

# POWER PROFILE

**Customer:** Bettencourt Dairies

**Location:**

Filer, Idaho, USA

**Customer Business Issue:**

Using cogeneration to manage methane gas and odor

**Solution:**

Two Cat® 3520C Generator Sets

**Cat® Dealer:**

Western States Equipment Company



*To mitigate odors, Bettencourt Dairies installed six one-million-gallon anaerobic digesters on site to process manure at Rock Creek Dairy.*

**POWER NEED**

With 60,000 cows and 13 facilities, Bettencourt Dairies is one of the largest dairy farm operations in Idaho. Rock Creek Dairy, a Bettencourt operation with 9,000 cows, was the subject of hundreds of odor complaints from local residents over the course of six years. Aware of the odor issue, the Bettencourt Dairies management team began investigating solutions that would reduce both the odor and methane emissions from Rock Creek's cows.

"Everyone at the Department of Agriculture knew about it," said Bettencourt Dairies CFO Rick Onaindia. "We knew we had to do something right away."

**SOLUTION**

Bettencourt Dairies discovered a solution that would allow them to resolve the odor and methane issues, while also producing power for the facility and the local grid. Six one-million-gallon anaerobic digesters were installed at Rock Creek Dairy to process manure and mitigate odors. Approximately 200,000 gallons of cow manure are collected daily, pumped through a nearly mile-long pipeline to the digesters and processed into clean compost used for animal bedding. It's the largest facility of its kind in the country.

As the manure is processed, the resulting methane gas is collected from the digesters and piped into an adjacent building housing two Cat 3520C gas generator sets that convert the gas to electricity. The generated power is then sold to Idaho Power Company for distribution to the main grid. Rated at 1600 kW at 1200 rpm, each 3520C generator set is specifically designed to operate on biogas, eliminating the need for fuel pretreatment. One of the generators runs

continuously while the other unit runs variable hours following biogas production. Both feed power to an electrical transformer located outside the building. Exhaust heat from the engines is used to heat the six digesters.

"On the environmental side, this technology is something that I think will help us survive as a dairy," said dairy owner Louis Bettencourt. "There is less odor from the dairy, which is good for our neighbors, and the harmful greenhouse gases don't escape into the atmosphere."

New Energy One, a subsidiary of local Cat dealer Western States Equipment Company, operates the Rock Creek Dairy power system and maintains a presence on site to support system operation. New Energy One works with an entire team of equipment suppliers, including technology and engineering supplier, Northern Biogas; material handling equipment supplier, Stanley & Company; and local Cat dealer, Western States Equipment, to address the project's ongoing operational needs.

**RESULTS**

Since August 2012, Rock Creek Dairy has been steadily providing more than 2 MW of power for distribution on the grid as part of a power purchase agreement with the local utility. Once the operation reaches full-tilt and both generators are running continuously, Rock Creek Dairy's generation capacity will double to 4 MW of power. New Energy One and Western States are looking at other uses for the heat from the generators, including heating greenhouses at Rock Creek Dairy.

While dairies in Idaho are not currently mandated to reduce methane gas emissions, the anaerobic digester system at Rock Creek

# POWER PROFILE

**Customer:** Bettencourt Dairies

Dairy will prevent 40,000 tons of methane from being released into the atmosphere every year.

“The true value of this project is its ability to serve as a model for the Idaho dairy industry for long-term sustainability, from both the environmental and business perspectives,” said Onaindia. “We want to be here for the long term, and we view this project and this technology as important to our future.”

For more information, please visit [cat.com/powergeneration](http://cat.com/powergeneration)



*Methane gas is collected from Rock Creek Dairy and piped into two Cat® 3520C gas generator sets that convert the gas to electricity, which is then sold to Idaho Power Company for distribution to the main power grid.*