



Policies to Encourage Dairy Biomethane Projects and Other Projects to Reduce Methane Emissions

California Air Resources Board

December 29, 2017

SB 1383 Policy Development Requirement

Under Senate Bill (SB) 1383 (Stats. 2016, ch. 395), the California Air Resources Board (Board or CARB), in consultation with the California Energy Commission (CEC) and California Public Utilities Commission (CPUC), must establish energy infrastructure development and procurement policies needed to encourage dairy biomethane projects to reduce methane emissions from livestock and dairy manure management operations by up to 40 percent below the sector's 2013 levels by 2030.

In recent years, CARB has continuously worked to establish policies that encourage dairy biomethane projects because dairy manure is a significant source of methane emissions in California. Dairy methane emissions can be reduced by digester projects that produce biomethane from the manure. Initial policies were established in CARB's [Short-Lived Climate Pollutant Reduction Strategy](#) (SLCP Strategy), adopted by the Board on March 23, 2017. Today, in collaboration with other State agencies and stakeholders, CARB is engaged in a multi-front effort to identify new and innovative methods for California to encourage biomethane and other projects to reduce methane emissions in the dairy and livestock industry.

A summary of CARB's existing policies adopted by the Board in the SLCP Strategy that meet the SB 1383 requirement is outlined below. Also below is a summary of each of the projects CARB is engaged in to further the development of targeted policies that would encourage dairy biomethane and other projects to meet SB 1383's methane reduction target.

Existing Policies to Encourage Dairy Biomethane Projects

The SLCP Strategy contains numerous policies to promote dairy biomethane and other renewable gas projects to reduce methane emissions. The list below is a sample of infrastructure and development policies from the SLCP Strategy:

- Support early action to build infrastructure capacity and reduce emissions through existing incentives and accelerated efforts to overcome barriers and foster markets. (*SLCP Strategy, page 7*)

- Work with stakeholders to foster market conditions that support private sector investment in expanded or new infrastructure, including building markets for compost, soil amendments, and low carbon transportation fuels; overcome barriers to pipeline injection of biomethane, grid connection for electricity, or another best-use alternative; and identify effective financing mechanisms and levels to reach the goals in the SLCP Strategy. (*SLCP Strategy, page 7*)
- Support and monitor research and explore voluntary, incentive-based approaches to reduce enteric fermentation emissions from dairy and non-dairy livestock operations until cost-effective and scientifically proven methods to reduce these emissions are available and regulatory actions can be evaluated. (*SLCP Strategy, page 7*)
- Prioritize fuels with the greatest greenhouse gas emissions benefits. (*SLCP Strategy, page 15*)
- Coordinate and utilize funding sources to expand investments in California and further reduce methane emissions, such as the Greenhouse Gas Reduction Fund (Cap-and-Trade Program auction proceeds), the Alternative and Renewable Fuel and Vehicle Technology Program (Assembly Bill 118), Electric Program Investment Charge Program, Carl Moyer Program, Air Quality Improvement Program, Public Interest Energy Research Natural Gas/Renewable Gas Program, and Proposition 39. (*SLCP Strategy, page 32*)
- Consider potential new funding mechanisms and incentive structures, including State procurement contracts for renewable natural gas. (*SLCP, page 33*)
- Continuously assess ways to improve the methane inventory by incorporating the latest scientific understanding of methane sources, performing coordinated research with other agencies, and using the best available activity data. (*SLCP Strategy, page 33*)
- Promote and encourage opportunities for industry innovation, the efficient use of existing infrastructure and facilities, and support the development of integrated systems across various sectors to handle, process, and reuse waste materials and captured methane. (*SLCP Strategy, page 61*)
- Work with industry and other stakeholders to support and accelerate new project development and activities to maximize methane emissions reduction at existing facilities. The State will also work with communities and regional stakeholders to plan and develop integrated infrastructure systems and markets to reduce wastes and associated emissions in the most environmentally sensitive manner. (*SLCP Strategy, page 61*)

Ongoing Projects That Support Dairy Biomethane Utilization

Presently, CARB is collaborating with the California Department of Food and Agriculture (CDFA), the California Department of Resources Recycling and Recovery, CEC, CPUC, and relevant stakeholders to implement various requirements of SB 1383. Some of these efforts are led by CARB and, in others, CARB is consulting with and providing support to other lead agencies.

Agencies and stakeholders expect these projects and collaborations to increase the shared knowledge of what successful dairy biomethane projects look like and what policies and actions incentivize successful projects and sustainable growth of the renewable gas industry. CARB and other agencies will use this knowledge to identify and develop targeted policies to promote dairy biomethane and other renewable gas projects to reduce methane emissions.

In particular, these projects and collaborations include the Dairy and Livestock Working Group; the development of the CEC's 2017 Integrated Energy Policy Report; guidance on credits generated pursuant to the Low Carbon Fuel Standard (LCFS) and the Cap-and-Trade Program from methane reduction protocols; CPUC's dairy biomethane pilot project rulemaking; the California Council on Science and Technology's (CCST) report on the biomethane pipeline standards; and a pilot financial mechanism to reduce the economic uncertainty associated with the value of environmental credits from dairy-related projects producing low-carbon transportation fuels. Each of these projects is summarized below. CARB will also work with other agencies and stakeholders to develop other projects and collaborations beyond these ongoing projects, as appropriate.

