CALIFORNIA DEPARTMENT OF
FOOD & AGRICULTURE
Karen Ross, Secretary

TO: Greenhouse Gas Reduction Fund Program

FROM: Karen Ross
Secretary
California Department of Food and Agriculture (CDFA)

Tawny Mata, Ph.D.
Director
Office of Environmental Farming and Innovation (OEFI)

DATE: 07/05/2023

SUBJECT: GREENHOUSE GAS REDUCTION FUND: CDFA

EXPENDITURE RECORD [FOR FISCAL YEAR 2022-23]:
Livestock Enteric Methane Emission Reduction Research Program (LEMER-RP)

This Attestation Memorandum documents that CDFA completed the attached Expenditure Record on July 5, 2023, for LEMER-RP. The Expenditure Record is consistent with the statutory requirements of Government Code Section 16428.9 to support expenditures from the Greenhouse Gas Reduction Fund.

This Attestation Memorandum and Expenditure Record will be submitted to CARB for public posting on the CARB website at: www.arb.ca.gov/caclimateinvestments. Questions on this Attestation Memorandum or Expenditure Record may be directed to Tawny Mata, Director, OEFI at Tawny.Mata@cdfa.ca.gov or (916) 205-3624.

Yours truly,

Karen Ross

Karen Ross
Secretary

Attachment: Expenditure Record for the LEMER-RP

cc: Roberta B Franco, Ph.D.
Supervising Senior Environmental Scientist, LEMER-RP

Greenhouse Gas Reduction Fund: Expenditure Record

California Department of Food and Agriculture
Livestock Enteric Methane Emission Reduction - Research Program

Authorizing legislation: Item 8570-102-3228 of the Budget Act of 2022, as amended by Assembly Bill (AB) 179 (Ting, Chapter 249), appropriates to CDFA $10 million for the Livestock Enteric Methane Emission Reduction - Research Program.

Element (1) A description of each expenditure proposed to be made by the administering agency pursuant to the appropriation.

Agency that will administer funding	▪ California Department of Food and Agriculture (CDFA)
Amount of proposed expenditure and appropriation reference	▪ The total expenditure is $10 million, appropriated by the FY 2022-23 Budget, as amended by AB 179 (Ting, Budget Act of 2022, Chapter 249, Section 2), Item 8570-102-3228, to the Department of Food and Agriculture (CDFA) for the Livestock Enteric Methane Emission Reduction - Research Program (LEMER-RP) from the Greenhouse Gas Reduction Fund. ▪ CDFA will provide financial support for research that will support dairy and livestock sectors for demonstration projects, to supplement feed with additives or ingredients that have scientifically demonstrated efficacy in reducing methane emissions, and research dietary modifications that are intended to reduce methane emissions from livestock. In 2020, dairy and livestock were responsible for the emission of approximately 11 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) per year, or 35% of the greenhouse gases (GHG) coming from the agriculture and forestry sector. The knowledge learned from the funded research will lead to a reduction of methane, a greenhouse gas (GHG) many times more potent than carbon dioxide. The program is proposing to distribute the funds in a one-time grant solicitation of $10 million.
Estimated amount of expenditures for administering agency administrative costs	▪ Not more than 5 percent ($500,000) of the amount appropriated in Item 8570-102-3228 may be used for administrative costs of the LEMER-RP.

If applicable, identify laws or regulations that govern how funds will be used	▪ AB 1532 (Pérez, Chapter 807, Statutes of 2012), SB 535 (de León, Chapter 830, Statutes of 2012), SB 1018 (Budget and Fiscal Review Committee, Chapter 39, Statutes of 2012), and SB 862 (Committee on Budget and Fiscal Review, Chapter 36, Statutes of 2014), and AB 1550 (Gomez, Chapter 369, Statutes of 2016), AB 1013 (Obernolte, Chapter 48, Statutes of 2019) provide the general framework for how the auction proceeds will be administered to further the purposes of AB 32 (Núñez, Chapter 488, Statutes of 2006). ▪ The Budget Act of 2022 (AB 179) funds this program and provides direction on how it is to be used: research focus with demonstration trials that will support the dairy and livestock sectors for feed additives or dietary strategies that reduce enteric methane emissions. ▪ All funds will be allocated and managed in accordance with these laws.
Continuation of existing Expenditure Record	▪ This is a new Expenditure Record. The Expenditure Record elements include the total amount of funds available for funding research projects under the LEMER-RP.
Project type(s)	▪ Climate Change Research
Describe the projects and/or measures that will be eligible for funding	▪ The LEMER-RP provides grants to research projects focused on reducing methane emissions from enteric fermentation from dairy and livestock in California, through the supplementation of feed with additives or ingredients that have scientifically demonstrated efficacy in reducing methane emissions, and research dietary modifications that are intended to reduce methane emissions from livestock.
Intended recipients	▪ University of California, ▪ California State University, ▪ Non-profit colleges and universities, ▪ Non-profit research organizations, and ▪ California Native American Tribes.
Program structure and process for selecting projects for funding	▪ The LEMER-RP will provide $10 million through a competitive solicitation, evaluation, and selection of projects according to the program's solicitation guidelines for this cycle of funding.

