

**Deliverable #1: Dairy Methane Digester Project Expansion**

Committee Member	Item A			Item B			Item C		
	Issue	Discussion	Recommendation	Issue	Discussion	Recommendation	Issue	Discussion	Recommendation
Original Language	An estimated 200 digesters will need to be built in order to reduce manure methane 40% from dairies. To make investments in these digesters attractive to farmers, incentive funding is will continue to be needed.	Digesters allow for the initial collection of raw biogas. Digesters are a critical component of the state's SLCP plan.  CDFA has estimated that \$500M is needed to encourage and incentivize dairy methane reduction efforts. \$159M has been spent or appropriated, and another \$99M has been budgeted.	The legislature should continue to allocate GGRF incentive funding to encourage and incentivize dairy methane reduction efforts in accordance with CDFA's recommendations	Currently, a large majority of RNG supplied to California originates from low-cost sources out of state. It is unclear how competitive RNG derived from in-state dairy biomethane will be competitive with these sources in the future.	Additional incentives may be needed to help in-state RNG production become competitive with out-of-state sources. Legislative discussions are currently taking place advocating for a biomethane procurement program, in which utilities could "take" a certain level of dairy RNG	Committee has not yet identified specific consensus policy recommendations	Environmental benefits must accrue, and impacts must be avoided, in the communities where dairy methane reduction projects are implemented.	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.	TBD. Committee has not yet identified specific consensus policy recommendations.
Fariya Ali						TBD. Committee has not yet identified specific consensus policy recommendations <b>which support the industry and balance the cost impact to consumers.</b>			
Neil Black				Currently, a large majority of RNG supplied to California originates from <del>low-cost sources</del> out of state and this out of state supply is growing rapidly. It is unclear how competitive RNG derived from in-state dairy biomethane will be competitive with these sources in the future.	Additional incentives <del>or rules</del> may be needed to help in-state RNG production <del>become</del> competitive with out-of-state sources. <b>Approaches to insure robust demand for CA dairy biomethane are key.</b> Legislative discussions are currently taking place advocating for a biomethane procurement program, in which utilities could "take" a certain level of dairy RNG. <b>Other approaches are being discussed. It is critical that there is adequate demand at a sufficient price for California dairy R-CNG in order to encourage digester development and secure successful operations of built projects.</b>	TBD. Committee has not yet identified specific consensus policy recommendations. <b>Incentives or rules to ensure demand for California projects should be adopted.</b>  <b>P. Dresher wrote, "Extend provisions of AB 398 Section 4(E) to LCFS:"...no more than one-half may be sourced from projects that do not provide direct environmental benefits in state" Ideally, this would apply to the regulated parties entire compliance obligation.</b>	Add to existing: <b>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.</b>	<b>Proposed Rec:</b> LCFS pathways should be established for natural gas tractors and other farm equipment. In addition, fleet conversion funding should include programs targeting dairy and agricultural equipment, resulting in benefits to the San Joaquin Valley air quality.	
Rebecca Boudreaux					Additional incentives may be needed to help in-state RNG production become competitive with out-of-state sources. <b>Question from RB: Does the substantial difference in CI scores between in state dairy biogas-based RNG and out of state landfill gas-based RNG provide enough incentive for in-state dairy methane projects?</b>			California's dairy industry is shrinking overall, but in some cases, consolidation of dairies is leading to more new cows in certain locations.  <b>RB Comment: Consolidation of dairy farms could improve the economics of dairy biogas projects due to the increased number of cows in a single location. This could ultimately drive more projects. As our group's focus is on fostering new markets for dairy digesters, I do not see how our group could oppose such consolidation.</b>	
Peter Drasher					Extend provisions of AB 398 Section 4(E) to LCFS:"...no more than one-half may be sourced from projects that do not provide direct environmental benefits in state" Ideally, this would apply to the regulated parties entire compliance obligation.			<b>PD Comment: A recent comment made a compelling point about electrical generation for EV's benefitting San Francisco at the expense of the Central Valley Is there a way to balance the impacts and benefits locally?</b>	

