

Discussion document for review – not for citation

Dairy and Livestock Working Group
 Digester Subgroup
 DRAFT Working Recommendations for Discussion
 September 20, 2018

Deliverable #1: Dairy Methane Digester Project Expansion: Dairy digesters represent a proven and highly cost-effective way of reducing dairy methane emissions in California. Removing barriers to ongoing dairy digester development and improving incentives for ongoing project development is critical to achieving a 40% reduction in dairy manure methane emissions as sought under the state’s Short-Lived Climate Pollution (SLCP) Plan.

Issue	Discussion	Recommendation
<p>A) As many as 200 digesters may need to be built in order to contribute to the reduction of manure methane by 40% from dairies. Further research can help determine the number of digesters needed vs. other methane reduction practices. To make investments in these digesters attractive to farmers, incentive funding, <u>may</u> continue to be needed.</p>	<p>a) Digesters allow for the initial collection of raw biogas. Digesters are a critical component of the state’s SLCP plan along with other methane reduction options.</p> <p>b) CDFA has estimated that \$500M is needed to encourage and incentivize dairy methane reduction efforts in California. <u>\$260 million has been allocated to CDFA to date through the state Climate Investment Portfolio (GGRF) for dairy methane reduction efforts. Approximately \$150 million has been made available to date for dairy methane reduction projects (AAMP & CDDRDP). An additional \$94 million is expected to be made available in December 2018.</u></p> <p>c) <u>CDFA is currently funding a research project through the California Dairy Research Foundation to further assess strategies for methane emission reduction effectiveness and appropriateness in small and large dairies in California. The project is expected to be</u></p>	<p>1) The legislature should continue to allocate GGRF incentive funding to encourage and incentivize dairy methane reduction efforts, <u>including digesters</u>, in accordance with CARB and CDFA’s recommendations.</p> <p>2) <u>Consistent with 2017-2018 and 2108-2019 fiscal years, the Governor legislature should continue appropriating at least \$100 million annually from GGRF for each of the next several years.</u></p> <p>3) <u>California should further encourage sustainable dairy methane reduction projects through outreach and education to dairy farm.</u></p> <p>4) <u>California should further encourage sustainable dairy methane reduction projects through outreach and education to dairy farm operations.</u></p>

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	<p><u>completed in 2019 and will further inform the state's dairy methane reduction efforts.</u></p>	
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<p>B) Currently, a large majority of RNG supplied to California originates from out of state and this out of state supply is growing rapidly. It is unclear how RNG derived from in-state dairy biomethane will remain competitive with these sources in the future. <u>Equally important, no program to provide long-term contracts exists for dairy biomethane projects.</u></p>	<p>a) Additional incentives or rules may be needed to help in-state RNG production <u>remain</u> competitive with out-of-state sources. Approaches to insure robust demand for CA dairy biomethane is key. <u>The legislature recently passed SB 1440 (Hueso) which requires the CPUC, in consultation with ARB, to consider development of a biomethane procurement program, including its cost effectiveness.</u></p> <p>b) <u>The CPUC is also currently considering a number of issues to improve access for pipeline biomethane projects in California (OIR 13-02-008), including critical gas quality requirements and ongoing incentives for pipeline interconnection.</u></p> <p>c) Other approaches are being discussed, <u>including adoption of pilot financial mechanism to LCFS volatility for dairy biomethane projects.</u> It is critical that there is adequate demand at a sufficient price for California dairy R-CNG in order to encourage <u>ongoing</u> digester development and <u>ensure the state achieves its goals for dairy methane reduction.</u></p>	<p>1) <u>ARB should finalize development of a pilot financial mechanism. The state should adopt and fund the pilot financial mechanism for dairy digester projects.</u></p> <p>2) <u>The CPUC should implement SB 1440 in an expeditious manner to create long-term markets for biomethane, prioritizing dairy biomethane.</u></p> <p>3) <u>The CPUC should extend and increase funding for the existing pipeline biomethane incentive program and implement a queue program to better enable effective utilization of the program.</u></p> <p>4) <u>ARB should develop clear incentives to prioritize LCFS eligibility for in-state dairy biomethane LCFS eligibility should include direct in-state benefits from methane capture and destruction.</u></p>

