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HOLSUM DAIRY (IRISH ROAD) – HILBERT, WI

SYSTEM DESIGN

Irish Road Dairy is the older of two Holsum dairies operating a digester. Manure is scraped and collected at the farm three times each day. Waste from three area food processing industries is mixed with on-farm manure and sent to two mixed plug flow digesters.

In 2004, the farm began operating two below-grade, two-stage mixed flowTM digesters with fixed concrete covers. The digesters are designed differently than typical DVO digesters in that they are straight rather than U-shaped. The digesters use biogas for mixing and operate at a temperature around 100°F. They have a hydraulic retention time of approximately 22 days.

Biogas from the digester is fed through a trap and chiller and then used to fire two engine generator sets. All the generated electricity is sold to the Wisconsin Public Service Corporation under a sell-all contract. Waste heat from the engines and exhaust is used to heat the milking parlor, office, and holding and transfer areas. A backup boiler is also available at the facility to provide additional heat to the system as needed.

Holsum Dairy on Irish Road produces approximately 16 tractor trailer truckloads of digested solids each week. The farm uses about one third of the fibrous solids for bedding and sells the rest to other dairies.

PROJECT BENEFITS

- Electricity and heat production
- Savings on bedding costs
- Revenue from waste tipping fees and sale of excess solids

Photo: Wisconsin Department of Energy

- **Population Feeding Digester:** 3,300
- **Baseline System:** Storage Tank or Pond or Pit
- **Digester Type:** Two-Stage Mixed Plug Flow™
- **Co-Digestion:** Food industry waste
- **System Designer:** DVO Inc.
- **Biogas Use:** Cogeneration
- **Generating Capacity:** 900 kW
- **Receiving Utility:** Wisconsin Public Service Corp.