

## **Comments Re: Public Workshop on Updates to the California Cap-and-Trade Program**

To Whom it May Concern,

May 10, 2024

Thank you for the opportunity to provide comments related to the April 23, 2024 public workshop on potential updates to the California Cap-and-Trade program.

Ag Methane Advisors supports dairies around the country in reducing their methane emissions, including projects that participate in CARB's Compliance Offset Program, along with others that are participating in, or are planning to participate in CARB's Low Carbon Fuel Standard program. With a focus on livestock agriculture the majority of our comments are directed on the section of the presentation regarding potential updates to the Livestock Offset Protocol methodology.

Per California's Short-Lived Climate Pollutant Reduction Strategy (SB 1383), California needs to achieve a 40% reduction in methane emissions from the agricultural sector by 2030<sup>1</sup>. The Compliance Offset Program has been crucial in reducing methane emissions from the livestock sector by incentivizing the development of anaerobic digester projects at livestock operations to reduce methane emissions from manure management. While the support for anaerobic digestion projects needs to continue in order to stay on pace to meet the goals of SB1383, additional approaches to reducing methane emissions such as feed additives that reduce enteric methane emissions and alternative manure management practice (AMMP) technologies that divert manure from anaerobic environments have emerged as effective methane abatement strategies. The inclusion of these practices in the Compliance Offset Program would incentivize increased implementation of methane reducing livestock practices in California, and lead to more projects with direct environmental benefits to the state.

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<sup>1</sup> Senate Bill 1383, Chapter 395 ([https://ww2.arb.ca.gov/sites/default/files/2020-07/SLCP\\_Appendix\\_B.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-07/SLCP_Appendix_B.pdf))

## Regarding Overarching Considerations for the Offset Program

1. We support the recommendation included in the March 2, 2021 Compliance Offset Protocol Task Force Final Recommendations<sup>2</sup> to include the use of feed additives that reduce enteric methane emissions as an approved project activity, and to develop a corresponding protocol for use in the program.
  - a. Enteric methane reducing feed additives are now commercially available and are starting to be adopted across the U.S. Some products also provide other health and productivity related benefits to the livestock, which when combined with the benefits of carbon revenue may make these strategies to reduce enteric methane a logical choice for many livestock producers.
  - b. We understand that a protocol for the use of enteric methane reducing feed additives has been submitted to CARB for review. We hope CARB will seek further engagement from stakeholders regarding the implementation of such a protocol.
2. We support the recommendation included in the March 2, 2021 Compliance Offset Protocol Task Force Final Recommendations to include AMMP technologies as an approved project activity.
  - a. The quantification of emission reductions from the implementation of AMMP technologies that divert volatile solids from anaerobic storage can and should use a similar approach to the existing Livestock Offset Protocol (LOP). Therefore, the inclusion of such practices and technologies in the LOP could likely be accomplished with minimal changes to the overall protocol.
  - b. Many stakeholders have called for the implementation of more alternative manure management projects in California, so including this practice within the scope of the existing LOP would be a way of incentivizing the development of non-digester livestock methane reduction projects with direct environmental benefits to California.
  - c. There are emerging advanced wastewater treatment technologies that can divert close to 100% of the volatile solids from lagoons. Expanding the scope of the LOP to include AMMP technologies could support wide adoption of systems like this in the coming years.

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<sup>2</sup> Compliance Offset Protocol Task Force Final Recommendations  
([https://ww2.arb.ca.gov/sites/default/files/2021-03/offsets\\_task\\_force\\_final\\_report\\_030221.pdf](https://ww2.arb.ca.gov/sites/default/files/2021-03/offsets_task_force_final_report_030221.pdf))

## Regarding Considerations for the Livestock Offset Protocol

3. The post-digestion effluent pond represents a significant source of project emissions associated with the operation of a digester. A cover-and-flare system installed on a digester's effluent pond is a commercially viable option that effectively turns the post digestion effluent pond into a secondary digestion vessel that can further reduce the emissions from the farm, as well as increase the overall environmental benefit of the project. Currently, the LOP does not allow crediting of emissions reductions from covered post digestion effluent ponds. We support the inclusion of accounting for emission reductions produced by the post-digestion effluent pond in the next iteration of the LOP.
4. Solid separation systems play a key role at many dairies, to recover important solids for reuse as bedding, and to prevent solid buildup in manure storages in order to maintain adequate liquid storage volume. Solid separation systems are also often coupled with anaerobic digesters to divert even more solids from anaerobic storage in the post-digestion effluent pond. More recent studies on the performance of various types of solid-liquid separation technologies have shown material deviation from the default separation efficiencies in the livestock offset protocol. For example, the Research and Technical Analysis to Support and Improve the Alternative Manure Management Program Quantification Methodology meta-analysis conducted by UC Davis indicated that a sloped screen demonstrated closer to 30-35% solids removal compared to the 17% default solids removal efficiency in the livestock offset protocol<sup>3</sup>.
  - a. We support updating the default solid separation efficiencies of the livestock offset protocol to better reflect the current literature. Given the prevalence of solid separators at dairies, and the important aspect that they play in the quantification of baseline and project related methane emissions, we believe the separation efficiencies used in the quantification should reflect the most up-to-date scientific understanding of these technologies.
  - b. Due to the prevalence of multi-stage separation systems, we also support the addition of default separation efficiencies for commonly used multi-stage and integrated separation systems (such as an integrated slope screen/screw press), as the use of such systems can have a material impact on the quantity of solids that are separated from manure streams that are

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<sup>3</sup> Research and Technical Analysis to Support and Improve the Alternative Manure Management Program Quantification Methodology April 2020 ([https://ww2.arb.ca.gov/sites/default/files/auction-proceeds/ucd\\_ammq\\_analysis\\_final\\_april2020.pdf](https://ww2.arb.ca.gov/sites/default/files/auction-proceeds/ucd_ammq_analysis_final_april2020.pdf))

not clearly defined when relying on the protocol's default separation efficiencies.

- c. In the case where bedding dryers are used to dry and sanitize bedding prior to use, we recommend allowing the project to assume that 100% of the volatile solids were destroyed in the process of drying bedding.
5. Regarding the assignment of livestock categories to animals that are contributing manure to the digester project, we recommend clarifying the distinction between the "heifer" and "calf" categories, as there is no industry standard that clearly differentiates the two, and farms often use the terms interchangeably. Additionally, the default methane producing capacity and volatile solids production rate varies greatly between the two default categories in the protocol.
6. For projects that rely on totalized flow data for the reporting of biogas flow measurements, situations arise where it is unclear if it is acceptable to use the totalized flow data as recorded, or if data substitution should be applied. We support expanding on the data substitution methodology of the LOP to clarify the proper handling of cases where a data gap exists, but there are valid totalizer readings recorded after the data gap that show the actual quantity of biogas recorded across the gap.

Thank you for your consideration of these comments. Please feel free to reach out with any questions.

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