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Issue	Discussion	Recommendation
<p>C) <u>Community health</u>, air quality and environmental benefits should accrue, and impacts should be avoided, in the communities where dairy methane reduction projects are implemented.</p>	<p>a) <u>California’s dairy industry continues to evolve with fewer, larger dairies. Over the past 70 years the total number of dairies has steadily declined and the average size of dairies in the state has continued to increase. The total number of dairy cows in California reached a peak of just over 1.8 million milk cows around 2008 and has declined slightly over the past decade. These overall trends are expected to continue in the near term.</u></p> <p>b) <u>Environmental justice representatives have raised concerns about dairy “clusters” potentially increasing impacts to some local communities through increased herd size driven by digester development. While some limited consolidation may be occurring naturally, dairy “clusters” are being created from existing dairies with existing cows to improve the economies of scale necessary for pipeline biomethane development and injection. Small and individual dairies are not well-suited for pipeline biomethane. By working together as a “cluster” existing dairy benefit from shared expenses related to biogas cleaning and conditioning (upgrading) as well as a single point, and cost, of interconnection. In this “cluster” or “hub-and-spoke” model, raw biogas is collected from individual digesters on existing dairies in a network of biogas collection lines where it can then be centrally upgraded and injected into pipeline or used onsite for transportation fuel. Smaller local dairies also benefit from this model as they can more easily connect to the existing network.</u></p>	<p>1) LCFS pathways should be established for <u>farm equipment using low carbon fuels</u>. In addition, fleet conversion funding should include programs targeting dairy and agricultural <u>heavy-duty trucks</u>, resulting in benefits to San Joaquin Valley air quality. <u>Truck funding should be contingent on utilization of in-state dairy C-RNG.</u></p> <p>2) CARB, CDFA and partners should implement a program to increase awareness in impacted communities of the benefits that RNG production will bring to those <u>regions, including the reduction of local impacts by dairy operations</u></p> <p>3) Local permitting agencies are best suited to <u>continue handling dairy digester permit applications and conducting review, as required under CEQA.</u></p>

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Issue	Discussion	Recommendation
	<p>c) <u>Dairy digesters add to environmental protection by decreasing ammonia, H₂S, and other emissions. As a result, digesters improve local air quality. Further, dairy R-CNG projects advance air quality improvement by replacing diesel truck fleets with NZE vehicles.</u></p>	

Deleted: California's dairy industry is shrinking overall, but in some cases, consolidation of dairies is leading to more new cows in certain locations. Some parties feel the issue of new cows in some places deserves an intervention by our group. Others maintain that relocation of cows within the state is both limited in scale and not a consequence of state methane reduction efforts, and therefore, such cases are best handled by local permitting authorities.

Consolidation of dairy farms can improve the economics of dairy biogas projects due to the increased number of cows in a single location and drive more projects. Dairy biogas projects can utilize the "hub and spoke" model which consists of numerous dairies supplying biogas into a network of biogas collection pipelines. This biogas goes to a central biogas upgrading facility where it is cleaned to pipeline quality and injected into the utility pipeline and/or used onsite for transportation fuel. Once the network of biogas collection pipelines are in place, additional dairy digester projects can connect to these pipelines in the future.

Dairy digesters add to environmental protection by decreasing ammonia, H₂S, and other emissions. As a result, digesters improve local air quality when the gas is put into the pipeline. Further, dairy R-CNG projects advance air protection by replacing diesel truck fleets with NZE vehicles. There is also a nascent supply of natural gas tractors/farm equipment which could replace polluting diesel equipment.¶