

Greenhouse to Use Digester Energy

Demonstrate the year-round operation of a passive solar greenhouse using excess electricity and heat from an anaerobic digester system.

BACKGROUND

Anaerobic digestion is a treatment method for dairy manure that can greatly reduce odors, produce biogas to supply farms with electricity and heat, and allow better use of plant nutrients in manure. However these systems generally have high capital costs. To improve the feasibility of these systems farmers are looking for high valued uses of the energy and solids that can be recovered from the digester systems.

OBJECTIVE

The overall goal of the project is to demonstrate and evaluate successful year-round operation of a passive solar greenhouse, supplemented with excess electricity and heat produced by an anaerobic digestion system. In pursuit of this goal, project objectives include design, construction and operation of a cost-effective greenhouse system, tracking of the physical and economic costs and benefits, and transfer of the results to other current and potential digester operators who may be interested in installing a greenhouse system to increase their farm's profitability.

DESCRIPTION

A project team will be established to work with the cooperator farm in completing the project. The team will also assist in review and preparation of a greenhouse business plan and system design. A sampling testing and evaluation plan will be developed to define specific evaluation criteria and methods for determining the degree of success of the greenhouse system. The system will be operated for a full calendar year. Fact sheets, presentations, tour events, and a final report will all be used to transfer the project results.

BENEFITS

If the project is successful and profitable in its use of excess heat and electricity produced by the farm's anaerobic digester, it will encourage more farmers to consider installing methane digesters to treat their livestock manure and thus expand the recovery of energy from this renewable source. Greater recovery of methane also will help control emissions of greenhouse gases. Other environmental benefits will result due to the reduced odor of digested manure since farmers with digesters will have greater ability to land apply digested manure at times and in places where nutrients are more readily taken up by crop growth.

SCHEDULE AND STATUS

The project has just begun.

Funding	Encumb to Date	Pending	Total Anticipated
AA Dairy	\$20,180.00	\$0.00	\$20,180.00
Cornell University	\$16,860.00	\$0.00	\$16,860.00
NYSERDA	\$29,940.00	\$0.00	\$29,940.00
TOTALS	\$66,980.00	\$0.00	\$66,980.00

Manager	Fiesinger, Thomas
Contracts	STD-7254
Contractors	AA Dairy
Technologies	Agriculture, Cogeneration
Cities	Candor
Counties	Tioga