

July 12, 2021

California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Comments on Draft Analysis of Progress toward Achieving the 2030 Dairy and Livestock Sector Methane Emissions Target

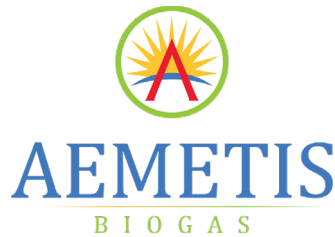
To Whom it May Concern,

Aemetis Biogas LLC would like to thank CARB for its leadership and extensive analysis regarding methane emission reductions across the state. Aemetis Biogas is deeply committed to reducing greenhouse gas emissions through our dairy-based renewable natural gas (RNG) projects throughout California's Central Valley. As the direct result of policies advocated by CARB, Aemetis has completed and is operating two dairy digesters, with 17 more under construction through Q2 2022. The biogas collected from these digesters will be upgraded to pipeline-quality RNG for injection into the Pacific Gas & Electric pipeline to be used as transportation fuel. Additionally, Aemetis is installing a stand-alone R-CNG fueling station at the company's ethanol production plant in Keyes, California in the third quarter of 2021.

In summary, the report states that the State is not on track to reach its target of 9MMTCO₂e of methane emissions reductions by 2030, and that additional funding is most likely needed to help various projects in the dairy and livestock industry. Aemetis agrees with several findings, such as the effectiveness of dairy digesters, as well as the potential revenue streams that can be created by pursuing certain business models. However, the agency should be wary in assuming that these revenue streams alone will support construction of new digesters in the future. It is clear that there is a continuing need for public funding. The significant up-front capital costs associated with anaerobic digesters and uncertainty in the LCFS market make it challenging to finance large-scale projects through commercial sources. Aemetis will continue to support CARB's methane emission reduction goals and strongly supports the continuation and increase of public funding to help achieve these goals by 2030.

Finding 1-1: The Sector Has Made Significant Progress, But Will Not Meet the 2030 Target without Almost a Doubling of Emissions Reductions Projects

Aemetis agrees that more projects need to be constructed in order to reduce methane emissions and meet the 2030 target. The report—*Analysis of Progress toward Achieving the 2030 Dairy and Livestock Sector Methane Emissions Target*—estimates that California Climate investments (CCI) funding has enabled 233 dairy and livestock reduction projects that will be fully operational by 2022. However, these projects will only reduce emissions by an estimated 2 MMTCO₂e of annual methane emissions by the end of 2022. If other factors such as annual population decreases are



accounted for, the total will only decrease by 4.6 MMTCO₂e annually. Thus, in order to reach the 9 MMTCO₂e goal, an estimated 420 additional projects would need to be developed. Continued support through public funding will help ensure that these projects are constructed by developers like Aemetis, which can leverage the certainty of programs like the DDRDP to raise capital from private sources.

Finding 1-2: Public and Private Funding Support Methane Emissions Reduction Projects

Aemetis Biogas fully agrees with the findings in this section. The economic analysis is in line with the project direction that Aemetis and other developers have chosen, namely, that AMMP does not provide a meaningful cost benefit and is not an adequate approach to achieving any meaningful methane reduction goals. As stated in the report, dairy digesters are highly effective at reducing methane reductions and can produce revenue streams through the LCFS for developers that can in turn help spur more dairy digester construction.

Finding 1-3: Methane Emissions Reduction Projects Help to Avoid High Social Cost of GHG Emissions

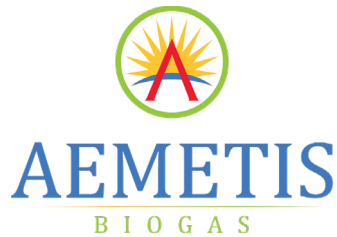
Aemetis Biogas agrees with the findings that methane emissions reduction projects help minimize the high social cost associated with methane emissions. The Central Valley is known for its poor air quality and high asthma rates among young children, due almost entirely to the pollution that settles in the valley. Dairy digester projects provide an immediate benefit to the communities where they reside, many of which have underserved populations that lack capital to finance projects that reduce GHG emissions.

Finding 1-4: Enteric Methane Mitigation Strategies May Help Achieve the Target but Are Not Yet Commercially Available

Aemetis Biogas believes that Enteric Methane Mitigation can contribute to the overall goals of the LCFS and AB-18, but only when considered as a complementary strategy to support methane digesters, which are commercially viable and widely adopted.

Finding 1-5: Dairy and Livestock Sector May Fall Short of the 2030 Target absent an Enteric Strategy and Sufficient Public Funds⁴¹

Aemetis disagrees with the Enteric Strategy Scenario. While potential revenue streams such as LCFS and RINs can provide enough funds to construct additional projects, the market was created through legislation for the sole purpose of using financial incentives to help reduce emissions. This is not a long-term solution; the market has many risks, including price fluctuations, and can be shut down in the future if California decides not to renew the LCFS program. This uncertainty is a very



real concern for private investors and commercial lenders, and can make financing long-term projects difficult and expensive.

Finding 1-6: Dairy Digester Development Will Need Significant Policy and Incentive Support, Providing Additional Methane Emissions Reduction Potential and Biomethane Supply

While options 4a & 4b involve costly upfront capital costs, the cost savings associated with developing dairy clusters that share a single upgrading facility capable of injecting pipeline-quality RNG into a utility pipeline can reduce the time required for a positive return on investment (ROI). Developers like Aemetis Biogas will continue to deploy innovative methods that will reduce capital costs and accelerate benefits for GHG reduction and improved ROI for the state and private or commercial lenders.

We believe that public incentive programs have provided critical mass to accelerating the development and deployment of methane and CO₂ reduction projects like dairy digesters. California has led this effort through various incentive programs that are essential for private developers to leverage for non-public investments. We strongly urge CARB and the State of California to continue to strengthen these programs to ensure the State achieves the ultimate goal of reducing GHG emissions in an aggressive timeframe.

Thank you in advance for your consideration of our comments.

Sincerely,

Andy Foster
President
Aemetis Biogas LLC