

TURNING COW WASTE INTO ENERGY

A unique partnership will soon turn cow waste from farms into renewable energy. Gundersen Health System and Dane County in Wisconsin are partnering with three farm families in Dane County on the GL Dairy Biogas Project. The project will offset about 14 percent of Gundersen's energy needs, bringing the health system one step closer to its energy independence goal.

This project will serve Blue Star Dairy, Hensen Brothers Farm and Ziegler Farm, all located just outside of Middleton, Wis. A total of more than 2,000 cows ensure enough manure supply to make the project economically viable. As digester and biogas technologies develop, costs should improve which can lead to more projects on smaller farms.

How does the project work?

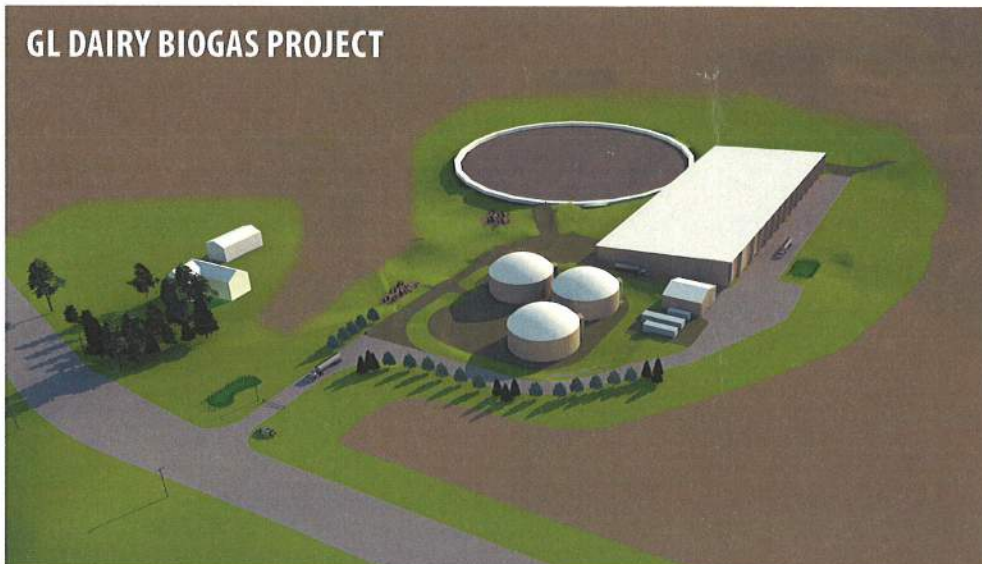
The GL Dairy Biogas Project uses a dairy digester and generator to create energy. Cow manure from the three farms will be processed in three air-tight digester tanks. The tanks will be heated to about 100 degrees—just like a cow's stomach. Bacteria in the manure thrive in these conditions and they consume solids in the manure while releasing methane gas.

Instead of being released into the atmosphere, the methane will be captured at the top of the digester and burned in a generator to create electricity, just like natural gas in an engine. The excess heat from the generator will warm the digester. The digester operation is expected to generate about 16 million kilowatt hours of electricity annually. The electricity will be added to the local grid in Dane County through Madison Gas and Electric, enough to power approximately 2,500 homes.

The process also creates a large amount of clean, organic-fiber by-product that has many horticultural uses or can be used on the farms as cow bedding.

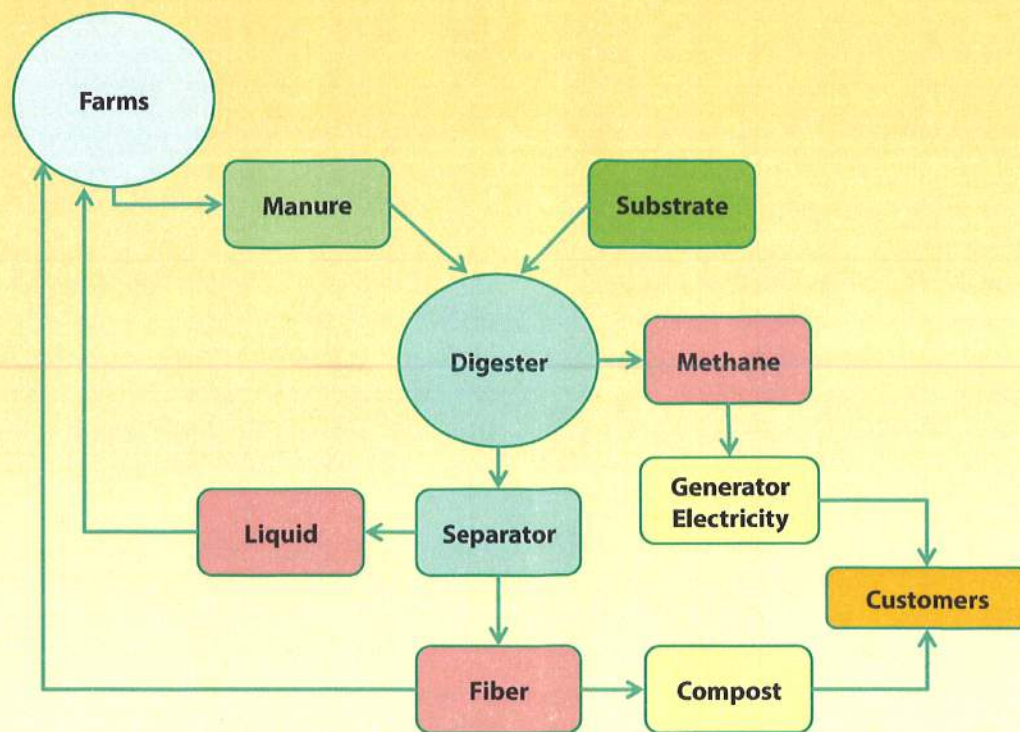
In addition to producing cleaner energy, this project will also help reduce phosphorus runoff to the waterways in Dane County. Phosphorus is the leading cause of green algae and other weed growth in Dane County's lakes and comes from both urban and rural sources.

The biogas project is expected to be up and running in late 2013.



The GL Dairy Biogas project is part of Gundersen Health System's Envision® plan to lead the healthcare industry in environmental stewardship and lower energy costs. Gundersen Health System is headquartered in La Crosse, Wis., with hospitals and clinics in Wisconsin, Minnesota and Iowa. For more information, call (855) 669-1653 (toll free), email envision@gundersenhealth.org or go to gundersenenvision.org.





How it works:

- Cow manure from the three farms will be processed in three air-tight digester tanks.
- The tanks will be heated to about 100 degrees—just like a cow’s stomach which will release the methane gas from the manure.
- The methane will be captured at the top of the digester and burned in a generator to create electricity.
- The electricity will be added to the local grid in Dane County through Madison Gas and Electric.
- The remaining material is a clean, organic fiber by-product that has many horticultural uses or can be used by the local farmers as cow bedding.