



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)

Carolyn Cook, M.S.  
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Office of Environmental Farming and Innovation (OEFI)

DATE: 7/10/2024

SUBJECT: GREENHOUSE GAS REDUCTION FUND: CDFA

EXPENDITURE RECORD [FOR FISCAL YEAR 2024-25]:  
Alternative Manure Management Program (AMMP) and Dairy  
Digester Research and Development Program (DDRDP)

This Attestation Memorandum documents that CDFA completed the attached Expenditure Record on July 10, 2024 for AMMP and DDRDP. 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](http://www.arb.ca.gov/caclimateinvestments). Questions on this Attestation Memorandum or Expenditure Record may be directed to Carolyn Cook, Manager of Incentive and Technical Assistance Programs, OEFI at [carolyn.cook@cdfa.ca.gov](mailto:carolyn.cook@cdfa.ca.gov) or (209) 601-9439.

Attachment: Expenditure Record for the AMMP and DDRDP

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Supervising Senior Environmental Scientist, AMMP and DDRDP

Karen Ross  
Secretary



**Greenhouse Gas Reduction Fund: Expenditure Record**

2024-25

California Department of Food and Agriculture (CDFA)  
Dairy Digester Research and Development Program (DDRDP) and Alternative Manure  
Management Program (AMMP)

**Authorizing legislation:** Item 8570-101-3228 of Assembly Bill (AB) 107 (Budget Act of 2024), as amended by June 26, 2024 (Chapter 22, Section 2.00) appropriates to CDFA \$17 million for dairy digester research and development and alternative manure management.

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

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**Agency that will administer funding**

- California Department of Food and Agriculture (CDFA)

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**Amount of proposed expenditure and appropriation reference**

- AB 107, (Gabriel, Budget Act of 2024, Chapter 22, Section 2.00), Item 8570-101-3228, appropriates \$17,000,000 to the Department of Food and Agriculture (CDFA) from the Greenhouse Gas Reduction Fund, for dairy digester research and development, and alternative manure management.
- CDFA will utilize its existing Dairy Digester Research and Development Program (DDRDP) to provide financial incentives for the implementation of digester systems on dairy operations which will capture methane, a greenhouse gas (GHG) many times more potent than carbon dioxide and use the gas to generate renewable energy or fuels.
- CDFA will also utilize its existing Alternative Manure Management Program (AMMP) to incentivize non-digester related manure management practices on dairy and livestock operations that reduce methane emissions.

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**Estimated amount of expenditures for administering agency administrative costs**

- AB 107 (Gabriel, Budget Act of 2024, Chapter 22, Section 2.00), Item 8570-101-3228 not more than 5 percent of the amount appropriated in this item may be used for administrative costs.

***If applicable, identify laws or regulations that govern how funds will be used***

- AB 107 (Gabriel, Budget Act of 2024, Chapter 22, Section 2.00), Item 8570-101-3228 appropriated CDFA \$17,000,000 for dairy digester research and development, and alternative manure management.
- AB 1532 (Pérez, Chapter 807, Statutes of 2012), Senate Bill (SB) 535 (de León, Chapter 830, Statutes of 2012), SB 1018 (Budget and Fiscal Review Committee, Chapter 39, Statutes of 2012), SB 862 (Committee on Budget and Fiscal Review, Chapter 36, Statutes of 2014), and SB 859 (Committee on Budget and Fiscal Review, Chapter 368, Statutes of 2016) 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).
- AB 2377 (Irwin, Chapter 868 Statutes of 2018) requires CDFA to develop and implement a technical assistance grant program to assist the applicants of AMMP in application submission and project implementation. It also requires that at least 25 percent of the technical assistance grant program funds will be used to provide technical assistance to socially disadvantaged farmers or ranchers, as defined in Section 512 of the Food and Agriculture Code.

***Continuation of existing Expenditure Record***

- This appropriation will support the DDRDP and AMMP. It will fund the same types of projects that have been previously funded by Expenditure Record as set in the Budget Act of 2019 (Chapter 23 and 55, Stats. 2019), under the updated Quantification Methodology for the AMMP, DDRDP and their accompanying Benefits Calculator Tools.
- This appropriation may support the Climate Smart Agriculture Technical Assistance (CSA TA) Grant Program for AMMP.

***Project type(s)***

- Digesters and alternative manure management systems

***Describe the projects and/or measures that will be eligible for funding***

- The DDRDP provides financial incentives to commercial dairy operations to implement projects that design and construct new digester systems to reduce methane emissions. Retrofitting of defunct digester systems is also allowed under limited circumstances.
- The AMMP provides financial incentives to commercial dairy and livestock operations for projects implementing non-digester practices to reduce or avoid methane emissions from manure management.

- The CSA TA grant program will help provide technical assistance to AMMP applicants during the submission of applications and implementation of projects.

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***Intended recipients***

- DDRDP: Dairy operations, dairy digester developers, and partnerships between these and other entities.
- AMMP: California commercial dairy and livestock operations. Technical Assistance Program: Eligible recipients of this program include Resources Conservation Districts (RCDs), the University of California Cooperative Extension, and non-profit organizations with demonstrated expertise in designing and implementing alternative manure management practices.

