



May 1, 2024

Hon. Steven S. Cliff, Ph.D.  
Executive Officer  
California Air Resources Board  
1001 "I" Street  
Sacramento, CA 95814

*Submitted electronically*

**Re: Dairy Cares Comments on Petition for Rulemaking to Regulate Methane and Other Air Pollutants from California Livestock**

Dear Executive Officer Cliff and Members of the California Air Resources Board,

Dairy Cares<sup>1</sup> offers the following comments in response to the Climate Action California ("CAC") Petition for Rulemaking to Regulate Methane and Other Air Pollutants from California Livestock submitted to the California Air Resources Board ("CARB") on March 1, 2024 (the "Petition").

Since the adoption of Senate Bill ("SB") 1383, Dairy Cares has supported the development of a variety of short-lived climate pollutant ("SLCP") strategies and incentive-based regulatory programs that are making meaningful progress towards the SB 1383 targets. We generally agree with the importance of taking near-term action on SLCP reductions and the characterization of methane as a critical near-term climate solution. The urgent need to address methane as a potent short-lived climate pollutant is well understood by CARB and the dairy sector. We also agree

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<sup>1</sup> Dairy Cares represents the California dairy sector, including dairy producer organizations, leading cooperatives, and major dairy processors. For more information about Dairy Cares, please visit [www.dairycares.com](http://www.dairycares.com).

with the Petition's characterization that anaerobic digestion is a "proven method of reducing manure-generated methane." However, the Petition grossly underrepresents the success of the State's incentive-based strategies and programs to reduce methane from dairies, mischaracterizes the role of wet manure systems in the dairy sector and is based on the false premise that the sector's 40% reduction target is not being achieved in a timely fashion. Put simply, the Petition is premature, fundamentally flawed, and will do more harm than good.

These comments explain why CARB is not obligated to adopt a rulemaking that requires *all* dairies to adopt some effective approach to mitigating methane, nor is CARB required to undertake other measures set forth in the Petition, such as eliminating wet manure systems and addressing local environmental impacts under the purview of local and regional regulatory bodies. CARB is meeting its various statutory requirements under SB 1383, including the development of incentive programs and preparation of an in-depth analysis on progress towards SB 1383 targets. CARB and other responsible agencies like the California Public Utilities Commission and the California Department of Food and Agriculture have implemented voluntary programs that have and will continue to make significant progress towards achievement of the SLCP target.

Finally, the Petition fails to identify a feasible regulatory design beyond arguing for vague and highly ineffective one-size-fits-all command-and-control regulatory strategies. Developing a command-and-control approach is not required and would distract from more important endeavors, such as improved data gathering and development of stable incentive funding mechanisms. Granting the petition to regulate all dairies would disrupt existing markets that require "additionality." A command and control approach could also disrupt the viability of California's dairy farming industry, particularly smaller farming operations that require much longer pay back periods to justify methane capture and avoidance projects. Imposing a blanket strategy for reductions without assurances of adequate funding would create risks of emissions leakage, which SB 1383 expressly requires CARB to address. Unlike the petitioners, California's dairy farming families and the employees who work on dairies do not view leakage risks as a "trivial concern." CARB should reject the Petition and instead focus staff's resources on continuing to ensure stable funding mechanisms such as the Low Carbon Fuel Standard

(“LCFS”) and improved data gathering in support of the State’s achievement of the SLCP reduction targets.

## DISCUSSION

### **I. CARB Is Not Required to Regulate All Dairies at this Time**

Climate Action California argues that CARB is “legally obligated to regulate livestock emissions” because “Health & Safety Code section 39730.7, subd. (b)(1) instructs that CARB ‘shall adopt regulations to reduce methane emissions from livestock manure management ... by up to 40 percent below the dairy sector’s and livestock sector’s 2013 levels by 2030.’” However, in making this argument, CAC omits from its quote of Section 39730.7(b)(1) the requirement that CARB adopt regulations “consistent with this section and the strategy.” This is an important part of the SLCP law because it qualifies CARB’s obligations and requires that the adoption of any regulations must be consistent with the various findings and actions required by SB 1383.

CAC argues that “[b]y repeatedly using the word “shall,” the Legislature gave CARB no discretion regarding whether to adopt the regulations in time to achieve the 2030 target.” However, the Legislature did set conditions regarding when and whether to implement any regulations. The requirement to adopt regulations is expressly pre-conditioned. Further, the Legislature also specifically prohibited CARB from adopting regulations “to achieve the 2020 and 2030 greenhouse gas emissions reduction goals established pursuant to the California Global Warming Solutions Act of 2006,” indicating that CARB does not have other authority that can override the prerequisites contained in SB 1383.

