

VIA ELECTRONIC FILING

May 1, 2024

Chair Liane M. Randolph
California Air Resources Board
1001 I Street
Sacramento, California 95814



Re: RNG Coalition’s Comments on Climate Action Council’s Petition for Rulemaking to Regulate Methane and Other Air Pollutants from California Livestock

Dear Chair Randolph:

The Coalition for Renewable Natural Gas (RNG Coalition) is a California-based nonprofit organization representing and providing public policy advocacy and education for the Renewable Natural Gas (RNG) industry.¹ RNG Coalition respectfully submits these comments to the California Air Resources Board (CARB) in response to the Petition for Rulemaking to Regulate Methane and Other Air Pollutants from California Livestock (the Petition) filed by Climate Action California on March 1, 2024.²

While doubtlessly well meaning, the Petition errs in several critical ways and, as a result, misrepresents the success of CARB’s existing strategy to reduce methane from dairies. Therefore, the Petition reaches incorrect conclusions on multiple issues and, if acted upon, would ultimately delay progress and harm the state’s efforts to reduce methane from dairies prior to 2030.

The Petition Correctly Recognizes the Importance of Methane Reduction as a Critical Near-term Strategy to Address Climate Change

We agree with the Petition’s general characterization of methane as a critical near-term component of the climate fight. For example, the Petition correctly states that, “[r]apid reduction of methane will slow global warming and give us time to achieve 1.5 degrees C total warming with CO₂ reductions.”³ Methane is a highly potent greenhouse gas with impacts greater than 80 times that of carbon dioxide over a 20-year period. The critical need to address methane as a potent short lived climate pollutant is well understood by CARB, and prioritization of methane reduction from multiple sources, including dairies, is required by California statute through Senate Bill 1383 (2016, Lara).⁴

The concentration of methane in the atmosphere is increasing at an alarming rate.⁵ It is the second most important GHG, behind carbon dioxide, and it can and must be addressed quickly. There is no more effective and immediate step we can be taking as a planet to address climate change now than to

¹ For more information see: <http://www.rngcoalition.com/>

² https://ww2.arb.ca.gov/sites/default/files/2024-03/240301_CAC-methane-petition.pdf

³ Petition, page 4.

⁴ https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB1383

⁵ See “Increase in atmospheric methane set another record during 2021”, National Oceanic and Atmospheric Administration, Press Release, April 7, 2022. <http://noaa.gov/news-release/increase-in-atmospheric-methane-set-another-record-during-2021>.

aggressively and rapidly reverse emissions of fugitive methane from all sectors, including society's agricultural systems.

The Intergovernmental Panel on Climate Change (IPCC) also continues to emphasize the importance of methane capture stating that, "reducing non-CO₂ emissions such as methane more rapidly would limit peak warming levels and reduce the requirement for net negative CO₂ emissions" and that, "strong, rapid and sustained reductions in methane emissions can limit near-term warming and improve air quality by reducing global surface ozone."⁶

The Petition Correctly Recognizes the Importance of Anaerobic Digesters as a Proven Manure Methane Control Technology

We agree with the Petition's statements that Anaerobic Digestion (AD) of dairy manure is a "proven method of reducing manure-generated methane"⁷ and that "CARB's model-based estimates of methane emissions and reductions from digesters and AMMP are likely *under* estimates."⁸ California efforts to install dairy digesters dates back (at least) to 2002 and the first round of funding for the California Energy Commission's Dairy Power Production Program.⁹ The deployment of dairy AD is a well-understood tool for controlling methane that is supported by decades of study by CARB and by other leading environmental authorities.

For example, the United States Environmental Protection Agency (US EPA) has been tracking and supporting agricultural AD of manure with productive energy use since the inception of the AgStar program in 1994.¹⁰ Twenty to thirty years since the initial serious US exploration of this approach, AD for methane recovery systems are technically feasible for over 8,000 *existing*¹¹ large dairy and hog operations across the US, yet progress on AD deployment at farms had largely stalled nationwide until California instituted additional work on this topic under SB 1383.

