MANURE MANAGEMENT PRACTICES INCENTIVIZED THROUGH THE DAIRY DIGESTER RESEARCH AND DEVELOPMENT PROGRAM

The Dairy Digester Research and Development Program (DDRDP) supports manure management practices that reduce atmospheric greenhouse gases (GHG) and provide additional benefits, such as renewable energy through electricity, renewable natural gas (RNG), and hydrogen and compost production, through anaerobic digesters on California dairy operations. The DDRDP-specific Quantification Methodology and Benefits Calculator Tool to estimate GHG reduction and co-benefits developed in collaboration with the California Air Resources Board (CARB) is currently available.

The Anaerobic digesters harness the natural process of decomposition of dairy manure to produce methane-rich biogas, which is captured to generate:

- Electricity
- Hydrogen production
- Utilization of energy at a neighboring facility
- Renewable Natural Gas, which can be used as transportation fuel or can be directly injected into pipelines

Methane, formed when volatile manure solids are stored in wet and/or anaerobic conditions, is approximately 25 times more potent than carbon dioxide as a GHG. The capture of methane using anaerobic digester systems keeps it from escaping into the atmosphere and contributing to climate change while helping to decarbonize the energy and transportation sectors, reduce dairy's carbon footprint, and generate revenue for California dairy families and owners.

The following anaerobic digester systems, also known as Biogas Control Systems (BCS), are currently incentivized through the DDRDP:

1. Covered Lagoon
2. Complete Mix
3. Plug Flow
4. Fixed Filmed

The following Biogas Destruction Devices as part of each BCS are currently eligible for funding:

1. Lean and Rich-burn Internal Combustion Engine
2. Boiler
3. Microturbine or Large Gas Turbine
4. Fuel Cell
5. Linear Generator
6. Upgrading to Compressed Natural Gas (CNG)/Liquified Natural Gas (LNG) fuel (onsite or remote use)
7. Upgrading to Dimethyl Ether (DME) fuel (onsite or remote use)
8. Upgrading to biomethane for pipeline injection (remote use)
9. Upgrading to hydrogen fuel (onsite or remote use)

The DDRDP only supports the use of commercially available technologies. Commercially available technologies are those having a proven operating history specific to grant applications. Such a system is based on established design and installation procedures and practices. Professional service providers, trades, large construction equipment providers, and labor are familiar with installation procedures and practices.