A review of the legislative history of SB 1383 makes clear that the Legislature intended to expressly limit CARB’s authority. As noted in the analysis for the Senate Committee on Environmental Quality, dated Aug. 31, 2016, SB 1383 was amended in a way that “Limits ARB's authority to reduce dairy and livestock methane emissions. . .

By delaying implementation of regulations until 2024, capping the dairy and livestock sector’s methane reductions to 40%, and requiring a number of specific findings prior to implementation, these amendments limit ARB’s existing authority under AB 32 and ARB’s authority to reduce methane

emissions from the dairy and livestock sector under SB 32 (Pavley), if that bill and its companion measure, AB 197 (E. Garcia), are signed by the Governor.”

Thus, the requirement to regulate dairies is not absolute, but heavily conditioned, and the conditions have not yet been satisfied and cannot be fully satisfied at this time.

## II. The Dairy Sector Is Well on Its Way to Achieving the Target Reductions

In the seven years since the passage of SB 1383 in 2016 (2017-2023) the dairy sector has made tremendous progress in reducing methane against the 2013 baseline through a comprehensive approach including methane avoidance, methane capture and utilization, and attrition (fewer cows) in the state’s dairy herd. California’s dairy sector has implemented more than 300 methane reduction projects on dairies in the state, many with State grant funding and other incentives. At roughly the halfway point of 2017-2030, far more than half of the targeted reductions have already been achieved. The dairy sector’s share of CARB’s identified 9 MMT of CO<sub>2</sub>e reduction by 2030 is approximately 7.2 MMT. Based on Dairy Cares’ analysis of CARB’s *Final Analysis of Progress toward Achieving the 2030 Dairy and Livestock Sector Methane Emissions Target*, work published by the Clarity and Leadership for Environmental Awareness and Research Center at UC Davis, and data available from the California Department of Food and Agriculture (“CDFA”), to date, we estimate the sector has achieved more than 4 MMT of reductions, as follows:<sup>2</sup>

- Methane avoidance: 300,000 metric tons
- Methane capture: 2.5 million metric tons
- Attrition due to herd reduction: 1.3 million metric tons

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<sup>2</sup> See Kebreab, Ermias, Ph.D., Mitloehner, Frank, Ph.D., and Sumner, Daniel A., Ph.D., *Meeting the Call: How California is Pioneering a Pathway to Significant Dairy Sector Methane Reduction* published by The Clarity and Leadership for Environmental Awareness and Research (CLEAR) Center at UC Davis (December, 2022), available at: <https://clear.ucdavis.edu/sites/g/files/dgvnsk7876/files/inline-files/Meeting-the-Call-California-Pathway-to-Methane-Reduction.pdf>; CARB’s *Final Analysis of Progress toward Achieving the 2030 Dairy and Livestock Sector Methane Emissions Target* (March 2022), available at <https://ww2.arb.ca.gov/sites/default/files/2022-03/final-dairy-livestock-SB1383-analysis.pdf>; and CDFA’s Dairy Digester Research & Development Program website, available at: <https://www.cdfa.ca.gov/oefi/ddrdp/>.

Significant additional grant funding is available from state and federal programs such as the Inflation Reduction Act (“IRA”) and Investment Tax Credit, and additional digesters are under contract to be built in the state. Significant state and federal funding from the IRA and the U.S. Department of Agriculture’s Environmental Quality Incentives Program are also available for Alternative Manure Management Program (“AMMP”) and Dairy Plus projects. A recent analysis from UC Davis concluded as follows:

Our analysis shows that continued implementation and commitment to the incentive-based climate-smart solutions that are currently driving voluntary dairy methane reductions in California should, by 2030, achieve the full 40 percent reduction in dairy methane sought by state regulators without the need for direct regulation.<sup>3</sup>

Any informed analysis of the manure methane reductions achieved to date shows the state’s dairy sector is well on its way to achieving the full 40% reduction in manure methane (roughly 4 MMT) by 2030, and appropriate steps to address enteric methane reduction are also being taken in anticipation of U.S. Food and Drug Administration (“FDA”) approval of feed additives.