Element (2)	**A 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.**

How the expenditure is consistent with the Investment Plan and the Scoping Plan

- AB 1532 (Chapter 807, Statutes of 2012) requires that monies from the Fund be appropriated in a manner that is consistent with the three-year Investment Plan. The "Cap-and-Trade Auction Proceeds Fourth Investment Plan: Fiscal Years 2022-23 through 2024-25" recommends support for projects for reducing short-lived climate pollutants (SLCPs), waste diversion, and sustainable agricultural practices, including investment in the Livestock sector towards alternative manure management, anaerobic digestion, and pilot efforts to reduce livestock enteric fermentation emissions. Therefore, the expenditures covered by this record are consistent with the Investment Plan and align with the priorities expressed in the Plan.
- California's 2017 Climate Change Scoping Plan Update identifies policies based on solid science and identifies additional research needs, while also recognizing the need for flexibility in the face of a changing climate. Ongoing research to better understand systems, where our knowledge is weaker, will allow for additional opportunities to set targets and identify actionable policies.
- California is committed to further supporting new research on ways to mitigate climate change and how to understand its ongoing and projected impacts.
- California's continuing efforts are vital steps toward minimizing the impact of GHG emissions and a three-pronged approach of reducing emissions, preparing for impacts, and conducting cutting-edge research can serve as a model for action.
- California's 2022 Climate Change Scoping Plan identified a variety of strategies for achieving success to address dairy and livestock methane reduction, including installing anaerobic digesters, increasing alternative manure management projects, implementing enteric fermentation strategies, and accelerating demand for dairy and livestock product substitutes. These projects will provide knowledge and means for reducing GHG emissions and achieve the goals and purposes of AB 32 and SB 1383, to reduce methane to 40 percent below 2013 levels by 2030 from California's dairy and livestock sector.

Element (3) A 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.

Describe how expenditures will facilitate the achievement of GHG emission reductions in the State	▪ Project expenditures will help California reach its GHG emission reduction goals by focusing on cross-cutting research investments in an area that is not well studied or understood. A large percentage of GHG emissions at dairy and livestock operations are the result of enteric methane production from dairy cows and all ruminant animals. Enteric fermentation involves the breakdown of complex carbohydrates by microorganisms, which results in the production of methane gas as a byproduct. This methane is released through the animal's digestive system and into the atmosphere. The release of methane is a natural process and is part of the normal digestive process of ruminants. However, it is also a potent greenhouse gas and contributes to global warming. The enteric methane from dairy and livestock animals was responsible for the emission of approximately 11 million metric tons of carbon dioxide equivalent ($MMTCO_2e$) per year, or 35% of the greenhouse gases (GHG) coming from the agriculture and forestry sector in 2020. Therefore, the knowledge learned from the funded research will lead to a reduction of methane, a greenhouse gas (GHG) many times more potent than carbon dioxide.
Explain when GHG emission reductions and/or co-benefits are expected to occur and how they will be maintained	▪ GHG emission reductions and knowledge obtained from LEMER-RP projects funded by this appropriation are expected to commence in 2024-25 and are expected to conclude in 2028. ▪ Expenditures in research projects will incentivize the exploration of knowledge on how to reduce methane emissions from enteric fermentation in animals across various locations and production systems in California. The insights gained from these projects will have a lasting impact and inform future research efforts in this field. Furthermore, these findings will enable California to develop effective incentive programs and policies that prioritize reducing methane emissions without compromising the well-being, safety, and health of animals and humans. The knowledge obtained from these research projects will be influential for years to come and will contribute to the development of sustainable animal production systems.

Element (4) A description of how the administering 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.

