



California Department of Food and Agriculture

Methane Reduction and Renewable Fuels: An Agriculture Perspective

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Biofuels and Bioproducts from Wet and Gaseous Feedstocks: Market Barriers and Opportunities Workshop

June 6, 2017

Berkeley, CA

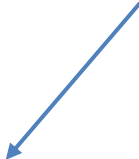
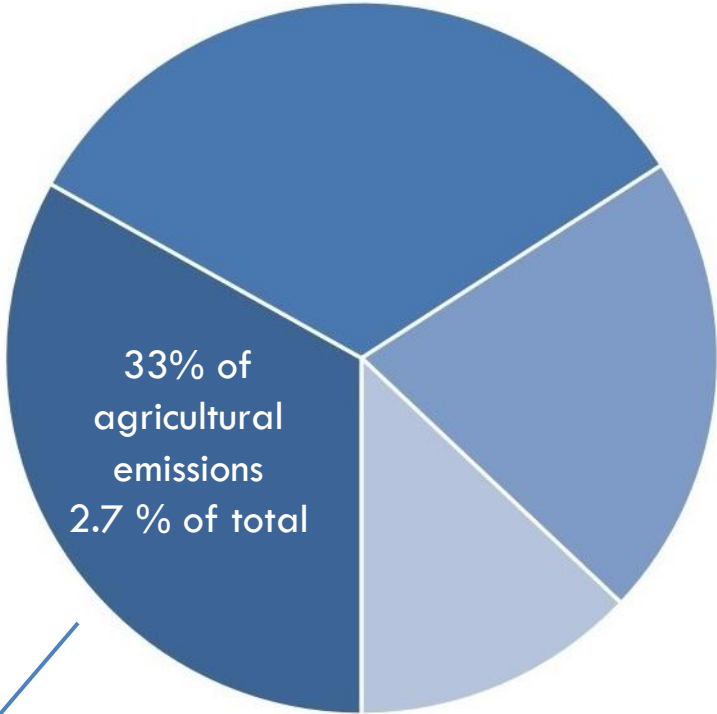
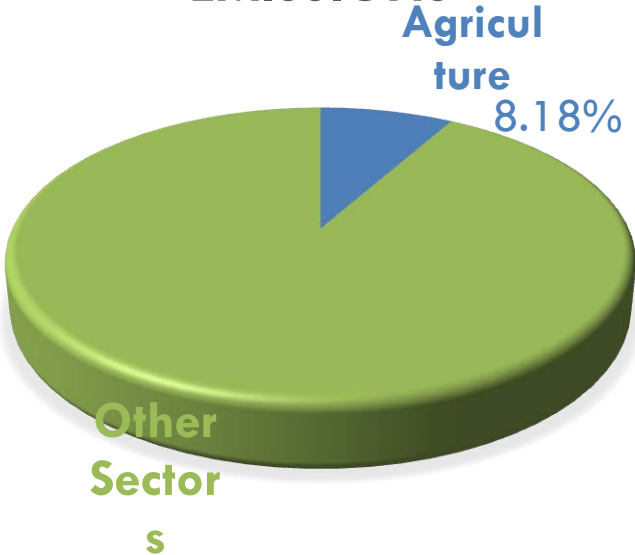
OUTLINE

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- California GHG emissions.
- Legislative updates and background: 2016-17.
- Funds allocation for methane emissions reduction.
- Dairy Digester Research and Development Program.
 - ▣ Program framework and timeline.
- Additional efforts and inter-agency coordination.

CALIFORNIA GHG EMISSIONS BY SECTOR

TOTAL CALIFORNIA GHG EMISSIONS



- Manure Management
- Enteric Fermentation
- Crop Growing and Harvesting
- General Fuel Use

LEGISLATIVE UPDATES & BACKGROUND: 2016-17

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- SB 1383 (Lara) Short Lived Climate Pollutants - ARB to develop comprehensive strategy no later than Jan. 1, 2018
 - ▣ Target: to reduce dairy methane emissions by 40% of 2013 levels by 2030
 - ▣ ARB, in consultation with CDFA, to adopt regulations to reduce methane emissions from livestock manure management operations and dairy manure management operations; to take effect on or after January 1, 2024.
- AB 1613
 - ▣ \$50 million for methane emission reductions from dairy & livestock operations, to be encumbered by June 2018 and expended/liquidated by June 2020.
- SB 859, Section 2 and 6
 - ▣ Management practices and criteria air pollutants.

