

## REC FACILITY PROFILE:

# Reinford Farms Livestock Biogas

**Project Type**

Livestock Biogas

**Total Capacity**

130 kW nameplate capacity

**Project Location**

Mifflintown, Pennsylvania

**Estimated Annual Energy Generation**

3,000 kWh per day, 1,100 MWhs per year

**Commercial On-Line Date**

February 2008

**Developer/Owner**

Reinford Farms

The Dominion Green Power program supports a number of renewable facilities within our regional power pool. The purchase of RECs from these facilities provides a vital income stream for furthering the development of renewable energy. One of the facilities supported through the program is the Reinford Farms Livestock Biogas facility located in Mifflintown, Pennsylvania. The 900-acre Reinford Farm has been owned and operated by the Reinford family since 1993, carrying on the family's long tradition of farming in the area.

During the winter of 2008 the family brought online a new livestock biogas system that uses methane released from the farm's cow manure to generate renewable energy. The hard work involved in building and managing the livestock biogas system has paid off. The family sells the electricity and the Renewable Energy Certificates (RECs) it produces, and also uses the system to reduce costs and increase revenues in other ways.

Designed by RCM Digesters of Berkeley, California, the livestock biogas system moves manure produced by the farm's 440 milking cows and 50 dry cows to a tank, where methane gas released by the manure is collected. This biogas is then piped to a 1200 rpm Caterpillar G342 engine coupled to a 250-volt AC, 60-hertz, single-phase 130 kW generator, where it is combusted to produce both electricity and heat.

On an average day the system generates 3,000 kWh of electricity, which is delivered straight to the power grid. In addition, the system produces heat that the Reinords use for their home, milking parlor, and other buildings on the farm. The family also uses this heat to pasteurize raw milk that is fed to new-born calves — resulting in healthier young cows — and to dry corn that is raised at the farm for feed.

As an added benefit, the system produces sterilized solid waste that can serve as bedding for cows. The Reinords use this bedding themselves and also sell to neighboring farmers. Switching to this bacteria-free bedding has led to an unforeseen benefit. Since the Reinford family began using it at their farm, bacteria levels in their milk have gone down 50 percent.

Drew Reinford, the family member responsible for building and managing the system, has some advice to other farmers who are considering installing livestock biogas systems. "Don't expect to just sit back and let the system run after you install it. It is difficult for a livestock biogas system to pay for itself if you don't find ways for it to generate revenues or savings outside of those from the electricity it produces." He adds that he expects the system to pay for itself in five to six years.

As far as REC revenues, Drew says they make a real difference. "Economically, it can be difficult to run a small family farm. The steady monthly income that comes from the RECs helps us pay for upkeep and repairs to the biogas equipment and justify the time I and others spend managing the system."



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— Drew Reinford, Reinford Farm

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