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***Program structure and process for selecting projects for funding***

- The DDRDP will fund competitive grants to dairy operations to capture and reduce methane emissions and produce renewable energy. Review criteria include estimated GHG emissions reductions, evaluation of project technology, financial soundness and budget, community outreach, criteria pollutants, and shovel-readiness. Consideration of environmental co-benefits and benefits to disadvantaged communities.
- The AMMP will fund competitive incentive project grants to reduce methane emissions. Applicants will be scored on the ability to utilize strategies to reduce GHGs. Review criteria include estimated GHG emissions reductions, evaluation of a project plan, financial soundness and budget, shovel-readiness, and consideration of environmental co-benefits to disadvantaged communities.
- The CSA TA Program will fund competitive grant applications, that scored on the thoroughness of a work plan and budget, demonstrated expertise of the applicant in specific management practices to assist dairy and livestock producers, and demonstrated need for technical assistance in their region.

**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.**

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***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 2022 Climate Change Scoping Plan identified a variety of strategies for achieving success in addressing dairy and livestock methane emission 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 continue reducing GHG emissions and achieve the goals and purposes of AB 32 and SB 1383, to reduce methane emissions by 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.**

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***Describe how expenditures will facilitate the achievement of GHG emission reductions in the State***

- A large percentage of GHG emissions at dairy and livestock operations are the result of animal manure stored under anaerobic (oxygen-lacking) conditions, which produces methane. Methane produced from anaerobic manure storage, such as flush water lagoons, contributes approximately 25 percent of all methane emissions in California. The proposed program funded through DDRDP will reduce methane emissions from dairies by installing anaerobic digester systems, which capture the methane gas and use it to generate renewable energy or fuels. GHG emission reductions from the installation of a dairy digester through DDRDP and its demonstration will be calculated with reference to the baseline scenario where methane gas would be released uncontrolled into the atmosphere. Emission reductions will be realized throughout the digester's life span, typically 10 to 30 years.
- Non-digester management practices funded through the AMMP will reduce methane emissions from the manure management process by (i) managing the manure in aerobic (dry) rather than anaerobic (wet) conditions, thereby favoring the decomposition of organic matter to carbon dioxide rather than methane and reducing net GHG emissions, or (ii) reducing the amount of manure volatile solids stored under wet conditions, or (iii) a combination of the above. Non-digester manure management strategies include but are not limited to scrape conversion and solid separation followed by open-solar drying and composting of manure solids onsite; conversion to pasture-based management; and alternative manure treatment and storage such as compost bedded pack barns. GHG emissions reductions from the adoption of AMMP practices will be calculated against the baseline scenario of methane being released uncontrolled into the atmosphere. Emissions reductions will be realized throughout the project life span of at least 5 years following implementation, although this is expected to vary for the different practices.
- CSA TA programs will help increase the adoption of AMMP practices through outreach, application submission assistance, and project implementation assistance, complementing GHG reductions achieved by AMMP described above.

***Explain when GHG emission reductions and/or co-benefits are expected to occur and how they will be maintained***

- GHG emission reductions from DDRDP and AMMP are estimated to commence in 2026-27. Co-benefits may include a reduction in criteria and toxic air pollutant emissions, improved soil health such as compost production, and odor reduction.
  - Expenditures will directly incentivize the design and construction of dairy digester systems in California which have been shown to effectively reduce methane emissions while at the same time producing renewable energy. This project's life for the purposes of quantifying GHG emission reductions is 10 years. GHG reductions are expected to continue for the life of the digester, typically 10 to 30 years. Co-benefits from the demonstration projects include the evaluation of commercial potential and the evaluation of new technologies.
  - Expenditures will incentivize the design and construction of non-digester systems in CA which have been shown to reduce methane emissions by minimizing the anaerobic management of manure. Once these systems are operational, it is expected that the GHG emission reductions will continue for a quantification period of 5 years. However, with proper maintenance, the full life of projects is anticipated to be 5-10 or more years, during which benefits would still occur.
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**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***

- Dairy digesters will yield economic, environmental, and public health co-benefits. The DDRDP requires all projects to have double-lined manure lagoons, which is the highest regulatory standard in the state to reduce and eliminate nitrate leaching from the lagoons to groundwater systems. Covering open lagoons or transferring manure to an enclosed digester tank will also result in the reduction of odors and of volatile organic compound (VOC), ammonia, and hydrogen sulfide (H<sub>2</sub>S) emissions from uncovered dairy manure lagoons. It will likewise achieve reductions in the discharge of pathogens. Dairy digesters also have the potential to improve nutrient management for crop production through application of the digestate, which has a more stable form of nitrogen compared to solid manure or lagoon water as a nutrient source for crops. Additional economic co-benefits may include producing animal bedding and other marketable products for commercial and home and garden use (e.g., soil amendments).<sup>1</sup> The construction, development, and management of dairy digesters in California promote and create technical and non-technical jobs.
- The DDRDP requires all applicants, regardless of location in California, to meet the strict air quality standards established by the San Joaquin Valley Air Pollution Control District for NO<sub>x</sub>, the highest standards in the country.
- Potential air and water quality benefits of AMMP projects will be evaluated by CDFA prior to implementation of the incentives program. Potential benefits such as the creation of construction-related jobs are anticipated. Eliminating open lagoons or transferring manure to dry-managed systems may result in the reduction of odors, volatile organic compounds (VOCs), ammonia, and hydrogen sulfide (H<sub>2</sub>S) emissions from uncovered wet lagoons. Additional economic benefits may include producing beneficial by-products for animals' bedding and soil amendments (e.g., compost).