### **III. CARB Cannot Regulate Enteric Emission Reductions at this time.**

Efforts to reduce enteric emissions through genetic selection, diet modification, and feed additives are being pursued and these are critical to achieving CARB’s overall livestock methane reduction targets, particularly for the beef sector. Extensive research and product development is being undertaken to make feed additives commercially available, and Dairy Cares agrees with CARB that conducting additional research on emerging enteric emission reduction strategies is warranted. Dairy Cares is also pursuing development of a voluntary enteric emissions protocol or calculator to help monetize reductions and incentivize usage which should be a prerequisite first step.

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<sup>3</sup> See Kebreab, Ermias, Ph.D., Mitloehner, Frank, Ph.D., and Sumner, Daniel A., Ph.D., *Meeting the Call: How California is Pioneering a Pathway to Significant Dairy Sector Methane Reduction* published by The Clarity and Leadership for Environmental Awareness and Research (CLEAR) Center at UC Davis (December, 2022), p. 4, available at: <https://clear.ucdavis.edu/sites/g/files/dgvnsk7876/files/inline-files/Meeting-the-Call-California-Pathway-to-Methane-Reduction.pdf>.

SB 1383 requires a voluntary incentive-based strategy for enteric emissions reductions, and Dairy Cares looks forward to development of a CARB-approved calculator to quantify and incentivize reductions.<sup>4</sup> Despite these efforts, enteric emission reduction feed additives or other strategies are not cost-effective or commercially available at this time. In fact, the required cost-effectiveness analysis cannot be conducted since no methane-reducing feed additives have been approved by the FDA for use in the U.S., and the cost of these products is not yet known.

California Health and Safety Code Section 39730(f) provides that:

Enteric emissions reductions shall be achieved only through incentive-based mechanisms until the state board, in consultation with the department, determines that a cost-effective, considering the impact on animal productivity, and scientifically proven method of reducing enteric emissions is available and that adoption of the enteric emissions reduction method would not damage animal health, public health, or consumer acceptance. Voluntary enteric emissions reductions may be used toward satisfying the goals of this chapter.

Many dairies are ready and willing to utilize incentives to achieve reductions, but scientifically proven feed additives are not yet commercially available in the U.S. Again, CAC's Petition is premature and overlooks the fact that commercially available and cost-effective requirements cannot be made at this time.

#### **IV. Mandatory Emission Reduction Measures Would Not Be Economically Feasible.**

SB 1383 not only requires any regulations implemented to be technologically feasible, but also “economically feasible considering milk and live cattle prices *and the commitment of state, federal, and private funding*, among other things...”<sup>5</sup> (Italics added)

As has been well documented in CARB's own analysis, “challenging sector economics, insufficient availability of public funds, and underdeveloped markets for value-added manure products are ongoing and persistent market barriers for both digester and alternative manure

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<sup>4</sup> Health & Saf. Code § 39730.7(f).

<sup>5</sup> Health & Saf. Code § 39730.7(b)(4)(B).

management projects.”<sup>6</sup> Additional progress will require both development of dairy digesters as well as certain types of AMMP projects on smaller dairies in California. While the total capital cost of these projects is less, the cost per cow is much higher due to diminished economies of scale. Many of these projects may not be in proximity to one of the existing dairy biogas clusters already in development, resulting in additional costs to interconnect the project to the state’s electric or gas transmission grids. Smaller, isolated dairies are also less attractive to dairy digester project developers due to their higher costs, greater risk and longer pay-back periods. As CARB is well aware, dairy digester developers can build projects in other states with far lower capital and ongoing operations and maintenance costs while still receiving similar financial benefits from California’s LCFS and the federal Renewable Funds Standard program. California’s higher costs and competition from out-of-state projects further expand the need for the stabilization and continuation of resources and incentives such as the LCFS to achieve greater reductions in-state. Direct regulation of dairies as proposed by the Petition does not stabilize LCFS funding, but rather limits this critical source of funding.

How is the dairy industry to trust that adequate investment will be made moving forward to replace the critical LCFS funding currently provided? Any argument that direct regulation of all dairies, including small dairies, is economically feasible is disingenuous.

