

# TURNING COW WASTE INTO ENERGY

A unique partnership is turning cow waste from farms into renewable energy. Gundersen Health System and Dane County in Wisconsin have partnered with three farm families in Dane County on the GL Dairy Biogas Project represents about 38% of Gundersen's renewable energy production.

This project serves Blue Star Dairy, Hensen Brothers Farm and Ziegler Farm, all located just outside of Middleton, Wis. A total of more than 2,000 cows provide adequate manure for feed stock for the project.

## How does the project work?

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

Instead of being released into the atmosphere, the methane is captured at the top of the digester and burned in generators to create electricity.

The excess heat from the generators warms the digester. The digester operation generates about 16 million kilowatt hours of electricity annually. The electricity is added to the local grid in Dane County through Madison Gas and Electric, enough to power approximately 2,500 homes and reduce fossil fuel carbon dioxide by 11,000 metric tons per year.

The process also creates a large amount of clean, organic -fiber by-product that has many horticultural uses and is composted onsite.

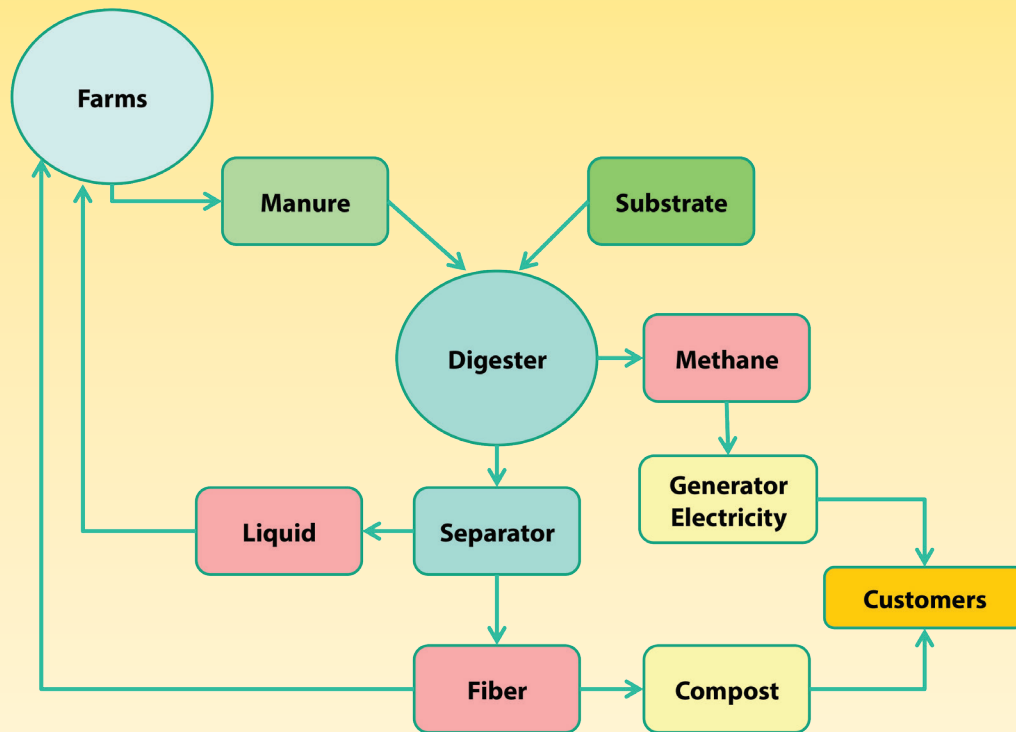
In addition to producing cleaner energy, the project prevents more than 3,700 pounds of phosphorus runoff to the water ways in Dane County every year. Phosphorus is the leading cause of green algae and other weed growth in Dane County's lakes and comes from both urban and rural sources. It is estimated that 370,000 pounds of algae will be reduced annually in the Yahara watershed as a result of this project.

Besides improving the environment, this created six full time jobs on an ongoing basis to support operations.



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](mailto:envision@gundersenhealth.org) or go to [gundersenenvision.org](http://gundersenenvision.org).





### How it works:

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