DAIRY DIGESTERS IN CALIFORNIA

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- Historically, few digesters for the state with largest dairy livestock population.
- California/Federal Dairy Digester Working Group (2011-13).
- Goal: To identify and remove barriers to the wide spread adoption of dairy digester systems in California.
- Barriers to development included: expensive, uncertain and complex interconnection and permitting obstacles, high financing risk and costs, among others.
- Recommendations included: consolidated permitting process; dedicated funding mechanisms; protection of environmental quality; research on co-benefits of dairy digesters.



DAIRY DIGESTER RESEARCH AND DEVELOPMENT PROGRAM (DDRDP)

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- Established in 2014-15.
- Authorized by the Budget Act of 2014 (Chapter 25, Statutes of 2014). CDFA received \$12 million from the Greenhouse Gas Reduction Fund to support projects that reduce greenhouse gas (GHG) emissions from California dairy operations by capturing GHGs, harnessing GHGs as a renewable bioenergy source and promoting low carbon fuels.
- CDFA funded 6 projects, funded \$11.1 million total; \$28 million in matching funds by recipients.
- Projects to generate renewable electricity (approx. 40 million kWh per year)
- Total GHG emissions reduction estimated at 1.56 MTCO₂e over 10 years. Annually:
 - 0.04% of the total GHG emissions in California.
 - 1.3% of GHG emissions from dairy manure management.
- Funded a research project (\$225,000) titled “Converting Manure to Reduce Greenhouse Gas Emissions, Minimize Environmental Impacts, and Enhance the Economic Feasibility of Dairy Operations” with Dr. William Horwath, UC Davis.