California's framework for supporting dairy AD has helped drive growth from 244 operational projects nationwide in 2018 to 343 operational projects in the United States as of January 2023.¹² The recent buildout has been largely in California and largely driven by a combination of LCFS value, federal Renewable Fuel Standard credit value, plus direct grant monies through programs like California's Dairy

⁶ IPCC, 2023: *Summary for Policymakers*. In: *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf

⁷ Petition, page 1.

⁸ Petition, page 9.

⁹ <https://calepa.ca.gov/history/>

¹⁰ <https://www.epa.gov/agstar>

¹¹ We emphasize EPA's assessment of the number of existing farms that can support digesters to avoid triggering concerns that avoided methane crediting somehow leads to expansion or consolidation of farms. As discussed in more detail below, incentivizing anaerobic digestion as a clean fuel and manure management method does not incentivize manure production by dairy farmers or increases in herd size.

¹² <https://www.epa.gov/agstar/agstar-data-and-trends>

Digester Research and Development Program.¹³ The Ag Star program highlights the California SB 1383 framework for dairy AD as a success story on their website.¹⁴

While we always support additional stakeholder dialog around AD and RNG issues, we note that the facts on these issues have not changed and CARB has held extensive stakeholder outreach on these topics over the last decade, as required by Senate Bills (SB) 605 (Lara, 2014)¹⁵ and SB 1383.

Senate Bill 605 required that CARB complete a comprehensive strategy to reduce emissions of short-lived climate pollutants (SLCP) in the state and hold at least one public workshop during the development of the strategy. CARB did so, developing the *Short Lived Climate Pollutant Reduction Strategy*¹⁶ (SLCP Strategy) in March of 2017 with input from, “state and local agencies, academic experts, a working group of agricultural experts and farmers convened by the California Department of Food and Agriculture (CDFA), businesses, and other interested stakeholders in an open and public process”.¹⁷ Throughout this process, CARB “sought advice from academic, industry, and environmental justice representatives.”¹⁸

SB 1383 further required that CARB provide a forum for public engagement on these issues by holding at least three public meetings in geographically diverse locations throughout the state where dairy operations and livestock operations are present. CARB went above and beyond this requirement and conducted almost two years of stakeholder engagement on these topics through a Dairy and Livestock Greenhouse Gas Reduction Working Group (Working Group).¹⁹

The three subgroups of the Working Group held 28 meetings that were open to the public for in-person and remote attendance and participation. The subgroup meetings typically included “information presented by subject matter experts and representatives from academia, industry, and non-governmental organizations, including environmental justice advocates” and environmental justice experts served on the subgroups.²⁰ The full Working Group—composed of the principals at CARB, the California Department of Food and Agriculture (CDFA), the California Energy Commission (CEC), and the California Public Utilities Commission (CPUC)—held three public meetings.

In March of 2022 CARB held another extensive public discussion of these topics, conducting an all-day workshop on *Methane, Dairies and Livestock, and Renewable Natural Gas in California*.²¹ This workshop contained an in-depth presentation from CARB on LCFS mechanics promoting dairy AD.²² In the same month CARB released an *Analysis of Progress toward Achieving the 2030 Dairy and Livestock Sector*

¹³ <https://www.cdfa.ca.gov/oefi/ddrdp/>

¹⁴ <https://www.epa.gov/agstar/renewable-natural-gas-agricultural-based-adbiogas-systems>

¹⁵ https://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB605

¹⁶ https://ww2.arb.ca.gov/sites/default/files/2020-07/final_SLCP_strategy.pdf

¹⁷ CARB SLCP Strategy, p. 25.

¹⁸ Ibid.

¹⁹ *Recommendations to the State of California’s Dairy and Livestock Greenhouse Gas Reduction Working Group* <https://ww2.arb.ca.gov/sites/default/files/2020-11/dairy-subgroup-recs-112618.pdf>

²⁰ Ibid., p. 3.