## **V. Mandatory Regulation Would Not be Cost Effective.**

The Petition offers a limited analysis of cost-effectiveness, simply pointing to the U.S. Environmental Protection Agency’s cost of carbon and comparing that of state-only costs associated with the Dairy Digester Research and Development Program (“DDRDP”). The Petition wrongly asserts that methane can be reduced at dairies at a cost of \$9/MTCO<sub>2e</sub>. The Petition cites data from the 2023 Climate Investment Report, which found that the *program* cost per MTCO<sub>2e</sub> for projects that participated in the DDRDP cost that program \$9/MTCO<sub>2e</sub>. Citing this figure is highly flawed and misleading. The actual cost of these projects was far in excess of \$9 per ton because the cost per greenhouse gas analysis only took into account the costs of the

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<sup>6</sup> *Final Analysis of Progress toward Achieving the 2030 Dairy and Livestock Sector Methane Emissions Target* (March 2022), pp. ES-3-ES-4, available at <https://ww2.arb.ca.gov/sites/default/files/2022-03/final-dairy-livestock-SB1383-analysis.pdf>.

DDRDP (i.e., the funding made available from that program), not the actual cost of the digester projects. The digester projects required many other sources of revenue, such as private capital, LCFS revenue, credits issued under the federal Renewable Fuels Standard, and other funding sources in order to cover the cost of capital. For smaller dairies, which would likely be the focus of the petitioner’s proposal, the payback period for installing digesters is far longer than the larger projects installed to-date, particularly with the loss of LCFS support resulting from a direct regulatory scheme. Focusing exclusively on the costs of one program to the exclusion of looking at all of the other costs of installing and operating a digester system and the associated costs of upgrading facilities and infrastructure is misleading. A more holistic evaluation would not support a finding that requiring emission reductions at all dairies is cost effective. To satisfy this requirement, CARB will need to consider the dairy farms that currently do not have digester systems and analyze at those dairies whether installing digesters in the absence of funding sources like the LCFS is cost effective at those dairies.

#### **VI. Minimizing Leakage is Not a Trivial Concern.**

The Petition characterizes the statutory requirement to minimize leakage as a “trivial concern” because dairies in other states tend to emit significantly less methane per cow.”<sup>7</sup> The Petition’s characterization of the demand for dairy products is at odds with growing national per capita consumption and growing global demand for animal-based protein such as dairy. The recommendations in this Petition would not only fail to achieve the desired reductions but would also exacerbate the problem by causing significant emissions leakage, resulting in higher overall global methane emissions as production simply shifts to other states or regions with higher emissions per gallon of milk produced or when production shifts to other states or regions where methane reduction requirements do not exist. Command-and-control measures for SLCP reductions in the dairy industry will accelerate the shift in production to other states with less costly regulations and less commitment to climate protection. This outcome would be in direct conflict with CARB’s mandates to minimize emission leakage in the design of its greenhouse gas programs. Ongoing attrition and consolidation in California’s dairy sector are evidence of leakage risk that exists already. By minimizing incentive-based emission reduction tools and

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<sup>7</sup> Petition, p. 6.



instead focusing on command-and-control mechanisms, the State's policies would hurt local economies, the majority of which are in the disadvantaged communities the State has identified as priorities. The dairy sector provides more than 175,000 good paying, well benefited jobs, most of which are in the San Joaquin Valley. CARB should not overlook the needs of in-state dairies and the communities that depend on these sources of employment as "trivial concerns."

## **VII. Elimination of Wet Manure Management Systems Would be Counter Productive.**

CAC recommends that California should "[o]ver the next 20 years, greatly reduce or eliminate wet or lagoon style management and replace it with 'dry' management and affiliated methods."<sup>8</sup> This CAC suggestion recognizes that converting from liquid storage of manure in open lagoons to dry storage of manure can result in reduced methane. However, this overly simplistic approach inaccurately characterizes dry systems as environmentally superior to wet systems and reflects a general misunderstanding of the need for most dairies to employ both wet and dry systems for handling, conveyance, and storage of dairy manure. In fact, combined wet and dry manure systems create the strongest opportunity for comprehensive, sustainable management that maximizes climate and other environmental benefits. All manure management systems (dry or wet) have potential impacts, and mitigating these impacts while maximizing the benefits is important.

Water plays a key role in managing manure on California dairies. It is frequently used to remove manure from barns where cows are milked and housed. It provides a safe and efficient means to carry away the manure from barn floors, keeping barns clean for animal health and safety, while preserving the manure for later use as a crop nutrient. Once removed from the barn, combined water and manure (so-called "wet" management") are not wasted, but stored in holding ponds until they can both be used as a crop nutrient and carried from storage ponds to crop fields in pipelines. Thus, water and manure are not wasted, but recycled. The water from flushing manure offsets crop irrigation demands, and the manure applied to crops with water offsets the need for synthetic fertilizers to be mined, manufactured and transported to California for use to grow crops.

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<sup>8</sup> Petition, p. 2.

