



Air Resources Board



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TO: Carla Sanchez
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FROM: Cynthia Marvin, Chief
Transportation and Toxics Division

DATE: November 14, 2014

SUBJECT: GREENHOUSE GAS REDUCTION FUND: CALIFORNIA DEPARTMENT
OF FOOD AND AGRICULTURE EXPENDITURE RECORD FOR FISCAL
YEAR 2014-15

Thank you for submitting the final expenditure record (attached) on behalf of the California Department of Food and Agriculture (CDFA) on November 12, 2014 to satisfy the requirements of Senate Bill 1018 (Budget and Fiscal Review Committee, Chapter 39, Statutes of 2012) for expenditures from the Greenhouse Gas Reduction Fund (Fund). We appreciate the iterative consultation process with CDFA staff on the development of this record to support expenditures from the Fund for development and installation of dairy digesters in California and research methods to enhance economic feasibility.

This memorandum documents that Air Resources Board (ARB) staff concurred on November 12, 2014 that the attached record is consistent with the statutory requirements of Government Code Section 16428.9 and with ARB's expectations, as documented in the August 6, 2014 final ARB *Interim Guidance to Administering Agencies on Expenditure Record and Fiscal Procedures*.

The CDFA Expenditure Record for Fiscal Year 2014-15, along with this memorandum, will be published on the ARB Cap-and-Trade Auction Proceeds website at:
www.arb.ca.gov/auctionproceeds.

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.

California Environmental Protection Agency

Carla Sanchez
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If you have any questions concerning this memorandum, please call me at (916) 324-0062 or via email at Cynthia.Marvin@arb.ca.gov.

Attachment

cc: Kevin Masuhara
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Greenhouse Gas Reduction Fund: Expenditure Record

Fiscal Year: 2014-15

California Department of Food and Agriculture
Dairy Digester Research and Development Program
2014-15 Expenditure Record
to Expend \$12 Million in Greenhouse Gas Reduction Funds
Per Government Code 16428.9

Authorizing Legislation:

Item 8570-001-3228 of the Budget Act of 2014 (Chapter 25, Statutes of 2014) includes \$12,000,000 from the Greenhouse Gas Reduction Fund (GGRF) for the California Department of Food and Agriculture (CDFA) to provide financial assistance for the installation of dairy digesters in California which will result in reduced methane greenhouse gas emissions.

Agency: CDFA

Intended Recipient: California dairy farmers, dairy digester development and implementation businesses, the State University and University of California systems and non-profit organizations.

Project Category: Agricultural Energy Production and Achieving Operational Efficiency

Program Description: CDFA's program activities will support design and construction of new digester systems that result in reduced methane emissions and research projects to complete technical research needs identified.

Per Government Code §16428.9, prior to expending any moneys appropriated to it by the Legislature from the fund, a state agency shall prepare a record consisting of all of the following:

1) Description of each expenditure proposed to be made by the state agency pursuant to the appropriation.

The California Department of Food and Agriculture (CDFA) will administer all aspects of the Dairy Digester Research and Development Program, in coordination with the California Federal Dairy Digester Working Group (Working Group). The Working Group is a collaborative partnership between state, federal and local agencies and includes three subcommittees evaluating dairy digester economics, regulatory issues, and technologies. The goal of the Working Group is to facilitate wide-spread adoption of dairy digesters in California by identifying and removing regulatory and implementation barriers. In addition to government representatives, the subcommittees include stakeholders from academia, industry, non-profit organizations and utility suppliers.

Per Section 8570-001-3228 of the Budget Act of 2014 (Chapter 25, Statutes of 2014) the total amount of expenditure is \$12 million. The funds will be awarded on a competitive basis in two Phases. Phase I will provide \$11.1 million for digester development grants used to implement California dairy digesters that reduce methane emissions from dairy waste. Phase II will provide \$500,000 for research and demonstration grants focused on efforts to better understand the scientific and technical aspects of dairy digesters and methods to enhance their economic feasibility. \$400,000 will cover administrative costs for this program. The intended recipients of these funds are California dairy farmers, dairy digester development and implementation businesses, the State University and University of California systems (Phase II-only) and non-profit organizations.

This program falls under the project category of agricultural energy production and achieving operational efficiency. The types of projects that will be eligible for funding include design and construction of new digester systems that result in reduced methane emissions and research projects to complete technical research needs identified by the Working Group.

Program guidelines will be developed for the Phase I Dairy Digester Development and Phase II Research components in coordination with the Working Group. An overview of the guidelines for each Phase will be subject to public comment and feedback through several public meetings. The guidelines will inform the competitive grant process including the development and release of a competitive solicitation for proposals for each Phase followed by an evaluation and selection process. Selected applicants will enter into grant agreements with CDFR.

2) Description of how a proposed expenditure will further the regulatory purposes of Division 25.5 (commencing with Section 38500) of the Health and Safety Code, including, but not limited to, the limit established under Part 3 (commencing with Section 38550) and other applicable requirements of law.

AB 1532 requires that GGRF monies be appropriated in a manner that is consistent with the three-year Investment Plan. The 2013 “Cap-and-Trade Auction Proceeds Investment Plan” notes that it is important to target “expenditures (that) are critical to help California realize the transformational changes in energy generation and efficiency” as well as fund “projects to treat waste as a resource for low-carbon fuels.” The proposed expenditures will result in increased utilization of manure from dairy animal waste for energy generation and transportation fuels using biogas generated from anaerobic dairy digesters thereby avoiding the GHG emissions that would otherwise be released into the atmosphere.