²¹ <https://ww2.arb.ca.gov/our-work/programs/slcp/meetings>

²² <https://ww2.arb.ca.gov/sites/default/files/2022-04/dairy-ws-session-9-CARB.pdf>

*Methane Emissions Target*²³ after taking extensive public input²⁴ on a draft of that analysis. In the *Analysis of Progress* document CARB provided further analysis of LCFS and RFS environmental credit prices on ag AD project economics and continued to support AD as a primary means to reduce dairy manure methane emissions.

In 2023 and 2024 CARB has held extensive public process on these topics as part of the ongoing LCFS rulemaking.²⁵ CARB has carefully and appropriately studied the proper mix of policies to promote dairy methane reduction and found a successful formula that would, at a minimum, be significantly disrupted should the Petition be approved.

The Petition Correctly Recognizes Some of the non-GHG Air Emission Benefits of California Digester Projects, Misstates or Oversimplifies Others

We were pleased to see the Petition acknowledge that dairy AD is a key tool for odor mitigation that can have other local air pollutant benefits. For example, the Petition correctly states that, “[d]igesters reduce hydrogen sulfide emissions.”²⁶ Local air quality benefits of AD has long been a driver of the industry and a key reason to support the technology at farms. EPA clearly articulates this fact on the AgStar website discussing the benefits of AD, which states, “manure digester systems can help reduce odors from livestock manure.”²⁷

However, in other areas the Petition misstates or misrepresents the current successful incentives and requirements to install low-polluting technologies at dairy digesters. For example, in discussing emissions of nitrogen oxides (NOx) emissions, the Petition states that, “[h]ence to control the air pollution created by digesters we need a regulation which requires fuel cells or, at minimum, turbines (about 5 times less pollution than ICE).” This statement appears to disregard existing stringent air quality requirements on power generation equipment in California. The Petition fails to recognize that this is why the vast majority of dairy digester projects that have been built under the SB 1383 framework are RNG projects, which usually have comparable or, in some cases, even lower on-site NOx emissions than power generation through fuel cell technology.

Both CARB and US EPA²⁸ studies have previously found that pipeline injection of RNG reduces criteria pollutants locally (relative to a case where the biogas is flared or used in most on-site power generation equipment). On a lifecycle basis, RNG projects either are, at a minimum, NOx neutral (when used directly to displace fossil gas) or, more commonly, NOx reducing when used to displace diesel (for example in natural gas vehicles, electric vehicles, hydrogen vehicles, etc.). This was explored carefully²⁹ by CARB during the extensive prior public process required by SB 1383 discussed above.

²³ California Air Resources Board, *Analysis of Progress Toward Achieving the 230 Dairy and Livestock Sector Methane Emissions Target*, p. 22, March 2022, <https://ww2.arb.ca.gov/sites/default/files/2022-03/final-dairy-livestock-SB1383-analysis.pdf>.

²⁴ <https://www.arb.ca.gov/lispub/comm2/bccommlog.php?listname=draft-dl-analysis-ws>

²⁵ <https://ww2.arb.ca.gov/rulemaking/2024/lcfs2024>

²⁶ Petition, page 14.

²⁷ <https://www.epa.gov/agstar/benefits-anaerobic-digestion>

²⁸ <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100QCXZ.PDF?Dockkey=P100QCXZ.PDF>

²⁹ <https://ww2.arb.ca.gov/resources/documents/dairy-digester-emissions-matrix>

The Petition Errs in Stating that Existing Incentives under the Low Carbon Fuel Standard Incentivize the Production of Additional Methane

The Petition states that, “California’s Low Carbon Fuel Standard (LCFS) seems to incentivize the production of additional methane, so long as some of that additional methane is captured and used for an internal combustion vehicle engine.”³⁰ This assertion contains two incorrect statements.