***How the project will support other objectives of AB 32 and related statutes***

- With DDRDP projects implementation, there is an improvement and modernization of California's energy infrastructure through investment in renewable energy production.
- Maximize additional environmental and economic co-benefits for California.



- Provide an opportunity for small businesses to participate in statewide efforts to reduce GHG emissions.
- Implementation of AMMP projects will provide GHG emission reduction solutions for dairy and livestock operators beyond digesters. Digesters may not be economically feasible or contribute to potential economic benefits for all dairies, and AMMP will provide alternative approaches that can be adopted.
- 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.

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***Percentage of total funding that will be expended for projects that are located in and benefit priority populations<sup>1</sup> per CARB guidance***

- The 2018 Funding Guidelines do not include a minimum target defined for CDFA to locate projects within and provide benefits to AB 1550 populations, but some projects may meet the criteria for providing benefits.
- Applications submitted to DDRDP shall be screened to ensure that projects that result in potential adverse impacts shall not receive funding unless adequate mitigation measures are taken. Potential adverse impacts include a net increase in criteria pollutants, toxic air contaminants and hazardous air pollutants, groundwater and surface water impacts, truck traffic, and odor. Additionally, any project that results in localized impacts in disadvantaged communities shall not be considered to provide a benefit to disadvantaged communities for the purposes of Section 39713 of the Health and Safety Code.

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***Describe the benefits to priority populations per CARB guidance***

- Consistent with the evaluation criteria in the Funding Guidelines, projects may benefit disadvantaged communities through reducing odor-causing pollutants (such as hydrogen sulfide or ammonia) or on-site criteria air pollutant or toxic air contaminant emissions, providing access to employment or job-training opportunities, among other benefits.
- Projects that provide benefits to priority populations will receive additional points during review and scoring.

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<sup>1</sup> 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.
  - To help maximize benefits to disadvantaged communities, and increase participation and accessibility, CDFA will coordinate with local and regional entities to host workshops during the application process and for AMMP, offer free-of-charge technical assistance for project application and implementation.
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***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 DDRDP and AMMP Technical Advisory Committees, including subject matter experts from State and Federal agencies. Projects providing multiple environmental benefits receive a higher score during review and are more competitive.
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**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.**

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***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 DDRDP and AMMP incentives through quarterly reporting and invoicing, accompanied by supporting documentation.
- A verification evaluation accompanied by photographs to ensure the project was completed and installed according to the approved grant agreement. A final project report is also required for DDRDP.

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***Describe the approach that will be used to document GHG emission reductions and/or other benefits before and after project completion***

- CDFA will require incentive program applicants to calculate the net GHG emission reductions and co-benefits using the most recent version of the CARB's approved Benefits Calculator Tool and quantification methodology. For DDRDP and AMMP, the methodology is based on the CARB Compliance Offset Protocol for Livestock Projects.
- CDFA will utilize the technical expertise of State and Federal experts and research scientists at several of the University of California and California State Universities to provide technical review of the GHG reduction estimates in the applications for DDRDP and AMMP. CDFA will ensure the systems are operational with a verification component post-project completion. The technical review of GHG reduction values coupled with the verification component will ensure all projects achieve GHG reductions.

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***Type of information that will be collected to document results, consistent with CARB guidance***

- To determine the job creation benefits, CDFA will compile data from the CARB Jobs Modeling tool or funding recipients on jobs provided, both in the quality and quantity consistent with CARB guidance, including but not limited to the number of job provided, average wages and benefits, the number of people who completed job training or received industry-recognized certifications, and residence location of job/training recipients.
- The administering agency will collect data such as project location, planned workshops, and outreach efforts, consistent with CARB guidance.
- Once operational, CDFA will collect data on project location and GHG reduction estimates on 10 percent of projects, 5 years of post-project GHG reductions, and other data as specified in CARB's Funding Guidelines.

***How the  
administering  
agency will report  
on program status***

- CDFA will report to CARB consistent with CARB guidance. CDFA will provide regular updates on the program, including expenditure amounts, project status, GHG emission reductions, and other benefits, as applicable, in reports prepared according to CARB's Funding Guidelines. Reports will also include information on project outcomes for, at a minimum, 10 percent of projects over 3 years.
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