



February 15, 2024

To: California Air Resources Board

Re: Low Carbon Fuel Standard - <https://ww2.arb.ca.gov/rulemaking/2024/lcfs2024>

The Institute for Agriculture and Trade Policy (IATP) welcomes the opportunity to comment on the California Air Resources Board (CARB) proposed amendments to its Low Carbon Fuel Standard (LCFS). IATP is a 38-year-old, non-profit organization with headquarters in Minnesota that works nationally and internationally for fair and sustainable food and trade systems.

Throughout IATP's history, we have seen firsthand the economic and environmental harm the transition to large-scale confined animal feeding operations (CAFOs) has caused to rural communities in Midwest states. California's LCFS, unfortunately, has contributed to the further expansion of the CAFO system in Midwest states, such as Minnesota and Wisconsin, through its skewed emissions intensity scoring and associated credits for CAFO-derived biogas. An analysis by CoBank concluded that incentives and credits generated through California's LCFS "are the main source of revenue for dairy digester projects."¹ We do not believe biogas projects that subsidize Midwest CAFOs are consistent with California's LCFS intention and purpose: to reduce California's GHGs through its transportation sector by requiring cleaner fuels.

IATP offers the following comments on the LCFS's proposed amendments:

CARB's LCA for biogas excludes significant emissions

Biogas derived through methane digesters on large-scale CAFOs requires enormous quantities of animal manure. The largest source of direct methane emissions from dairy and beef CAFOs is the animals themselves (at least two-thirds), the remaining emissions (methane and nitrous oxide) come from giant, often liquified, waste lagoons. Hog CAFO emissions come entirely from liquified manure storage. Other greenhouse gas emissions associated with the CAFO system include feed production and the spreading of manure on neighboring fields. Despite the significant emissions coming from the CAFO system, CARB's current emissions intensity analysis gives biogas a negative carbon intensity score, lower than any other transportation fuel, including electricity produced by solar and wind energy which produce no discernable waste, emissions or water pollution.²

¹ <https://sso.cobank.com/documents/7714906/7715329/Interest-in-California-Dairy-Manure-Methane-Digesters-Follows-the-Money-Aug2020.pdf/be11d7d6-80df-7a7e-0cbd-9f4ebe730b25?t=1603745079998>

² <https://ww2.arb.ca.gov/sites/default/files/barcu/board/books/2023/092823/23-8-1pres.pdf>

We urge CARB to reconsider how it calculates its biogas emissions intensity score in the following five areas:

- 1) The “avoided methane” crediting policy assumes that open air flaring is the only option for dairy, beef or hog producers and that captured methane is an “avoided emission.” This ignores alternative approaches to raising animals (such as on appropriately scaled, pasture-based systems that avoid giant liquid manure lagoons all together) and better manure management (such as lower-emitting dried manure systems). In other words, the CAFO system itself and its management of manure is demonstrably avoidable.
- 2) CARB’s low score for biogas and ensuing credits incentivizes more manure production from large CAFOs. As farmers struggle through volatile and often below-cost markets, payments for waste production create a new income stream that can subsidize larger herd sizes to produce more manure and access more LCFS credits.³ The growth of CAFOs mean additional direct cow-related emissions. Currently, CARB does not have an effective system to track operations seeking biogas credits that are expanding their herd size (with associated additional methane emissions), or whether the LCFS is helping to finance new CAFOs with additional emissions.
- 3) The state does not account for several major sources of CAFO emissions within its biogas scoring system. CAFO systems are entirely dependent on low cost (sometimes below cost) feed often from off the farm, just as ethanol or biodiesel are entirely dependent on corn and soy production. The LCA for biogas from beef, dairy and hog CAFOs does not include the significant emissions associated with feed, including nitrous oxide emissions associated with fertilizer use (particularly for corn) and emissions associated with the harvest, processing and transport of feed to the CAFO. The LCA also doesn’t include emissions from cows themselves in the case of dairy and beef. Finally, the LCFS does not count the emissions associated with the application of biogas digestate on the land, which can emit more methane and nitrous oxide than undigested manure.⁴
- 4) There is growing evidence that CAFOs with biogas digesters are still significant sources of methane emissions. Recent Food & Water Watch research found that 15 California dairies, with biogas digesters receiving credits through the LCFS, emitted enough methane to be tracked by satellite and imaging aircraft.⁵ Other researchers have found that digester systems often leak, leading to an underestimation of their emissions.⁶ Methane leaks from digesters could contribute to as much as a 15% loss rate — cutting into its emissions intensity score and making it impossible to be a net loss emitter.⁷
- 5) CARB doesn’t adequately consider new models of methane digesters, where manure or gas are trucked from several surrounding CAFOs to a centralized digester. For

³ <https://hoards.com/article-30925-energy-revenue-could-be-a-game-changer-for-dairy-farms.html>

⁴ <https://www.sciencedirect.com/science/article/pii/S0167880917300701>

⁵ <https://storymaps.arcgis.com/stories/4b708bdc0d2d419ba34cb352ca79b6e3>

⁶ <https://www.sciencedirect.com/science/article/pii/S2590332222002676>

⁷ <https://iopscience.iop.org/article/10.1088/1748-9326/ab9335>

example, a Wisconsin digester project is accessing LCFS credits sources from three local dairies.⁸ A proposed Minnesota digester would collect manure from four dairies in three counties.⁹ Each project includes an enormous amount of additional truck traffic and fuel use to be workable, not to mention the emissions associated with each individual CAFO.