First, there is no perverse incentive to produce more methane created by the LCFS rule. LCFS credits from biomethane production are set based on pre-existing farm-specific baselines. Therefore, if a farm changes their manure handling practices (to one that increases methane emissions) and then tries to claim they have built a digester to reduce those emissions CARB *will not* grant avoided methane credit. RNG project developers understand these incentives well and do not approach farms whose baseline practices do not include existing methane emissions.

Further, dairy RNG at current transportation GHG market prices, generates only a small fraction of the gross revenue that is created by milk-sales. Only a small share of that revenue goes to the farmer—the majority will be distributed to cover the costs of the digester developers, the gas marketer, the credit broker, end users (e.g., fleets adopting clean vehicles), the investors, and the banks. Meaning that, even if farm-specific baselines were not used, the farmer does not make enough additional revenue from RNG to justify increasing herd size. However, the additional LCFS revenue from RNG production *is* critical to help defray the cost of an anaerobic digester and therefore drive methane reductions.

Second, LCFS pathways reward methane reduction regardless of end use. RNG Coalition is end-use agnostic, and it is a key advantage of RNG that it can be used directly in natural gas vehicles (which already have better tailpipe emission performance than conventional diesel engines) or converted to hydrogen or electricity to power zero tailpipe emission vehicles. As shown in Figure 1, a project receives more LCFS credit if you use RNG to make electricity (to power an electric vehicle) than when you use it in a natural gas truck.

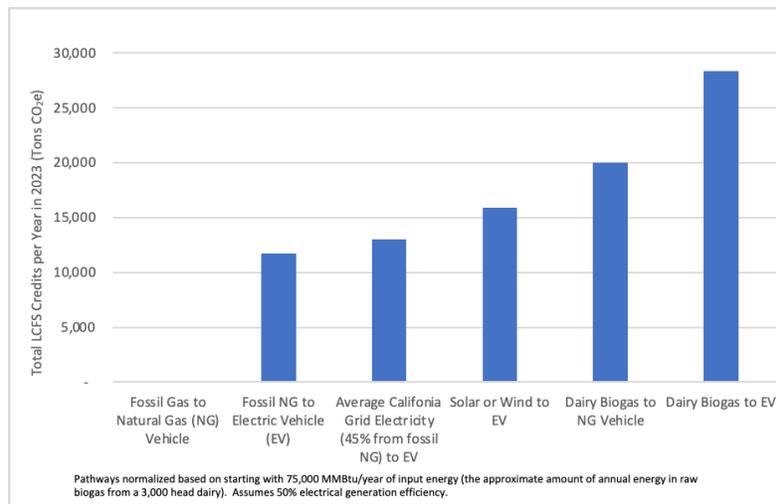


Figure 1. LCFS Provides More Credit to EV End Uses of Dairy Biogas than to NGV End Uses

³⁰ Petition at 10.

This is because the LCFS correctly recognizes both emission performance as the fuel as it is made (including methane reduction) and the end use efficiency of the vehicle (where EVs are often more efficient than combustion vehicles). Therefore, we strongly disagree with the incorrect statement in the Petition that crediting dairy manure methane reductions in LCFS somehow requires use in an internal combustion vehicle.

Because of Dairy Digesters and LCFS Incentives, the State is on Track to Hit the Manure Management Portion of the SB 1383 Goals

Recent UC Davis analysis shows continued implementation of California’s incentive-based dairy methane reduction efforts will, by 2030, achieve the full SB 1383 40% reduction goal for the agricultural sector as a whole.³¹ This analysis also shows that it is the manure methane reductions—primarily driven by AD deployment—that are creating the lion’s share of the emission reductions from this sector.

This is a powerful and important finding. California’s dairy industry, with support from the LCFS and other key programs (e.g., CDFA grants and the federal Renewable Fuel Standard), is on a course to meet the methane reduction challenge required by California law. In terms of both emission reduction and state-dollar-spent cost effectiveness, these are some of the state’s most successful climate protection activities.³²

A Petition-driven abrupt change to the state’s existing emissions reduction strategy for dairy manure methane would ignore the extensive stakeholder engagement work conducted by state agencies on these topics, as detailed above. It would also discourage a new RNG industry that has been coalesced primarily to reduce greenhouse gas emissions, and most importantly, disincentivize investment in one of the most effective methods of methane abatement that the state fundamentally needs to use to reach its statutory goals.

