SB 1383 Dairy & Livestock

Greenhouse Gas Reduction Working Group Meeting

January 5, 2018
CalEPA Building
Byron Sher Auditorium

Dairy Subgroup #2:
Fostering Markets for Digester Projects

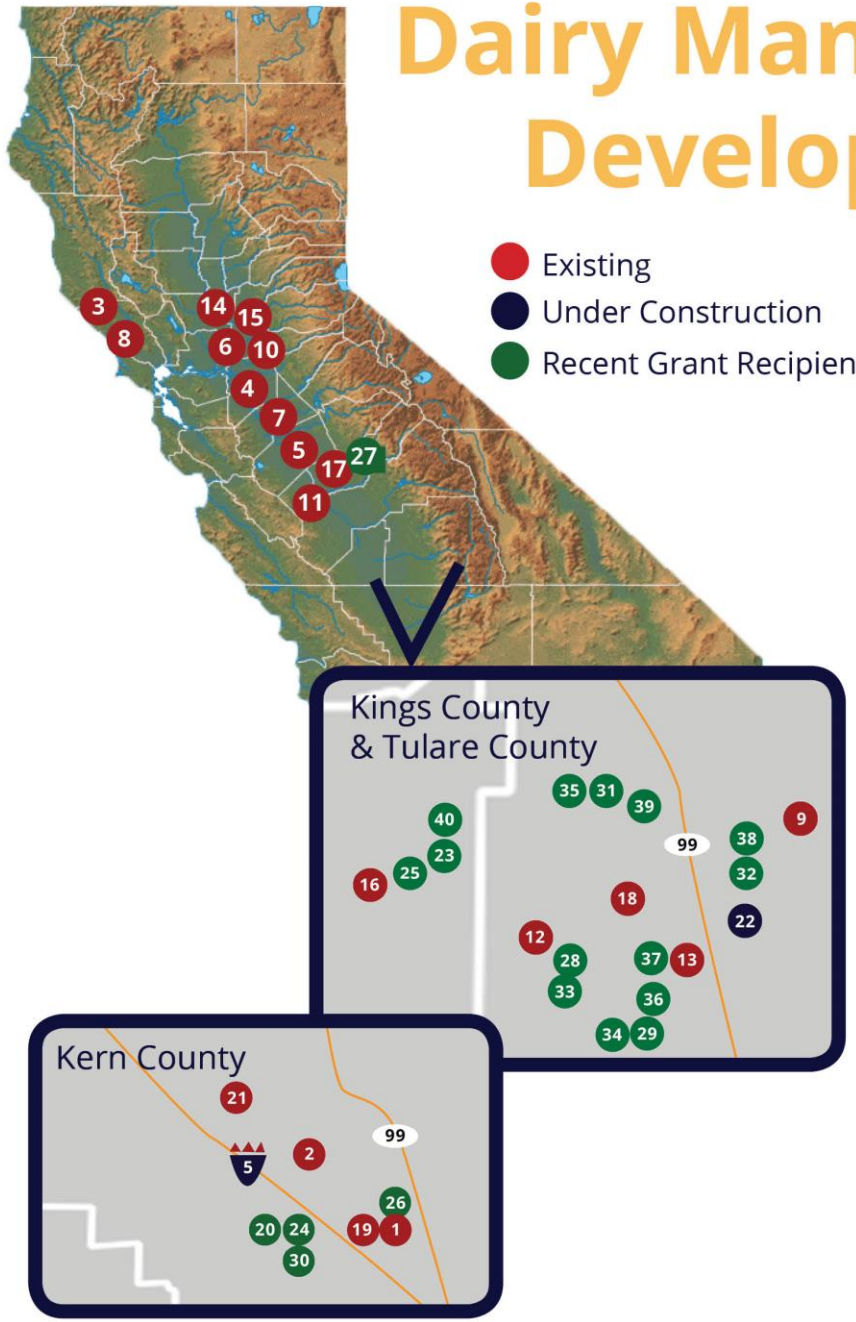
Committee Membership

CO-CHAIRS
- Michael Boccadoro (West Coast Advisors)
- Jim Lucas (SoCalGas)
- Ryan Schuchard (CALSTART)

