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B.C. technology converts cow patties into natural gas

VANCOUVER -- A Burnaby company that purifies methane gas from waste believes it has seen the future -- cow patties.

By Times Colonist (Victoria) January 3, 2007



VANCOUVER -- A Burnaby company that purifies methane gas from waste believes it has seen the future -- cow patties.

QuestAir Technologies Inc. has installed one of its methane purifiers, called the M-3200 system, to convert methane generated from animal waste to pipeline-grade natural gas at the Scenic View Dairy in Fennville, Mich. -- home to 2,700 cows.

The project -- the first of its kind in the U.S., according to QuestAir -- is expected to generate enough energy to meet the needs of between 100 and 200 homes.

"This is a North American first for purifying (methane) to pipeline grade natural gas and injecting it right into the natural gas pipeline," company president Jonathan Wilkinson said. He added it will start up by early this month. "We're creating natural gas, which can be used for electricity, transportation and a number of other things."

Quest-Air's system was purchased by [Phase 3 Developments & Investments LLC](#), a developer of renewable energy projects in the agricultural sector, as part of a plant that generates pipeline-grade methane as well as electrical power from anaerobic digester gas.

(Waste is fed into the anaerobic digester and QuestAir's M-3200 then purifies the methane produced by the digester).

Methane from the plant will be injected into the local natural gas distribution grid operated by Michigan Gas Utilities, a natural gas utility serving 162,000 customers in southern Michigan.

Wilkinson also said there's plenty of room for growth, noting that more than 1.4 billion tonnes of manure and other organic wastes are produced by the agricultural industry in the U.S. alone each year.

He said systems such as the one used in Michigan offer the potential to not only produce renewable energy from these wastes, but also to produce environmentally friendly organic fertilizers that can be reused in the agricultural sector.

Wilkinson wasn't specific on how much money the Michigan project is worth to QuestAir, only that each system typically sells for about \$200,000. "This is an emerging market. We hope to see it grow to five or 10 (systems) a year and then multiply."

Wilkinson said that while QuestAir will make a profit through its Michigan sale, the company will not get any revenues from the sale of methane into the local natural gas distribution grid.

QuestAir's director of corporate development Andrew Hall said that each cow typically produces about one cubic metre of methane gas per day. That, he said, translates into one cow producing about 900 kilowatt hours of electricity per year -- or about five to 10 per cent of the power used by a typical home annually.

"You're killing two birds with one stone," he added. "You're taking manure and turning it into a much more benign, environmentally friendly product. You're also getting treated waste, which is a much more environmentally friendly product for the farmer to spread on the field."

Norma McDonald, operating manager of Phase 3, said that QuestAir was chosen because of its advantages in cost, performance, operation and maintenance.

She said that while the concept of extracting methane gas from animal waste is well established in Europe, it's a new industry in North America. "This system (at Scenic View Dairy) will generate about 350 cubic feet of biogas per minute. It generates about 13 million BTUs per hour. At today's prices, that's worth about \$750,000 worth of natural gas per year."

While QuestAir said the project is the first of its kind in North America to inject purified methane directly into the natural gas pipeline, the technology is not new.

Two years ago, for example, Saskatchewan started up its first electrical generation facility to run on methane gas produced by pigs.

In the U.S., there are approximately 100 farm-scale anaerobic digesters processing agricultural waste, with the U.S. Environmental Protection Agency estimating that the digesters could be installed at another 6,900 farms.

In Europe, there are more than 3,000 farm-scale anaerobic digesters processing agricultural wastes, according to the release.

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