The Investment Plan also established several goals including maximizing economic, environmental and public health benefits to the state, fostering job creation by promoting in-state GHG emission reduction projects carried out by California businesses, complementing efforts to improve air quality, providing opportunities for businesses, public agencies and non-profits to participate in reducing GHGs and

lessen the impacts and effects of climate change. The Dairy Digester Research and Development Program will create jobs for project planners, engineers and scientists who will need to work with landowners and farmers to implement digesters on dairy operations. The Program will at the same time reduce GHG emissions by capturing methane from dairy facilities and utilize the biogas to produce distributable renewable energy or fuel transportation. The capture of methane gas and utilization as an energy product will improve air quality through the reduction of hydrogen sulfide and ammonia emissions and the control of odors from manure. The solicitations for funding to build dairy digesters are aimed at dairy farmers, dairy digester development and implementation businesses, and non-profit organizations.

The Investment Plan identifies several eligible investment categories including Energy Efficiency and Clean Energy and Natural Resources and Waste Diversion. Agricultural management practices are recognized under the Natural Resources and Waste Diversion category as reducing GHG emissions through dairy digesters.

Appendix B of the Investment Plan also describes and recommends the types of projects that will be funded by expenditures under the Dairy Digester Research and Development Program. For example, as part of the Waste Diversion category, the Investment Plan notes that competitive grants should be provided to businesses to expand waste diversion including anaerobic digestion. The Investment Plan also identifies CDFA as an agency with existing research programs where research could be conducted to improve agricultural practices, improve water quality and provide other co-benefits. Therefore, the expenditures covered by this record are consistent with the Investment Plan and align with the priorities expressed in the Plan.

3) Description of how a proposed expenditure will contribute to achieving and maintaining greenhouse gas emission reductions pursuant to Division 25.5 (commencing with Section 38500) of the Health and Safety Code.

Dairy digesters will be used to capture methane from dairy animal waste and used to produce electricity or natural gas. Without a dairy digester methane would be released to the atmosphere. GHG emissions will be calculated before and after the installation of the dairy digester at each location. Emission reductions will be realized throughout the digester's life span, typically 20 to 30 years. Initial CDFA estimates on GHG emission reductions will commence in 2015-2016. Expenditures will go directly into incentivizing the design and implementation of dairy digesters in California which have been shown to effectively reduce methane while at the same time providing a co-benefit of renewable energy production.

4) Description of how the state agency considered the applicability and feasibility of other non-greenhouse gas reduction objectives of Division 25.5 (commencing with Section 38500) of the Health and Safety Code.

Dairy digesters will yield economic, environmental and public health co-benefits. Direct benefits from dairy digester implementation will result in improved air and

water quality. If closed-vessel digesters are used there may be decreased nitrate leaching to groundwater. Digester deployment will also result in the reduction of odors from a dairy and reductions in the discharge of pathogens. Dairy digesters also have the potential to improve nutrient management through application of digestate, which has a more stable form of nitrogen, as compared to spreading raw manure. This is a water quality benefit as nitrate leaching to groundwater is reduced. This construction and development of dairy digesters in California will also promote and create technical and non-technical jobs.

Many co-benefits of dairy digesters are well recognized including creating a more stable form of organic nitrogen fertilizer (e.g., remaining substance or digestate after energy production), reducing odor from dairy lagoons and effectively managing and using an agricultural animal waste product to create renewable energy. Depending on the type of digestion and energy production system, additional co-benefits will be realized including producing animal bedding and potting soil amendments¹.

It is likely that some of the projects will be located in communities that are identified as “disadvantaged” by California Environmental Protection Agency (CalEPA). The solicitation for the dairy digester development program will require applicants to provide the location of their project(s) to identify those that may provide a benefit to a CalEPA-identified disadvantaged community.

This expenditure will demonstrate that dairy digesters are an effective way to reduce methane emissions from the dairy sector, and will contribute to other AB 32 objectives such as improving and modernizing California’s energy sector and maximizing additional environmental and economic co-benefits for California, including air and water quality benefits and the potential for new businesses or products that market digestate as commercial fertilizer or soil amendment or other products.

¹ US Environmental Protection Agency. Agstar. Sep 2011.

5) Description of how the state agency will document the result achieved from the expenditure to comply with Division 25.5 (commencing with Section 35800) of the Health and Safety Code.

CDFA will calculate the net GHG reductions from dairy digester projects using an ARB-approved methodology. One potential method available is the Compliance Offset Protocol for Livestock Projects: Capturing and Destroying Methane from Manure Management Systems,”

<http://www.arb.ca.gov/regact/2010/capandtrade10/coplivestockfin.pdf>

To determine job creation benefits, CDFA will require recipients to submit information on labor costs and needs as part of a proposal budget, including number of job-years provided, average wages and benefits.

CDFA will work with ARB and the Working Group to develop methods for documenting and reporting the co-benefits of the projects.

Other information and data collected will include project location, type of dairy digester installed, previous manure management practices, estimated efficiency and energy produced, expected project life, GHG reductions and other quantitative and qualitative data as specified in ARB’s guidelines.

CDFA will provide regular updates on expenditures, quantified GHG reduction data, project status and benefits in reports prepared according to ARB guidelines. At a minimum, the reports will include expenditure amounts, current estimates of GHG emission reductions and quantification of other applicable co-benefits (e.g., jobs created, etc.).