25 Subgroup committee members consists of representatives from…

- dairy industry
- utilities
- project development
- environmental justice
- transportation and fuel industries
- non-governmental organizations
- local government
- financial consulting
- advocacy groups
- health organizations

Dairy Manure Digester Development in California



1. ABEC-Bidart-Old River
2. ABEC-Bidart-Stockdale
3. Blakes Landing Farms/ Straus Family Creamery
4. Castelanelli Brothers Dairy
5. Cottonwood Dairy/ Joseph Gallo Farms
6. Denier Dairy*
7. Fiscalini Farms
8. Giacomini Dairy
9. Hilarides Dairy
10. New Hope Dairy*
11. Open Sky Ranch
12. Pacific Rim Dairy
13. Pixley Biogas**
14. Van Steyn Dairy
15. Van Warmerdam Dairy
16. Verwey Dairy– Hanford
17. Verwey Dairy– Madera
18. GJ TeVelde Ranch

Under Construction

19. Carlos Echeverria & Sons Dairy
20. Lakeview Dairy
21. West Star Dairy
22. Van Beek Dairy
23. Wreden Ranch
24. Trilogy Dairy
25. Cloverdale Dairy
26. T & W Farms
27 Red Top Jerseys Dairy
28. Williams Family Dairy
29. K & M Visser
30. Maple Dairy
31. S & S Dairy
32. Rancho Teresita Dairy
33. Pixley Dairy
34. Legacy Ranch
35. Moonlight Dairy
36. Robert Vander Eyk Dairy
37. Circle A Dairy
38. Bos Farms
39. Hamstra Dairy
40. Hollandia Farms

*Temporarily Offline
**Undergoing Repairs

Updated December 2017

DAIRY CARES

Learn more at DairyCares.com.

Progress Update

- Several new projects came online in 2017 – several more scheduled in coming weeks
- 18 new projects awarded grants by CDFA
- CDFA recently initiated new grant solicitation with $61 - $75 million available
  - 30-40 new projects
- CPUC Pipeline Biomethane Pilot Project Solicitation in 2018
- Conceivable to have 100-120 projects operating in next 4-5 years

Summary of Dairy Subgroup #2 Activities

- Committee held five public meetings with remote access capability
- Gathered input from subgroup members for featured speakers and topics – total of 21 speakers/presentations given during the five meetings
  - Focus was to inform and educate subgroup members on the various markets and technologies that can help significantly expand the number of dairy digesters in California
- Development of subgroup specific barriers/opportunities/recommendations matrices and analysis flow charts

June 2017 to December 2017

Summary of Dairy Subgroup #2 Activities

Mission: Establish a roadmap to significantly expand the number of livestock digester projects in California that support the state's climate and air quality goals

- Identify commercial ready & emerging technologies
- Comprehensive overview of digester projects
- Identification of environmental impacts and benefits
- Identification of barriers to scaling up projects
- Considered infrastructure, procurement, funding sources, and environmental policies to achieve a sustainable model
- Considered various energy forms and markets
- Considered environmental justice concerns

June 2017 to December 2017

PROGRESS report

Dairy Digester Pollutant Emissions Impacts/Benefits

Typical California Covered Lagoon Digester

DIGESTER ENERGY PATHWAY	CH_4 / CO_2E	NOx	PM	H_2S	NH_3	CO	SOx	VOCs	N_2O	WQ
Electricity 	↓	↑	↑	↓	↓	↑	↑	↓	↓	↓
Pipeline biomethane RNG 	↓	↑	→	↓	↓	↑ → ↓	↑ → ↓	↓	↓	↓
Transportation Fuel R-CNG 	↓	↓	↓	↓	↓	↑ →	↑ → ↓	↓	↓	↓

Categories:

- Methane (CH_4)
- Greenhouse Gas (CO_2E)
- Nitrogen Oxide (NOx)
- Particulate Matter (PM)
- Carbon Monoxide (CO)
- Ammonia (NH_3)
- Hydrogen Sulfide (H_2S)
- Sulfur Dioxide (SO_x)
- Volatile Organic Compounds (VOCs)
- Nitrous Oxide (N_2O)
- Water Quality (WQ)