Dairy and Livestock Working Group

Along with CDFA, CEC, and CPUC, CARB is engaging with a broad range of stakeholders on a monthly basis to identify and address technical, market, regulatory, and other challenges and barriers to the development of dairy methane emissions reduction projects through the Dairy and Livestock Working Group, established pursuant to SB 1383. The work to identify and address these challenges and barriers is primarily done through the Dairy and Livestock Working Group's three subgroups: Fostering Markets for Digester Projects; Fostering Markets for Non-Digester Projects; and Research Needs.

The subgroups are composed of individuals from the dairy industry, public health organizations, environmental protection organizations, energy utilities, energy

production companies, relevant State agencies, community and environmental justice organizations, and other important stakeholders.

The Fostering Markets for Digester Projects Subgroup will identify and recommend, by the end of 2018, infrastructure policies, procurement policies, funding sources, and environmental policies to achieve a sustainable model for digester projects in the dairy and livestock industry.

The Fostering Markets for Non-Digester Projects Subgroup will identify and recommend methods to reduce dairy methane emissions using processes that do not involve anaerobic digestion. It will also work to develop markets for soil amendments and other products associated with non-digester alternatives to reduce methane at dairy facilities.

The Research Needs Subgroup will prepare a research plan to identify and fill in knowledge gaps in a number of areas, including dairy and livestock economics and enteric fermentation.

The recommendations and work products developed by the subgroups are expected to provide important information and insights into policies that will support and encourage dairy biomethane and other methane-reducing projects.

CEC 2017 Integrated Energy Policy Report

Also pursuant to SB 1383, CEC is developing, in consultation with CARB and CPUC, recommendations for the development and use of renewable gas, including biomethane and biogas. These recommendations will be part of CEC's 2017 Integrated Energy Policy Report, which is a report issued every two years that acts as a visionary, forward-thinking document that shapes State energy policy.

CPUC Dairy Biomethane Pilots

SB 1383 requires CPUC to direct gas corporations to implement no less than five dairy biomethane pilot projects to demonstrate interconnection to the common carrier pipeline system. The pipeline infrastructure costs for these pilot projects may be rate-based pursuant to SB 1383. CARB, along with CDFA, is consulting with CPUC on the development of CPUC's rulemaking for the selection and implementation of these pilot projects. CPUC adopted a decision in its rulemaking on December 14, 2017, and the solicitation for applications is expected to be released in early spring 2018, with applications due in the summer 2018. The pilot program rules ensure that the projects will not result in an increase of criteria pollutants or toxic air contaminant emissions in the air basins where the projects are located.

An interagency selection committee consisting of CARB, CDFA, and CPUC staff will choose the pilot projects. The program's data reporting requirements will generate information that allows the agencies to evaluate these projects.

CARB Guidance on Environmental Credits

Also pursuant to SB 1383, CARB is developing guidance on credits generated under LCFS and the dairy digester compliance offset protocol in the Cap-and-Trade Program. Dairy biomethane projects are currently eligible to generate LCFS credits or Cap-and-Trade compliance offsets, unless the project is required by law, regulation, or other legal mandate. The Legislature was concerned that, if CARB adopts regulations requiring the reduction of methane emissions from dairies and livestock operations after 2024, as authorized by SB 1383, dairy biomethane projects would be considered required by regulation and ineligible to generate LCFS credits and Cap-and-Trade Program compliance offsets, thereby inhibiting development of such projects prior to the adoption of regulations. The planned guidance will clarify that projects developed before the adoption of CARB dairy and livestock regulations are able to generate LCFS credits for at least 10 years and also be eligible for an extension to the extent allowed by the Cap-and-Trade Program and other CARB regulations.

CARB Pilot Financial Mechanism

SB 1383 requires CARB to develop a pilot financial mechanism to reduce the economic uncertainty associated with the value of environmental credits, including LCFS credits and offsets for the Cap-and-Trade Program, from dairy-related projects producing low-carbon transportation fuels. CARB is also required to make recommendations to the Legislature for expanding this mechanism to other sources of biogas. These recommendations are anticipated by summer 2018.

CCST Study of CPUC Biomethane Pipeline Standards

Pursuant to SB 840 (Stats. 2016, ch. 341), CCST, a non-profit research group, is developing a study that will analyze particular CPUC standards for injection of biomethane into the common carrier pipeline system in California (namely, the standards for minimum heating value and siloxane). This study is expected to be completed by June 2018. Some stakeholders believe existing standards are unduly strict, are expensive to comply with, and will require mixing of the biomethane with fossil fuels, ultimately increasing a project's greenhouse gas emissions. Within six months of the study's completion, CPUC must reevaluate its applicable requirements and standards and make any appropriate modifications.



Bioeconomy Summit

In the spring of 2018, CARB and UC Berkeley are planning to co-host a Bioeconomy Summit, which will characterize organic waste flows in California and consider strategies for redirecting those flows or taking advantage of synergies between the flows in ways that can produce valuable products while reducing greenhouse gas emissions and provide other co-benefits. The summit will consider all organic waste streams, including dairy manure, and will focus on strategies for efficiently co-processing multiple waste streams. Summit organizers and participants will prepare a summary document containing policy and research recommendations to State agencies.