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RIDGELINE FARM – CLYMER, NY

SYSTEM DESIGN

In December 2001, Ridgeline Farms (formerly Matlink Dairy Farm) began operating an anaerobic digester system to address odor emissions, water quality, and fuel/electricity costs. Since then, the farm has produced enough electricity to meet all its own demands, with excess sold to National Grid and a plastics molding company next to the farm. The digester originally produced enough biogas to fuel a 130 kW engine-generator set, which reliably generated electricity 90 percent of the year. In 2012, the farm replaced the unit with a 280 kW engine-generator set.

Built at the middle of a slope, the digester uses gravity to transfer manure from the barn alley scraper collection system to the digester. In addition to the manure, influent to the digester typically includes 5,000 gallon loads of food waste. Fixed at opposite corners of the digester, two 20-hp agitators run two hours a day to blend the digester contents. Digester effluent then flows to the long term storage. Material from the long-term storage is spread on 1,800 acres of corn and hay cropland.

Biogas from the digester runs a boiler that produces hot water to maintain a constant 100°F temperature in the digester. The biogas boiler also produces heat for the barn floors and farm office.

Additional information is available in a [Cornell University case study](#).

PROJECT BENEFITS

- Reduced odors
- Increased farm revenue from food waste tipping fees and the sale of excess electricity
- Reduced cost to heat the barn floors and farm office
- Stabilized effluent provides nutrients for corn and hay crops

Project Update: In January of 2012, Ridgeline Farm installed a 280 kW combined heat and power (CHP) system. In less than 2 months, the system had generated over 240,000 kWh of electrical energy, with more than half of that being sold back to the utility. Approximately 750,000 BTU/hr of thermal energy is recovered from the engine jacket to heat the digester. As of January 2014, the digester is currently not operating.



Photo: Ridgeline Farm

- **Population Feeding Digester:** 650
- **Baseline System:** Storage Tank or Pond or Pit
- **Digester Type:** Complete Mix
- **Co-Digestion:** Food processing waste (food waste from grapes; milk/ice cream and salad dressing production)
- **System Designer:** RCM International, LLC.
- **Biogas Generation:** 325,000 ft³/day
- **Biogas Use:** Cogeneration
- **Generating Capacity:** 280 kW
- **Receiving Utility:** National Grid