↓ = Reduction/Improvement

↑ = Increase/Impact

→ = No change

Keys for Program Success

- Maximize dairy manure methane reductions
- Achieve environmental co-benefits
  - Criteria/toxic air pollutants
  - Water quality
- Minimize impacts on disadvantaged communities
- Utilize available resources efficiently

Subgroup #2: Digesters

Overall Deliverable: Dairy methane digester project expansion

Draft Recommendations

- Continue to allocate GGRF incentive funding to encourage and incentivize all dairy methane reduction efforts
- Conduct necessary outreach and engagement to ensure environmental benefits accrue and impacts are avoided in the local communities where dairy methane reduction projects are implemented including coordination with AB 617 mandated processes

Subgroup #2: Digesters

Deliverable: Electricity generation and grid interconnectivity

Draft Recommendation

- Review, improve, continue and extend the BioMAT FiT for dairy digester projects in California. The program is currently set to expire in February 2021.

Subgroup #2: Digesters

Deliverable: Pipeline injected biomethane

Draft Recommendation

- Continue and expand LCFS program with mechanisms and/or other financial instruments that encourage long-term market certainty and stability for in-state dairy renewable gas projects, including CARB's development and implementation of a Pilot Financial Mechanism, as required by SB 1383

Subgroup #2: Digesters

Deliverable: Transportation fuel markets

Draft Recommendations

- Provide a sufficient multi-year allocation of GGRF incentive funding to offset the incremental cost of near zero or zero emission vehicles that increase demand for dairy renewable gas
- Identify, address and/or remove barriers that stand in the way of fleets deploying vehicles that utilize renewable gas

Subgroup #2: Digesters

Deliverable: Identification of value added products from manure and digestate

Draft Recommendation

- Expand research, demonstration and commercialization efforts of process technologies and biomethane delivery alternatives capable of producing clean, low carbon fuels from dairy manure

Subgroup #2: Digesters

Environmental Justice Considerations

Subgroup #2:
Digesters

Environmental Justice Position

- No new on-farm emissions (climate, toxic, criteria)
  - Communities are already over burdened
  - Beneficial practices to mitigate ammonia increases
  - All new emissions mitigated at other on-farm sources
    - Electrification, Natural Gas
    - Construction
- Appropriate land-use planning
  - Buffer zones
  - Transportation (weight and load limitations)
  - Safety (incomplete streets passing housing and schools)
- Community engagement
  - EPA standard
  - Community air monitoring
  - Community benefits agreement

Subgroup #2: Digesters

Example: Community Benefits Agreement

A Community Benefits Agreement is a contract signed by community groups and a developer/project manager that requires the developer to provide specific ***amenities and/or mitigations*** to the local community or neighborhood. In exchange, the community groups agree to publicly support the projects, or at least no oppose it.

GROUNDBREAKING GOOD NEIGHBOR AGREEMENT REACHED BETWEEN RECOLOGY AND KERN COUNTY COMMUNITY GROUPS

Local Community Groups Reach Historic Agreement with Recology to Modernize Operations and Abatement Programs, and to Partner on Local Community Projects

Lamont, CA – Yesterday community groups in Arvin and Lamont reached an agreement with Recology over the company's new operation of Recology Blossom Valley Organics – South, a large composting facility outside of Lamont. The agreement will bring significant economic and environmental benefits to a region that has been over-burdened by pollution for decades. This agreement marks nearly a decade of work by local residents to curb pollution and odors from the previous owner's operation of the facility, and will provide some immediate relief to residents living near the mega-composting facility. The agreement will ensure the operation is safe, protects public health, and also makes significant financial investments in the community.

Subgroup #2: Digesters

“Fair Treatment”

As defined by the United States Environmental Protection Agency:

Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

Subgroup #2: Digesters

2018 Roadmap For Developing Final Recommendations

- Continue to explore state policies to support rapid adoption of additional projects
- Continue to explore Environmental Justice concerns and potential solutions
- Continue to explore and quantify environmental impacts and benefits including overall reductions being achieved
- Continue to explore emerging technologies and potential energy/fuel markets and opportunities

Subgroup #2: Digesters

Leave you with 3 words:

Market Certainty & Stability

Subgroup #2: Digesters