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Cliff Gladstein			California should invest in programs to increase awareness among dairy owners of the opportunities presented for enhancing sustainable operations through manure management for RNG.			Support policies that prioritize in-state production of dairy RNG utilizing language similar to that used to accomplish the same objecting in the RPS.			CARB and CDFA should implement a program to increase awareness in impacted communities of the benefits that RNG production will bring to those geographies. Educate key stakeholders of the value of dairy RNG infrastructure to reducing adverse local impacts of dairy operations.
Bonnie Holmes-Gen	An estimated 200 digesters may need to be built in order to reduce manure methane 40% from dairies. Further research will determine the number of digesters needed vs. other methane reduction methods. (We haven't heard the recommendations of the Research sub-group yet to understand what can be achieved through other methods) To make investments in these digesters attractive to farmers, incentive funding is will continue to be needed.	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 methods	The legislature should continue to allocate GGRF incentive funding to encourage and incentivize dairy methane reduction efforts in accordance with CARB and CDFA's recommendations.				Air quality and Environmental benefits must accrue, and impacts must be avoided, in the communities where dairy methane reduction projects are implemented.		
Lynne McBride							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, if dairies of all sizes are included in digester projects, and therefore, such cases are best handled by local permitting authorities.		

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John Shears	<p>An estimated 200 digesters*1 might need to be built in order to contribute to the reduction of manure methane by 40% from dairies.</p> <p>To make investments in these digesters attractive to farmers, incentive funding is will-might continue to be needed.</p> <p>*1 eg. <a href="https://biomass.ucdavis.edu/wp.../ARB-Report-Final-Draft-Transmittal-Feb-26-2016.pdf">https://biomass.ucdavis.edu/wp.../ARB-Report-Final-Draft-Transmittal-Feb-26-2016.pdf</a></p>	<p>CDFA has estimated that (if digesters prove to be a practical/viable slcp emissions reduction pathway that) \$500M is needed to encourage and incentivize dairy methane reduction efforts. \$159M has been spent or appropriated, and another \$99M has been budgeted.</p> <p>*2 <a href="https://www.cdfa.ca.gov/oefi/climate/docs/SLCP_Reommendations.pdf">https://www.cdfa.ca.gov/oefi/climate/docs/SLCP_Reommendations.pdf</a></p>	<p>Care needs to be taken in order to avoid the danger here that depending upon how an overall SLCP funding strategy is implemented (for digester and non-digester projects alike) that this could distort/disrupt* the market and/or lead to a shifting of impacts on the environment and community health.</p> <p>* Analyses conducted to date indicate that dairy digester projects are more likely to be economically feasible for the largest dairies.</p>		<p>Currently, a large majority of RNG supplied to California originates from low-cost sources out of state. It is unclear how competitive RNG derived from in-state dairy biomethane will be competitive with these sources in the future.</p>		<p>Air quality, community health and Environmental benefits must accrue, and impacts must be avoided, in the communities where dairy methane reduction projects are implemented (Bonnie's change in in blue text.)</p>		

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Dairy and Livestock Working Group  
Digester Subgroup  
DRAFT Working Recommendations for Discussion  
July 11, 2018

**Deliverable #2: Electricity Generation and Grid Interconnectivity**  
**Recommendations for cost effective ways to further mitigate criteria pollutant emissions for on-site electricity generation projects, including market development incentives, policy development, removing barriers, and regulatory or legislative action.**

Issue	Discussion	Recommendation
A) Electricity production and sales, including programs like the BioMAT FiT program, provides an important revenue stream and financial diversification for dairy digesters.	<p>In March 2018, CPUC adopted a decision to continue the BioMAT FiT program, which expires in 2021.</p> <p>CPUC staff is currently conducting a program review and plans on releasing draft recommendations in the near future. CPUC may open a new phase of the proceeding to consider staff's recommendations and other proposals to revise the program</p>	<p><u>The BioMAT Fit program provides an important revenue stream for financing dairy digester projects and should be extended by the CPUC.</u></p> <p>As part of the <u>BioMAT FIT program review and any follow-up proceeding</u>, the CPUC should <u>ensure public discussion and consideration of the following program revisions:</u></p> <ul style="list-style-type: none"><li>- <u>extension of the BioMAT FIT program to continue supporting the development of dairy digester projects</u></li><li>- <u>ways to modify the BioMAT FIT program that would allow for changes in MW/year production for the purpose of giving projects the flexibility to move from electric generation to onsite vehicle fueling and/or pipeline injection</u></li></ul>

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**Deliverable #3: Pipeline injected Biomethane**

Recommendations that can increase pipeline injection of biomethane, including market development incentives, cluster identification, policy development, regulatory or legislative action, removing barriers, and support the SB 1383 pilot project process.

