

Midwestern Farmers Convert Livestock Manure into Electricity

By: Chicago Tribune - Knight Ridder/Tribune Business News via COMTEX

WESTGATE, Iowa, Nov 04, 2002) –

Roger Decker has milked dairy cows on the same flat, green patch of earth all his life. It's the same farm his father owned, and Decker, 61, hopes to pass it down to his three sons.

But Decker has found that a dairy farmer can't live by milk alone--at least not at today's depressed prices.

So he's seeking to turn another cow output into a moneymaker. He's turned his 650 Holsteins into power generators by converting the 11,500 gallons of manure they produce daily into electricity.

Spurred by advances in technology and pressure on utility companies to create renewable sources of power, Midwest farmers increasingly are entering the electricity business using machines that turns their livestock manure into energy.

By setting up his own mini-power plant, Decker hopes to cut costs for his own electricity and hot water, and ultimately earn some money from extra energy sold to the local utility, Alliant Energy-Interstate and Light.

"We knew when we started that it wasn't going to save the farm," Decker said. "I wanted to be environmentally friendly to my neighbors. And we are hoping that it will be an extra income for us. If we can pick up another \$1,000 a month--it's not a lot of money, but in the long haul it can tide us through the times when milk prices are down."

The Midwest farmer's new role as power plant operator has become more widespread as local utilities--primarily in Iowa, Wisconsin and Minnesota--have begun promoting such projects in an effort to fulfill state standards requiring a portion of electricity be generated from renewable sources.

Madison, Wis.-based Alliant Energy Corp., the parent company of Alliant Energy-Interstate and Light, has embraced the standard. In addition to signing a 10-year contract with Decker's operation in Iowa, Alliant has a contract with Deere Ridge Run Farms in Amherst Junction, Wis., which can produce up to 200 kilowatts of energy, enough to power 50 homes.

"It's good to have a known target," said Chris Schoenherr, an Alliant spokesman. "It builds a floor for renewable energy and a more certain target."

Illinois has no such mandate, but it does have a renewable energy goal of 5 percent by 2010 and 15 percent by 2020. Earlier this year, New Horizons Dairy in Downstate Elmwood became the first dairy farm in the state to begin using the process to generate electricity for sale on the power grid. The dairy's generator is large enough to meet the demand of about 75 homes, according to Hans Detweiler, of the Environmental Law and Policy Center in Chicago.

Iowa, which adopted its renewable energy standard more than a decade ago, has a standard of 2 percent by 2011, though the Iowa General Assembly is about to consider raising that standard to 10 percent by 2010. The Wisconsin standard is 2.2 percent by 2011, while Minnesota aims to generate 4.8 percent of its electricity from renewable sources by 2012.

Alliant Energy Corp., which does business in Iowa, Wisconsin and Illinois, envisions that anaerobic digesters, which break manure down into energy, could produce 1 percent of the company's electricity supply.

"We know these standards are in place and may be increased, so why not get ahead of the curve?" said John Ruff, an Alliant spokesman.

The process at Decker's Top Deck Farms is typical. The cows' manure is stored in a 124-foot long, sealed concrete tanks and heated to 98 degrees Fahrenheit. The methane and carbon dioxide released is fed through piping to an engine, which powers a generator and turns a turbine to create electricity.

One drawback to such projects: cost. Top Deck Farms' equipment cost about \$500,000, though Alliant chipped in about half.

Such projects may get an even bigger boost from legislation in Congress. The Senate version of the energy bill would call for utilities to derive 10 percent of their power from renewable resources by 2019.

Current law already provides a 1.7 cent tax credit for each kilowatt-hour of electricity produced from poultry wastes. There appears to be relatively broad support in Congress for widening that tax credit to include farms that convert other kinds of animal waste to power.

This fall, the country's largest duck farm, Maple Leaf Farms near Racine, Wis., began generating electricity from the 40,000 gallons of manure produced by its 500,000 ducks.

The farm signed a two-year contract with a unit of We Energies, a unit of Wisconsin Energy Corp., in hopes of providing up to \$60,000 a year worth of electricity, all of it to be used on the farm. Maple Leaf Farms also hopes to make about \$18,000 a year by selling surplus electricity to We Energies.

"There's more momentum and a more coordinated attempt now to make these projects work because the utilities now have a real interest in seeing them succeed," said Mark Jenner, economist with the American Farm Bureau Federation in Park Ridge.

Still, Jenner said such projects face hurdles.

"The technology works, but it's still a commercial experiment," Jenner said. "Once you get the ratio of the pigs to ducks to electrons figured out, then you've got a distribution problem because the grid is not ready for 1,000 small electricity suppliers. But the states and the federal government are working on improving connectivity."

Even if such projects don't become widely popular, they still have side benefits for farmers such as Decker, including eliminating odor and making the leftover, processed manure a more effective fertilizer.

By Melita Marie Garza

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