

NEW HOPE VIEW FARM – HOMER, NY

SYSTEM DESIGN

Odor reduction was paramount in the decision to install a plug-flow digester at New Hope View Farm. Due to local opposition, the Town of Homer required the farm to implement a proven technology already in use at a similar dairy—a plug-flow digester equipped with a gas-tight flexible membrane cover to collect biogas.

Barn effluent (raw manure and soiled bedding) and milking center wastewater is transferred by an influent pump to the digester, where the mixture generates biogas. Digester effluent is pumped directly to a storage tank, which is located above-ground to prevent groundwater contamination. The slurry is then hauled off-site in tanker trucks for land application.

PROJECT BENEFITS

- Odor and pathogen reduction
- Potential revenue from value-added products and energy savings
- Reduced groundwater contamination

Biogas is transported in an underground pipe and combusted in three different ways: a microturbine, a boiler, or a flare (for excess gas). In 2006, a 70 kW Ingersoll-Rand (IR) microturbine, designed for low energy fuels, was installed. The farm sells conditioned biogas to IR, who in turn owns and operates the microturbine and sells electricity to the farm and New York State Electric and Gas (NYSEG).

A screw-press separator and housing are located next to the digester if a decision is made to separate effluent solids and liquids. Separated solids can be collected and sold.



Photo: Cornell University

- **Population Feeding Digester:** 850
- **Baseline System:** Storage Lagoon
- **Digester Type:** Horizontal Plug Flow
- **System Designer:** RCM International, LLC
- **Biogas Use:** Flared Full Time
- **Generating Capacity:** 70 kW
- **Boiler Capacity:** 1,500,000 Btu/hr