

Optimizing Biogas Utilization Technology on the Farm

BACKGROUND

Dairy Development International, LLC (DDI) has constructed a dairy manure digester system in Homer, New York. Anaerobic digestion can minimize odors and allow nutrients to be more effectively used. In digesters microbes destroy odor-causing compounds and produce methane-rich biogas. There are three planned dispositions of the biogas produced at DDI: (1) combustion to produce electricity and recover heat, (2) combustion in a boiler for hot water, and (3) combustion of unused biogas in a flare to destroy methane and other gases. Currently a passive gas control system is in place which relies upon gas pressure and manually adjusted valves to direct gas to the appropriate destination. The gas handling part of the digester system has not always functioned adequately to control the flow of biogas for optimal energy recovery and to direct all unused biogas to combustion in the flare.

OBJECTIVE

The objective of this project is to implement and demonstrate a gas handling system that is capable of reliably controlling both gas pressures in the digester and proper allocation of the gas to flare, boiler, and microturbines.

DESCRIPTION

Tasks include: (1) factory design, manufacturing and testing of the gas handling system, (2) installation and startup, (3) Demonstration monitoring and documentation, (4) preparing reports and transferring the project findings.

BENEFITS

By installing more positive controls for the biogas pressure and allocation, the project will reduce air emissions of methane and odor-causing compounds and also should allow for greater use of the biogas to produce more useful energy. The project will track the total biogas production and the allocation of the biogas to the boiler, microturbines, and flare.

SCHEDULE AND STATUS

The project has just begun.

Funding	Encumb to Date	Pending	Total Anticipated
Dairy Development International	\$41,680.00	\$0.00	\$41,680.00
NYSERDA	\$48,000.00	\$0.00	\$48,000.00
TOTALS	\$89,680.00	\$0.00	\$89,680.00

Manager Fiesinger, Thomas
Contracts STD-8822
Contractors Dairy Development International
Technologies Agriculture, Cogeneration
Cities
Counties