

Forest County Potawatomi Community Renewable Generation - Biogas Facility Milwaukee, WI

Owner: FCPC Renewable Generation LLC
Developer: FCPC Renewable Generation LLC
Contact: Charles Opferman, 414-290-9413, copferman@greenfirellc.net

"The traditional values of the Forest County Potawatomi Community teach us to respect all living things, to take only what we need from mother earth and to preserve the air, water and soil for our children."-FCPC Environmental Mission Statement, adopted 2007. A DOE grant of \$2.6M in 2011 initiated development of this plant. At 2MW, the merchant plant has 5 feedstock tanks to sort supply, an equalization tank to mix and hold, and two 1.3M gallon anaerobic digesters. Digesters are continuously stirred and can process 132,000 gal./day. The two 1MW engines, unloading bays, gas skid, heat exchangers and solids processing are all enclosed with biological odor control. The facility is located in an urban area, on a former tamarack swamp, on a brownfield site, adjacent to the Potawatomi Hotel and Casino, which supplies food waste and receives power and heat for use on site.

Organizations involved: *Greenfire Management Services LLC*, Miron Construction Co., Inc., Symbiont Science, Engineering and Construction, Inc., Biothane, LLC, Veolia Water Solutions*, Natural Systems Utilities, LLC**



FCPC facility center left
Potawatomi Hotel tower and Casino right



Milwaukee, WI

*ABC member

Inputs and Outputs

Biogas production:	The plant was designed to operate at 516 SCFM. The highest recorded gas flow from the plant is 1,243 SCFM. Maximum output of the engines is 2MW.
Feedstock(s):	Liquid food waste + organic byproducts of food processing industries, including beverage, dairy, meat, processed food + other byproducts of industrial food crop processing
Products:	Electricity, Heat, digested liquids and solids
Digestate Management:	Solids are land applied as soil amendment for local farm in lieu of paying for tipping. No room on site to dry and process as soil amendment. Ammonia rich centrate is discharged to local sewerage district that reclaims what it can in traditional tertiary WWTP. Neither generate revenue.

Finances, Beneficiaries, and Expansion

Project financing:	US DOE Community Renewable Energy Deployment Program We Energies Focus on Energy American Recovery and Reinvestment Act Grant FCPC Renewable Generation LLC
Customer(s):	We Energies Potawatomi Hotel Casino (PHC)
Environmental and economic beneficiary:	Forest County Potawatomi Community is the economic and primary environmental beneficiary. The State of Wisconsin and City of Milwaukee are also environmental beneficiaries.

Long Term Plans:

Currently upgrading solids retention technology for the digesters. Upon completion and demonstration of stable gas production above IC generation requirements, will install gas compression and storage facilities for renewable CNG filling station. Will convert existing Potawatomi Hotel & Casino fleet to CNG operation and can sell excess fuel to local sewerage district which also has CNG fleet.

Photos



Image 1: View of plant from overhead during construction

Image 2: Feedstock tank farm, biological air filter, EQ tank and digesters



Image 3: 1.3 M gal continuously stirred tank reactor, incoming and outgoing transformers



Image 4: Two 1 MW engines