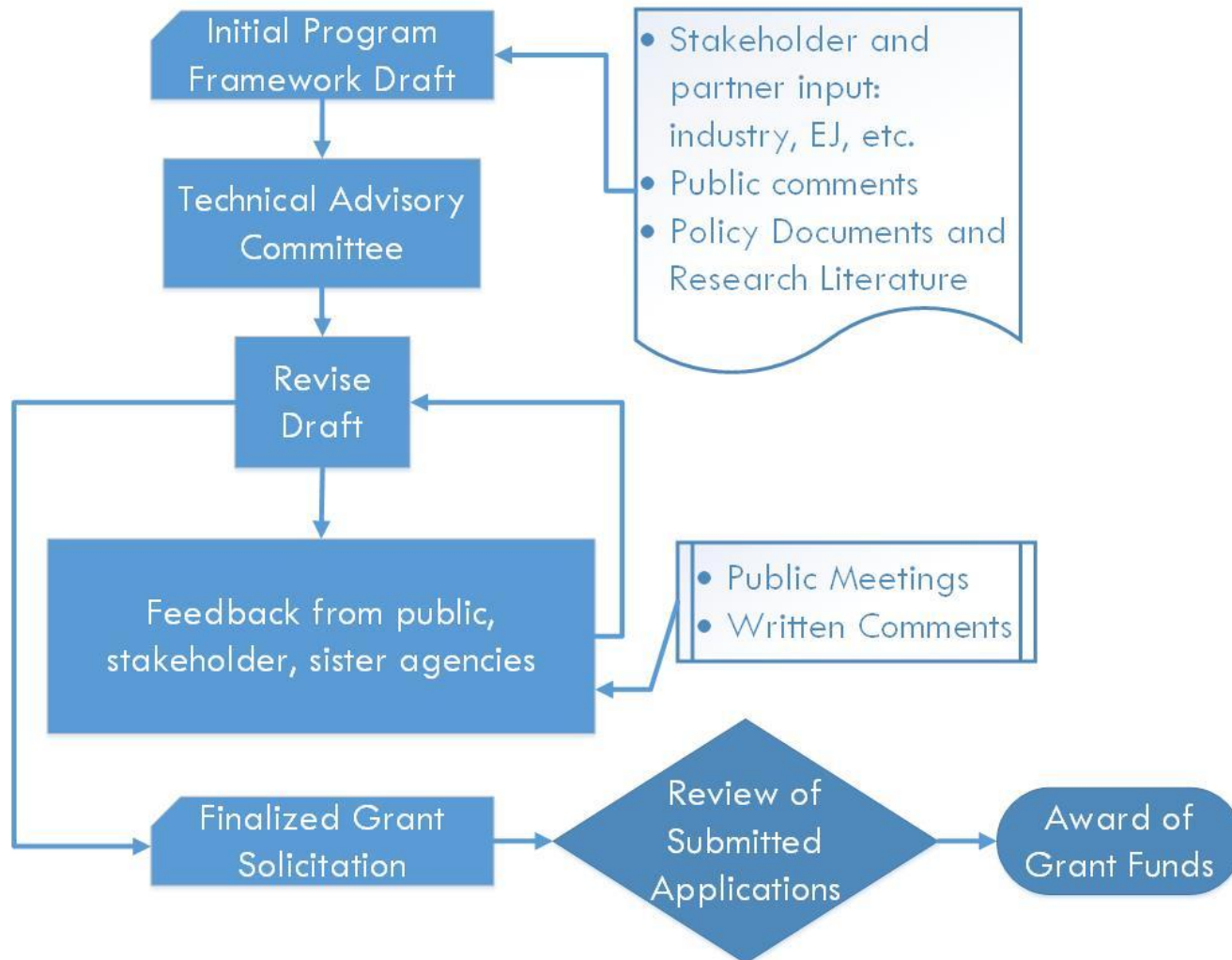
FUNDS ALLOCATION 2016-17

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- Total funds appropriated: \$50 million.
- Dairy Digester Research and Development Program (DDRDP): \$29-\$36 million.
- Alternative Manure Management Program (AMMP): \$9-\$16 million.
 - ▣ Non-digester management practices.

PROGRAM DEVELOPMENT PROCESS

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PROGRAM REQUIREMENTS AND ELIGIBILITY

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- Grant size: A maximum of 50% of the total cost of project, up to \$3 million.
- Matching funds - Minimum of 50% matching funds required (no more than 25% in kind).
- 2-year project term: Oct 2017 – June 2019.
- Eligibility:
 - Existing milk producers, dairy digester developers.
 - Cluster projects.
- Eligible bio-methane uses: On-site use or into electrical grid/pipeline (electricity generation or transportation fuel/RCNG), utilization of thermal energy on site or at neighboring facility.

ENVIRONMENTAL PROTECTION

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□ **Water Quality Protection:**

- Double-lined ponds consistent with the Tier 1 specification of the Dairy General Order Central Valley Regional Water Quality Control Board, or,
- Above-ground tank, or,
- Below-ground concrete lined tank.

□ **Air Quality Protection:**

- Total NO_x emissions no greater than 0.50 lb/MW-hr.

SCORING CRITERIA

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Application Section/Scoring Criteria	Max. Points
Feasibility of Digester Project	20
Financial Soundness/Budget Worksheet	10
GHG Emissions Calculations & Reporting	35
Project Readiness	10
Environmental Performance	15
Benefits to Local Communities	10
TOTAL	100

DDRDP APPLICATION PROCESS

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- Applications uploaded and submitted via State Water Resources Control Board Financial Assistance Application submittal Tool (FAAST)
<https://faast.waterboards.ca.gov/>
- Application Workshops.
- Q&A period.

DDRDP PROGRAM TIMELINE

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Item	Estimated Dates*
Public/Stakeholder Meetings and Public Comment Period	November – February, 2016
Notice of Funding Availability	May, 2017
Grant Application Workshops	May, 2017
Grant Applications Due	June 2017
Grant Evaluation Period	July – September, 2017
Announce Grant Awardees	September 2017

**Subject to change*

ADDITIONAL EFFORTS AND INTER-AGENCY COORDINATION

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- Methane reduction through non-digester management practices: Alternative Manure Management Program (AMMP) – 2017.
- SB 1383 – Methane Reduction:
 - Dairy Methane Workgroup in coordination with ARB, CEC and CPUC.
- SB 1383 – Organic Diversion from Landfills:
 - Healthy Soils Initiative in coordination with CalEPA, California Natural Resources Agency and Governor's Office.
 - Incentivizing practices such as compost application through the Healthy Soils Program:
 - \$7.5 million in 2016-17 to develop and administer Healthy Soils Program to fund CA farmers and ranchers to implement management practices that sequester soil carbon and reduce GHG emissions.
 - Anticipated release of Request for Grant Applications in July, 2017.
 - Direct incentives and demonstration projects.

CDFA OFFICE OF ENVIRONMENTAL FARMING AND INNOVATION

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