Expected co-benefits, particularly environmental, economic, public health and safety, and climate resiliency	▪ Funding research projects on how to reduce methane emissions can contribute to mitigating the effects of climate change, improving the efficiency of animal production systems, and reducing costs associated with feed and other inputs. Additionally, this knowledge on how to reduce methane emissions can help to improve air quality, protect public health, and build climate resiliency. These co-benefits are particularly important for California, which is extremely vulnerable to the impacts of climate change, including droughts and wildfires. These projects will also leverage existing research funding and policy innovations to accelerate climate change research, innovation, and policy and technology deployment.
How the project will support other objectives of AB 32 and related statutes	▪ Funded research projects will support AB 32 objectives through diverse avenues, such as maximizing additional environmental and economic co-benefits for California, complementing the State's efforts to improve air quality, and providing opportunities for businesses, schools, and community institutions to participate in and benefit from statewide efforts to reduce GHG emissions. ▪ HSC §38590.1 Identifies legislative priorities for allocating action revenue proceeds, which include climate adaptation and resiliency, and climate and clean energy research (AB 398. 2017, Garcia). ▪ Projects also complement AB 398 priorities towards reducing short-lived climate pollutants and sustainable agricultural practices that promote transitions to clean technology, water efficiency, and improved air quality.
Percentage of total funding that will be expended for projects that are located in and benefit priority populations[1] per CARB guidance	▪ The administering agency has not established a specific target to expend funds received under this appropriation to fund projects that are located in and providing benefits to AB 1550 populations ▪ This cycle of the program does include a threshold requirement to discuss how the research will benefit low-income or disadvantaged communities and will prioritize those that provide these benefits.
Describe the benefits to priority populations per CARB guidance	▪ Projects that provide benefits to priority populations will be prioritized during the selection of the projects.

[1] Priority populations include residents of: (1) census tracts identified as disadvantaged by California Environmental Protection Agency per SB 535; (2) census tracts identified as low-income per AB 1550; or (3) a low-income household per AB 1550. See Section VII.B for more information on the definitions of priority populations.

Explain strategies the administering agency will use to maximize benefits to disadvantaged communities	▪ CDFA will prioritize projects that meet the criteria for providing benefits to priority populations and demonstrate that the project will meaningfully address an important community need. This will help maximize benefits and support administering agency efforts to meet or exceed statutory requirements for expenditures that benefit disadvantaged communities.
Explain how the administering agency will avoid potential substantial burdens to disadvantaged communities and low-income communities or, if unknown, explain the process for identifying and avoiding potential substantial burdens	▪ Environmental benefits of proposed projects are evaluated by members of the LEMER-RP Technical Review Panel, including subject matter experts from State agencies. Projects providing multiple environmental benefits will be prioritized and are more competitive. While not required, applicants that demonstrate community engagement and outreach efforts during the planning of their project will be prioritized.

Element (5) A description of how the administering 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.

How the administering agency will track / report progress to make sure projects are implemented per requirements in statute and CARB guidance	▪ CDFA will track project progress for LEMER-RP research projects through the evaluation of invoices, progress reports, and supporting documentation. ▪ A verification evaluation accompanied by photographs to ensure the project was completed and installed according to the approved grant agreement is required, as well as the submission of quarterly reports and a final report containing all the study findings. ▪ In addition, the administering agency will conduct periodic reviews of selected projects. If a funding recipient does not perform in accordance with program requirements, the recipient will be subject to the remedies for non-performance, as identified in the administering agency's guidelines.
Describe the approach that will be used to document GHG emission reductions and/or other benefits before and after project completion	▪ The administering agency will coordinate with CARB to determine how to document GHG emission reductions or co-benefits through qualitative metrics. Administering agency staff will review metrics prepared by project proponents to ensure consistency with methods identified in CARB 2018 guidance.
Type of information that will be collected to document results, consistent with CARB guidance	▪ The administering agency will collect information on project outcomes for all of the projects, consistent with CARB guidance. Specific metrics for each project will be developed that align with the guiding investment principles described in the 2018 California Climate Investments Funding Guidelines document.
How the administering agency will report on program status	▪ CDFA will provide regular updates on expenditures, project status, and benefits in reports prepared according to CARB guidance. At a minimum, the reports will include expenditure amounts, quantification of applicable co-benefits, and other metrics yet to be determined. Reports will also include information on how research outcomes for these projects have been linked to practical climate action and policies, as well as the applicability of the knowledge gained over a period yet to be determined.