Featured Member - Grimsby Energy

Written by the Canadian Biogas Association
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Since it began operation on August 10th, Grimsby Energy's anaerobic digester in Grimsby, Ontario has been continuously generating electricity from agricultural waste. Grimsby Energy was incorporated in 2000 and is a subsidiary of the Town on Grimsby along with the wires company, Grimsby Power. The idea for Grimsby Energy to generate electricity using anaerobic digestion originated in 2009 when the board of directors of Grimsby Energy, including co-chairs Joe Panetta and Shafee Bacchus, were looking for avenues to raise more revenue for their shareholders.

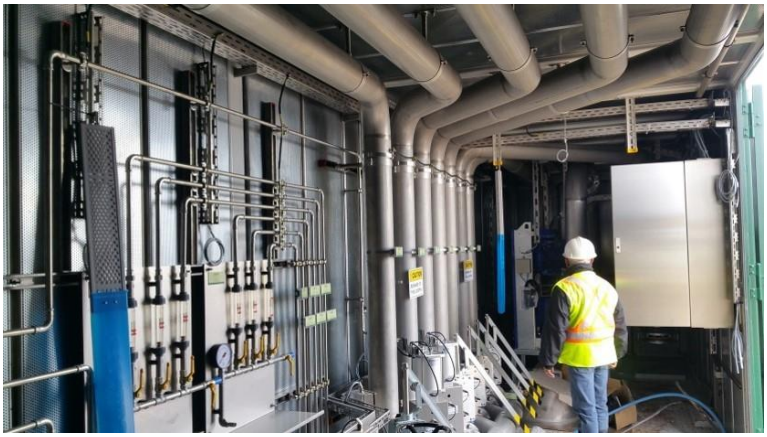
The board was interested in participating in the IESO's recently announced Feed-in-tariff (FIT) program. They considered wind or solar power, but then they looked at the project landscape in Germany with 4,500 operating anaerobic digesters. Panetta and Bacchus were drawn to the concept of digesters that took organic waste materials, crop residues and manures and created electricity that went directly to powering homes and provided enhanced nutrient value to the soil.

Grimsby Energy applied for and was awarded a 20-year 1 MW FIT contract in 2010, and received approvals in 2014 after going through a lengthy process involving 16 government bodies. They began construction in May 2016. The German company Novatech were the engineers that designed the plant and supplied machinery, motors, digesters, and agitators. The digesters were installed from February to July of this year, and the facility received TSSA approval in mid-July. On the 20th of July, the tanks were loaded with 300,000 gallons of manure to start the process, and the facility began producing and flaring low-quality biogas about 10 days later. On August 10th, they officially started producing electricity and generating revenue.

Their feedstock currently consists of corn stalks and silage, hay, wheat, peppers, grape pumice, fats oils and grease. The digester will be fed approximately 24,000 tonnes annually of these organics sourced from local farmers and businesses. There has been a lot of interest in the facility from local farmers. Grimsby Energy secured most of their feedstock through canvasing and engaging directly with the local farming

community, offering some farmers the return of digestate to spread on their fields for every tonne of feedstock they provide.

The design of the Grimsby Energy plant is the first of its kind in Canada and was planned to accommodate harsh Canadian winters. The digester tanks are embedded 18 feet underground and the bladder that holds the biogas can be enclosed in an 80ft by 40ft building to protect it from hail, ice and snow. While this unique feature added some cost, it will make for more cost-effective operation in the wintertime as there will be less maintenance requirements and the tanks will retain more heat being underground.



Joe Panetta is currently the project manager and board member of Grimsby Energy. He has worked in the project since it's inception and oversaw the commissioning of the plant this year. He is impressed with the outcome and benefits of the projecting sharing that "This is a fascinating project and everyone should take a look at this concept, especially with the government considering a ban on organics going to landfills. The great thing is that the digestate is 100% fertilizer that goes back to the earth." As for plans for the future, Panetta shares that they are considering generating renewable natural gas (RNG) as the facility has the capability to produce more gas. There is also a tremendous amount of excess heat generated, and they are looking for ways to harness the resource.

Grimsby Energy became members of the Canadian Biogas Association (CBA) in May of this year. They find CBA's resource very useful and joined as they feel the association is vital to moving the industry forward in the upcoming years through advocating for the environmental and economic benefits of biogas. Panetta notes that "The CBA is a great avenue to get to know what is happening in our industry from coast to coast, new technology, products, informative articles, and to keep us up to date on current events."

About the Canadian Biogas Association

As the collective voice of Canada's biogas sector, the Canadian Biogas Association is developing the biogas industry to its fullest potential through capturing and processing organic materials to maximize the utility and value inherent within that material. Our members span the entire value chain of the sector and consist of farmers, municipalities, and private sector owners and operators of biogas systems, technology suppliers and consultants, financial and learning institutions, utilities, and waste industry and organic residuals generators.