Realistically, if California wants to continue to lead globally on critical reductions in methane from dairy and swine operations, they cannot consider significantly upending the planned approach every few years—as the Petition would call for—especially if the existing framework continues to demonstrate success.

If CARB Wishes to Continue to Promote Near-term Independent Private Investment in Dairy RNG Projects Any Switch from Incentives to Direct Requirements to Install Anaerobic Digesters must be Carefully Managed

RNG production at farms is usually handled by third-party project developers who constitute a large share of RNG Coalition’s membership. These firms take substantial financial risk on these projects, historically because of explicit direction from CARB and other California leaders to do so.

³¹ Kebreab, Mitloehner and Sumner, *Meeting the Call: How California is Pioneering a Pathway to Significant Dairy Sector Methane Reduction*, December 2022, <https://clear.ucdavis.edu/news/new-report-california-pioneering-pathway-significant-dairy-methane-reduction>

³² CARB, *Analysis of Progress Toward Achieving the 2030 Dairy and Livestock Sector Methane Emissions Target*, p. 17, Table 3.

The current LCFS rule already contemplates an appropriate phase-out of avoided methane crediting once mandatory control requirements are in place. Section § 95488.9(f)(3)(B) of the Current Rule states that:

“...in the event that any law, regulation, or legally binding mandate requiring either greenhouse gas emission reductions from manure methane emissions from livestock and dairy projects or diversion of organic material from landfill disposal, comes into effect in California during a project’s crediting period, then the project is only eligible to continue to receive LCFS credits for those greenhouse gas emission reductions for the remainder of the project’s current crediting period. The project may not request any subsequent crediting periods.”

Recently-proposed draft changes to the LCFS rule have introduced significant uncertainty³³ that would only be compounded by accepting the petitioners’ arguments for a new rulemaking. It is unclear to all stakeholders how long such a rulemaking would take, what legal action would occur, and what the ultimate requirements that would satisfy the Petitioners would entail. Therefore, should CARB grant the petition current projects to reduce methane at farms would stall as all parties awaited the results of the new rules, all but assuring that the SB 1383 statutory 2030 deadline for methane reduction would be missed.

Agricultural RNG projects are also a clear example that tests the thesis that investments based primarily on California’s climate policies is a sustainable business model. Agricultural RNG development is one of the first major low carbon fuel industry built primarily around California climate programs and it has only been successful because it was stood up by CARB based on the extensive public process described above.

Major changes to this framework—without substantive new information—would undermine prior efforts to convince investors to make long-term capital deployment decisions based on California’s climate strategies.³⁴ Therefore, CARB should stand by its prior robust public process on the topic and deny the Petition.³⁵

Sincerely,

/S/

Sam Wade

Director of Public Policy

Coalition for Renewable Natural Gas

³³ We continue to support the LCFS, yet we have expressed our concerns with the investment uncertainty created by the proposed changes to dairy RNG treatment in the program in the following comments: <https://www.arb.ca.gov/lists/com-attach/6918-lcfs2024-UiBSOgNIWVVWMwBv.pdf>

³⁴ For the initial years of the LCFS, prospective low carbon fuel producers included anticipated credit revenue in financial models and the investors would ignore or heavily discount the LCFS line item, due to perceived change in law risk (colloquially called “stroke of the pen” risk). See our recent LCFS comments (Ibid.) for more details.

³⁵ Conversely, if CARB accepts even limited aspects of the Petition, it should also then reject the proposed LCFS changes to crediting dairy digester projects and leave the current framework in place that phases out avoided methane crediting to dairy projects over a period of ten years once a mandatory control rule is adopted.