

Patterson Farm CHP Demonstration Project

A complete-mix digester will be installed to provide fuel for 320 kW of electric generation and heat for an absorption refrigeration milk chiller and to di animal bedding.

BACKGROUND:

A complete-mix, anaerobic digester, coupled with a biogas powered CHP system, will supply electricity to the farm, and heat to an absorption chiller a solids drying system . The chiller will provide the majority of the milk cooling requirement. The solids drying system will provide quality animal bed for use on the farm and for sale to other farms. Controlled and beneficial combustion will reduce methane, a recognized green house gas, which mig otherwise be released to the atmosphere from the decomposing manure. This demonstration of existing technologies will be configured in a manner is not presently employed by the dairy farm industry in NYS.

OBJECTIVE:

Install, commission, operate, monitor, and provide technology transfer regarding a CHP system consisting of two (2) internal combustion engine generators with 320 kW total capacity, operating on biogas, with byproduct heat recovery for use.

BENEFITS:

Will provide new installed capacity/permanent peak load reduction of 320 kW and will demonstrate recovered-heat powered refrigeration for milk cooling use, and the use of recovered-heat for solids drying.

The demonstration project will be evaluated according to the following metrics:

- (1) Reduced on-site energy costs
- (2) Performance of the recovered-heat powered refrigeration system and the solids drying system
- (3) Improved energy reliability
- (4) Reduced peak load on the grid
- (5) Performance of the engine-generator technology using anaerobic digester gas as fuel

Funding	Encumb to Date	Pending	Total Anticipated
NYSERDA	\$592,000.00	\$0.00	\$592,000.00
Patterson Farms, Inc.	\$788,000.00	\$0.00	\$788,000.00
TOTALS	\$1,380,000.00	\$0.00	\$1,380,000.00

Manager Kear, Edward
Contracts STD-7862
Contractors Patterson Farms, Inc.
Cities Auburn
Counties Cayuga