFS.

We thank you for your consideration of these comments.

Sincerely,

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