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SCENIC VIEW DAIRY – FENNVILLE, MI

SYSTEM DESIGN

Scenic View Dairy's Fennville location is home to the first anaerobic digester project in the United States generating both electricity and pipeline grade natural gas. It is also the first digester project in the state of Michigan. The digester system and energy production facilities replace the farm's open anaerobic lagoons previously used for manure management. Electricity generation began in June 2006, followed by pipeline gas production in 2007.

Manure from heifers and lactating cows is flushed and scraped from barns into a manure pit where a piston pump delivers the waste to three above-ground heated digesters. The addition of syrup stillage has boosted biogas production to 324,000 cubic feet per day. Biogas from the digesters is either transferred to two 400 kW reciprocating engine-generator sets for electricity production, or processed in a pressure swing absorption unit and injected into the public natural gas pipeline.

PROJECT BENEFITS

Scenic View Dairy digester project benefits include the following:

- Odor and pathogen reduction
- Electricity production (surplus of 2,000 kilowatts available for resale)
- Savings on heating, bedding, and solid disposal costs
- Potential revenue from sale of excess energy and natural gas (3 to 5 cents per kilowatt-hour); bedding; and carbon credits (\$120,000/year)

Solids or "biofibers" from the digester have replaced sand as the primary bedding source, preserving land from sand harvesting and reducing bedding costs.



Photo: TerraPass, Inc.

"By identifying higher-value markets for biogas, more farms will be able to afford the large investment required for anaerobic digesters. This will not only help farm profitability, but the use of anaerobic digesters also helps the environment by greatly reducing manure odor and methane emissions."

—Mike Geerlings
Owner, Scenic View Dairy

- **Population Feeding Digester:** 3,800; 9,000
- **Baseline System:** Storage Lagoon
- **Digester Type:** Complete Mix
- **Co-Digestion:** Food Processing Waste (Syrup stillage from ethanol plant; Crude glycerine from biodiesel plant)
- **System Designer:** Phase 3 Developments & Investments, LLC; Biogas Direct, LLC (Biogas-Nord)
- **Biogas Generation:** 324,000 ft³/day
- **Biogas Use:** Cogeneration
- **Generating Capacity:** 800 kW
- **Boiler Capacity:** 1,000,000 Btu/hr
- **Receiving Utility:** Consumers Energy Company; Michigan Gas Utilities Corp.
- **Project Funding:** USDA