Promising Practices

Businesses

Terryland Farms Inc. Aiming for Self-Sufficiency

Imagine eliminating odours on a farm while actually generating revenue. Sound crazy? It's not as crazy as you might think. Reducing odours is a side effect of biogas energy production, a form of energy generation that has been popular on farms in certain European countries for years and is catching on in Ontario as well. Terryland Farms Inc., located in St.-Eugène, Ontario (east of Ottawa), is a prime example of a farm that is seeing the benefits of this renewable energy.

This form of energy production puts power into the hands of family farms, instead of large corporations. George Heinzle, who owns and runs Terryland Farms Inc. with his wife Linda, started his farm with 20 cows in 1983, and now has over 280, along with solar panels and a biogas system. The 1000 m^3 biogas digester is fuelled by his cattle's manure.[1]

Biogas anaerobic digester

How it works: Manure and locally acquired food waste is put into the biogas system, which anaerobically (without oxygen) digests the products, releasing methane. The methane is then burnt and used to power a generator, which produces electricity.[2] As the system releases methane, it also produces a healthy fertilizer. When digesting the manure, anaerobic bacteria produce heat that kills off weed seeds and pathogens, leaving behind good fertilizer that reduces the Heinzles' reliance on pesticides.[3]

The biogas system "reduces odours by up to 95%, pathogens by 97%, and improves the fertilizer value of processed manure."[4]

George Heinzle's interest in being self-sufficient in his energy use precedes the *Green Energy and Green Economy Act*. In 2002, he and his brother Josef, owner of Pinehedge Farms, started looking into biogas, visiting farms in Europe and a local small-scale biogas project in Ontario. In 2005, they applied for a Rural Economic Development (RED) program grant that would help both of them establish biogas systems. They received a combined $292,500 from the RED program, with the stipulation that their farms be open for use by the Alfred campus of the University of Guelph for site tours, soil testing and digester system studying.

At the time of their grant application, there was no province-wide initiative that would allow them to sell back their electricity to the grid. One year later, the Renewable Energy Standard Offer Program (RESOP) was introduced, followed by the Feed-In-Tariff (FIT) program in 2009, which has enabled the Heinzles to expand their projects and generate revenue from their initiatives.[5]

George Heinzle's biogas system cost approximately $400,000. Heinzle was upset with the pricing of biogas power determined by the Ontario Power Authority (OPA) for the RESOP, which at 11 ¢/kilowatt hour (kWh), or 14.5 ¢/kWh at peak hours, made the digester "barely profitable." He advocated for a minimum price of 15 ¢/kWh.[6] Prices were increased for the FIT program that succeeded the RESOP.[7]

Terryland Farms' biogas system produces about 750 kilowatt-hours of electricity per day enough electricity to power 100 homes. From the biogas system alone, the Heinzles generate $24,000 a month in revenue. They added a second generator to double the electrical output.[8]

Heinzle points out that the biogas production in Germany is equivalent to the energy generated by a nuclear reactor. He sees potential for Ontario to head in that direction as well, and hopes that this form of

renewable energy will be able to provide the province with an alternative to nuclear power.[9]

Solar Power

It was after they had decided to invest in a biogas system that the Heinzles realized they had the opportunity to put up solar panels on their roofs to generate income from not one, but two contracts with the Ontario Power Authority (OPA) through the FIT program for both biogas and solar energy. (The FIT program also gives contracts to producers of wind and hydroelectic power.) After getting approval from the OPA, they equipped three of their five barns with solar panels on their roofs for a total capacity of 127 kilowatts (kW).[10] The revenue generated by a project of this scale is 71.3¢/kWh.[11]

Biodiesel

Beyond implementing renewable energy and thus reducing biological waste, the Heinzles also seek to be more self-sufficient in farm operations. They purchased an Energrow processor, which transforms the farms' soybeans into soymeal pellets and extracts oil separately. This saves the farm having to pay for the use of a local mill while also enabling the Heinzles to feed their cattle fresh feed that has not crossed many hands. The Heinzles combine the oil with diesel fuel to use on the farm.[12]

Given the Heinzles' drive to be leaders of the environmental movement in Ontario, it is not surprising that in February 2010, Terryland Farms Inc. was recognized by the Canadian International Farm Show with one of three Producer of the Year Awards. These awards are given to recognize innovation in the field that have increased productivity and profitability.[13]

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[5] Supra note 3.
[6] Supra note 4.
[7] Ontario Power Authority. "Biogas: Quick Facts Table." Website text. http://fit.powerauthority.on.ca/quick-facts-table. Accessed July 2011.
[8] Supra note 2.
[9] Supra note 3.
[10] Supra note 1.
[11] Ontario Power Authority. "Solar PV: Quick Facts Table." Website text. http://fit.powerauthority.on.ca/quick-facts-table-0. Accessed July 2011.
[12] Supra note 2.
[13] Ibid.