CARB ignores impacts on rural communities outside of California

One of the stated objectives of the LCFS and associated amendments is “to strengthen equity provisions and promote investment in low income, rural communities...” While the LCFS extends well beyond the boundaries of California, with projects all over the country, CARB’s Standard Regulatory Assessment Analysis notably does not consider rural communities outside of California. We strongly urge CARB to conduct analysis and monitoring of whether low-income, rural communities outside of California are benefiting from biogas investment through the LCFS, including a process for direct public input from community-members.

California’s LCFS has already sent credits to multiple dairy farms in western Minnesota, throughout Wisconsin and in states around the country.^{10,11} Last month, Minnesota’s Public Utility Commission held a hearing in western Minnesota for a \$13.9 million plan for a 28-mile pipeline of methane gas from four local dairies into a nearby natural gas pipeline.¹² The project developers have stated they plan to have California’s LCFS credits help pay for the project. Another digester in western Minnesota is capturing nearly 700,000 gallons of daily manure from three big dairies to power a digester that has partially financed by carbon credits.¹³ Minnesota lost nearly 150 dairy permits in 2023, much of them due to the shift toward larger dairy CAFOs. Biogas digesters are too costly for small and mid-sized dairies, and the economics don’t work for those not located near natural gas pipelines. In essence, CARB’s LCFS system is picking winners and losers in states outside of California.

The phase out timing for biogas credits is too long

CARB’s current “deliverability” requirements that out-of-state biogas be simply added to a North American pipeline — without assurance that it will be used in California — run counter to the intention of the LCFS and greatly weaken the effectiveness of the policy. The proposed amendments to strengthen the “deliverability” requirement for projects started after 2029,

⁸ <https://investigatamidwest.org/2023/12/22/bio-cash-how-a-cow-powered-controversial-fuel-ingests-wisconsin-clean-energy-dollars/>

⁹ <https://www.mprnews.org/story/2023/09/12/digesters-make-renewable-energy-from-manure-but-face-hurdles>

¹⁰ <https://ww2.arb.ca.gov/resources/documents/lcfs-pathway-certified-carbon-intensities>

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<https://foodandwater.maps.arcgis.com/apps/mapviewer/index.html?webmap=a40e6dc32bfa4165af469b3a648d4a76>

¹² <https://www.agweek.com/livestock/dairy/minnesota-puc-to-host-meeting-on-13-9m-pipeline-transporting-renewable-natural-gas-from-dairy-farms>

¹³ <https://www.dmt-cgs.com/minnesota-first-rng-plant-amp-americas-dmt/>

with a 10-year grace period, unnecessarily delaying a much-needed fix that could and should happen next year.

CARB's own Initial Statement of Reasons (ISOR) admits that biogas takes up only a fraction of vehicle fuel use and that biogas use will decline as zero emission vehicles penetrate the market.¹⁴ There is an acknowledgement that biogas as a transportation fuel will need to transition out of the fuel mix to avoid stranded assets. We agree and would argue that waiting until after 2029 (with an additional 10-year grace period) to phase out biogas crediting is an excessively long period and should be eliminated, particularly for a transportation fuel that depends on waste production and could add GHG emissions in its production.

Guardrails for crop-based biofuels are threatened by Sustainable Aviation Fuels

A recent National Academy of Sciences paper on life cycle assessments highlighted the critical importance of evaluating scale when assessing different transportation fuels.¹⁵ The proposed amendments open the door for the inclusion of Sustainable Aviation Fuels (SAF) for flights within the state of California. The future of the SAF market is highly speculative. The World Resources Institute estimates that to meet the Energy Department's stated goal on SAF it would require an additional 114 million acres of corn, 20% more than current corn acreage.¹⁶ This type of major expansion in corn production would have a profound effect on land use change. We urge CARB to consider the impact of the additional inclusion of SAFs within the LCFS credit system for California and land use emissions in other states and countries.

The LCFS Amendments Ignore California's own Environmental Justice Advisory Committee

The state's Environmental Justice Advisory Committee (EJAC) was sharp in its criticism of the current LCFS, including the way CARB has evaluated CAFO biogas. In its comment, the Advisory Committee stated, "The LCFS has exacerbated and entrenched harmful pollution in communities near and regions containing large dairies and other confined animal feeding operations by incentivizing the production, storage, and land application of wet manure."¹⁷ EJAC specifically called on CARB to "Conduct a full accounting of GHG and air pollution emissions associated with pathways relying on the production of fuel from livestock and dairy manure"; "Eliminate avoided methane credits effective January 1, 2024;" and "Eliminate credit generation for pathways relying on the production of fuel from livestock and dairy manure for emissions reductions that otherwise would have occurred or were legally or contractually required to occur." EJAC further recommends that CARB take steps to "immediately initiate formal rulemaking for the regulation of livestock methane."

¹⁴ <https://ww2.arb.ca.gov/sites/default/files/barcu/regact/2024/lcfs2024/isor.pdf>

¹⁵ <https://www.nationalacademies.org/our-work/current-methods-for-life-cycle-analyses-of-low-carbon-transportation-fuels-in-the-united-states>

¹⁶ <https://www.wri.org/insights/us-sustainable-aviation-fuel-emissions-impacts#:~:text=If%20the%20U.S.%20were%20to,United%20States%20for%20all%20purposes>

¹⁷ <https://www.arb.ca.gov/lists/com-attach/1-lcfs2024-VjMFaQNjUGABWFA0.pdf>

IATP is supportive of EJAC's recommendations, and we urge CARB to revise its LCFS amendments accordingly.

IATP thanks CARB for considering these comments. Please direct follow-up questions or correspondence to Ben Lilliston at blilliston@iatp.org.