Issue	Discussion	Recommendation
A) The Low Carbon Fuel Standard (LCFS) provides substantial value for digester projects, and the perceived stability of credit prices is essential to project financing.	Since the group's formation, the LCFS has been statutorily protected by AB 398. Now the CARB Board is currently considering rulemaking for the 2020-30 period including <u>a carbon intensity reduction target of 20% by 2030</u> . Note: SB 1383 requires that CARB establish a pilot financial mechanism (PFM) to promote certainty and stability of credit prices.	CARB <u>to develop and propose a pilot financial mechanism (PFM) by the end of 2018. The legislature and State policymakers should ensure the PFM program is fully funded and implemented no later than January 1, 2020.</u>
B) Interconnection costs can be <u>a significant portion of total project costs, depending on size (biogas volume) of project and location to the nearest pipeline having capacity.</u>	CPUC 's Biomethane Interconnection Incentive Program ends in 2021. <u>This program based on AB 2313 provides a 50% reimbursement up to \$5M for dairy digester clusters (3 or more dairies) and up to \$3M for other biogas sources.</u>	CPUC should extend the program <u>from 2021 to 2030 and increase the funding cap from \$40M to NTE \$400M. CPUC should also put in place eligibility criteria and establish a transparent queue process to enable developers to be certain of funding.</u>  <u>Working group is supportive of legislation that would expand the use of ratepayer dollars for the development of interconnection infrastructure.</u>

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<p>C) Some dairies may not have access to a nearby utility pipeline <u>due to cost and/or location to a nearby pipeline having capacity.</u></p>	<p>There may be an attractive use case for moving <u>renewable gas</u> via tube trucks and delivering via “wet fueling” (remote sites). Such an approach may potentially provide a lower cost solution compared to interconnecting to the utility pipeline.</p>	<p><u>The CPUC should explore and address in their upcoming OIR the option for trucking of renewable gas in order to spur exploration of this approach.</u></p>
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**Deliverable #5: Identification of Value Added Products from Manure and Digestate**

Identification of key current and emerging technologies and approaches for converting manure and digestate into useful products including fuel/energy. The assessment will characterize products by technology readiness and outline general opportunities and issues.

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Issue	Discussion	Recommendation
<p>A) Investment is needed to identify and demonstrate emerging technologies that can convert manure and digestate into useful products including fuel/energy</p>	<p>CEC <u>has issued various grants</u> under the: 1) Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) and 2) California Energy Commission's Research and Development Program (EPIC and PIER funding) for low carbon fuels production facilities (both for commercial and for pilot/demonstration scale projects).</p> <p><u>Recently, annual ARFVTP funding for biofuel and biogas fuel production plants has been ~\$25M and R&amp;D funding has been ~\$4M. Starting July 1, 2018, ARFVTP funds will no longer be allocated for biofuel and biogas fuel production plants, but the FY 2018-19 state budget allocated \$12.5M from GGRF for these purposes (\$25M AFTVT funds being moved to support zero emission vehicles).</u></p> <p><u>A one-time FY 2017-18 allocation of \$66M for food processing plants (potentially including dairies) energy RD&amp;D projects has been augmented by \$68M in FY 2018-19 from GGRF.</u></p> <p><u>Programs that integrate digester deployment with future water restrictions will be important.</u></p>	<p><u>The legislature should allocate \$XM annually to expand research, demonstration and commercialization funding: 1) for process technologies and biomethane delivery alternatives capable of producing clean, low carbon renewable fuels from dairy manure, and 2) on approaches to integrate covered lagoon digesters and other solutions with nutrient export.</u></p>

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