Milk Company Powered by 4,000 Cows

Cow manure is being converted to energy at the first biogas cogeneration plant in the Ukraine. The facility, which is powered by 4,000 cows and a GE (NYSE: GE) Jenbacher gas engine, has recently completed nine months of successful operation at the Ukrainian Milk Company Ltd., located near Kiev.

The excess power produced at the plant is being sold to the grid. The Ukrainian Milk Company, which produces milk for baby nutrition products, received the license for selling power to the grid based on the “green” tariff, which is being approved by Ukraine authorities. According to the law, the “green” tariff is “a special tariff for electricity generated at the power plants with use of alternative energy sources.”

The new combined heat and power (CHP) plant is powered by a GE JMC 312 containerized cogeneration model gas engine and is able to substitute the equivalent of 1.2 million cubic meters of natural gas annually and, therefore, is projected to reduce the equivalent of 18,000 metric tons of CO2. Once converted into biogas, the manure from the cows produces 625 kW of electricity and 686 kW of thermal output.

The first stage of operation for the plant took place during the most severe winter in the last 20 years, with constant minus temperatures reaching -25°C to -30°C. Despite the cold temperatures, the operation of the plant remained at a favorable level.

Biogas offers customers several advantages. It provides an alternative disposal of dung, liquid manure and organic waste, while simultaneously harnessing them as an energy source, a substitute for conventional fuels. It also has the high potential for reduction in greenhouse gases and is highly efficient for combined on-site power and heat generation. In addition, the remaining substrate from the digester can be used as high-quality, agricultural fertilizer, characterized by neutralizing the acid effect with a higher ph-value, keeping nutrients retained and nearly odorless.

“The disposal and treatment of biological waste represents a major challenge for the waste industry. Our Jenbacher biogas-fueled gas engines improve waste management while maximizing the use of cow manure, an economical energy supply,” said Prady Iyyanki, CEO-gas engines for GE Power & Water. “We are pleased that our technology is a part of the first biogas plant in operation in the Ukraine and applaud the region for seeking new renewable and alternative ways to create cleaner energy.”

GE has several biogas projects throughout the world. China has adopted both cow and chicken manure applications. Once completed, the recently announced project at the Liaoning Huishan Cow Farm in China will become the world’s largest biogas project based on cow manure. In addition, GE’s Jenbacher gas engines are using biogas created from chicken manure to generate needed power and heat at the Beijing Deqingyuan Chicken Farm Waste Utilization Plant, a large chicken farm north of Beijing, and in July 2009, GE’s biogas engines began to power China’s largest chicken waste biogas-energy plant at the Minhe Animal Husbandry.

Cow manure also is helping to address northwestern India’s mounting energy environmental needs and is allowing a U.S. dairy farm to support the expansion of renewable energy production. A GE Jenbacher biogas engine is powering a successful demonstration cattle manure-methane cogeneration plant at Haebowal, a large dairy complex in Punjab, India, while GE’s biogas engine technology is generating 633 kilowatts of renewable energy at United States-based Crave Brothers Farm, LLC, in Waterloo, Wisc. Crave Brothers has been able to reduce operational costs and the environmental impacts of its dairy operations, and the surplus power it sells to the regional grid helps support the expansion of renewable energy production.

ZORG is a leading supplier of turn-key biogas solutions in the Ukrainian market. The company offers a full range of engineering services for biogas, as well as designs,

builds and produces biogas plants. ZORG works globally and currently has a number of projects in CIS countries.

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