Farmers can only apply solid manure to cropland before crops are planted. Thus, it can only provide nutrients for the beginning of the crop cycle, when plants are small, and their nutrient demand is comparatively low. Using solid manure only means that the farmer will need to apply synthetic fertilizer later, along with irrigation water, as the crop grows and matures and the crop's nutrient demands increase. In contrast, farmers can apply liquid manure throughout the growing season by adding it to irrigation water. This reduces and sometimes eliminates demand for synthetic fertilizer, and in the process, reduces or eliminates the need to mine for synthetic fertilizer.

Managing manure solely through dry methods creates significant challenges, especially for farming. Dairies can collect manure from barns using other means, such as mechanically scraping or vacuuming lanes to remove and carry manure to storage. This creates a need for additional equipment and maintenance, as well as a need for more labor. Studies have shown that scraping manure from barns instead of flushing increases ammonia emissions. The San Joaquin Valley Air Pollution Control District considers flushing barns a mitigation measure to reduce emissions of Volatile Organic Compounds. As noted above, once a dairy collects and stores manure in dry form, that manure can only be applied to croplands before crops are planted, meaning that less of the manure can be used as nutrients by the growing crops. This can lead to dairies without digester operations needing to export surplus manure to other farmers, which costs additional labor and fuel, while also increasing demand for synthetic fertilizers on the dairy.

All of the above challenges can be reduced or eliminated by planning for sufficient liquid manure to be available at the dairy to meet crop demands. If there is a surplus of liquid manure for crop needs, then a partial reliance on solid manure to facilitate export makes sense, but it needs to fit the specific situation at that dairy. A blanket "convert all systems from wet to dry" policy is not in the best interest of dairy or environmental sustainability.

There are better alternatives for reducing methane emissions than a blanket policy to reduce wet storage. Methane emissions from wet storage can be reduced significantly through use of anaerobic digesters while maintaining the benefits of a liquid manure management system for providing season-long crop nutrients, animal bedding (through pre-digester solids-liquids-separation), barn sanitation and more. In situations where digesters may not be economically

feasible, conversion to entirely dry storage should not be considered the default option, because of the potential to cause significant economic and environmental downsides as noted above. Best practices should be tailored to the conditions at the dairy to ensure overall positive outcomes for climate, water quality, regional and local air quality, odors, worker safety, animal health and economic feasibility.

### **VIII. Granting the Petition Would Be Counterproductive**

Petitioners' proposal to regulate all dairies would be counterproductive to the State goals of reducing SLCP emissions because setting a mandatory standard for all dairies to reduce methane (as opposed to a sector-wide SLCP target) will disrupt any funding source that requires "additionality" and precludes participation by projects with a pre-existing compliance obligation. The LCFS is one such example. By disrupting existing funding sources, the petitioners' request for a mandatory standard would be counterproductive to their stated goals of furthering SLCP reductions and establishing funding sources for SLCP reductions.

The Petition also seeks to dramatically change the current successful incentive-based regulatory approach and replace it with an unproven direct regulatory approach. This dramatic change is inconsistent with the intent and statutory direction in SB 1383, which created a carrot and then stick, if necessary. The development of a direct regulatory approach that even attempts to meet the statutory requirements contained in SB 1383 will take 2-3 years or more and will only curtail additional progress. Ongoing uncertainty about the regulatory approach will lead to confusion and a lack of commitment until the requirements are final and adopted. Farmers, particularly small dairy farmers, will not be in a position to implement projects until regulatory, cost-effectiveness, and technological feasibility are fully known, and the implications of regulatory compliance are understood. Additional uncertainty due to the significant potential for litigation will further delay action and only further ensure the State's goals are not met by 2030. Direct regulation as called for by the Petition is in conflict with the State's SLCP reduction and overall climate goals.

## CONCLUSION

CAC has not established that CARB has a legal requirement at this time to adopt regulations for all dairies to adopt methane reduction measures. Moreover, there are numerous conditions to starting and adopting regulations that have not yet been established and likely cannot be met through the course of a rulemaking. Any rulemaking would be counterproductive and could jeopardize existing funding sources, such as the LCFS, which require additionality. If California is to meet the world-leading SLCP targets, the State should focus its efforts on stabilizing funding opportunities for methane reduction measures, not developing command-and-control measures that limit incentives and drive business out of state. For these reasons, Dairy Cares encourages CARB to reject Petitioners' requested relief.

Respectfully Submitted,

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Michael Boccadoro Executive Director

Dairy Cares