



Milwaukee Biodigester and Biogas Facility

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“Let us share our natural resources for the good of our People. Let us work for clean air and water and pray for the courage to stand up to those who would abuse our Mother Earth. So be it.”

-Bemwetek (Elder James Thunder)

Excerpt from 2007 Class I Air Redesignation Public Hearing Prayer

Background

- Elders, culture, and traditions confirm a duty to protect and enhance environmental resources, both on and near the reservation and throughout the world
- Elders noticing changes in environment (e.g., fish, medicine/plants, and habitat)
- Duty formalized into an Environmental Mission Statement
 - *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. Reflecting these values, we take leadership in creating a sustainable and healthy world. We resolve to reduce our own environmental impacts and to take steps to remedy the impacts of others. We encourage others to do the same. We also seek legislative and policy changes that protect the environment for all people, including generations to come. (Adopted November 20, 2008)*

Project Greenfire

- At core of Environmental Mission
- Establishes a goal of energy independence using carbon-free or carbon-neutral renewable resources
- Energy audit to establish a baseline of energy use and to identify projects (list of 100) to reduce carbon footprint
- Purchased RECs (from wind) to offset energy as bridge to energy independence
- Initial focus on the low-hanging fruit: energy efficiency
- Realized the need to produce own energy in order to meet goals
- Obtained \$2.6M of competitive funding through the Department of Energy's Community Renewable Energy Deployment ("CRED") program
- Started small: installed 30 kW solar photovoltaic panels at Milwaukee Administration Building during the 3rd quarter of 2011



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RENEWABLE ENERGY FACILITY
 EPIC RENEWABLE
 GENERATION, LLC
 MILWAUKEE, WISCONSIN

AERIAL VIEW

SHEET	--
NO.	03-32389
DATE	7-23-2012
PROJ.	32389

Biodigester and Biogas Facility

- **Overview**
 - 2.0 megawatt anaerobic biodigester and biogas facility located near Potawatomi Bingo Casino in Milwaukee, WI
 - Will operate on liquid (pumpable) food wastes
 - Will generate revenue from a combination of tipping fees and electricity sold through a WE Energies Tariff
 - Anticipated Partners: Miron Construction Co., Inc., Symbiont, Biothane LLC, Veolia Water, and Advanced Waste Services, Inc.
 - Presents a host of challenges, including the following:
 - Funding
 - Permitting and Siting
 - Sourcing
 - Operating
 - Timing

Funding

- **Section 1603 Grant**
 - Owned by FCPC Renewable Generation, LLC, a taxable entity
 - Purchased two GE/Waukesha generators in 2011 to qualify for safe harbor
- **Remaining CRED Funding**
 - Grant terms and conditions limit flexibility
- **Focus on Energy Grant**
- **New Market Tax Credits**
 - No allocation for FY 2013 yet
- **Securing remaining funds?**
 - Third party financing could eliminate profit

Permitting and Siting

- Approvals Triggered by CRED funds
 - NEPA Review
 - Section 106 of NHPA
 - Confirmation for State Historic Preservation Officer and Tribal Historic Preservation Officer
- Approvals Related to Nature of Site
 - Submitted certified survey map to divide parcel into three parcels
 - Facility on middle parcel to avoid operating on land with residual contamination from historic operations
 - Permit to construct on historic fill
- Other Construction Permits
 - Air permit
 - Stormwater permit
 - Wastewater permit

Sourcing

- Merchant facility without guaranteed supply
- Market research indicates sufficient supply available, but it is difficult to obtain long term contracts
 - Teaming with company to identify and secure required feedstock, but challenges remain
 - Market resistance to long-term contracts that would guarantee supply
 - Suppliers' reluctance to commit before project becomes real
- Quantity and quality requirements
 - High chemical oxygen demand (COD) required for electricity generation
 - Economics of project require a tipping fee
- Unknown how available feedstock will change in future
 - Second reactor added during RFP process to allow for wider array of potential feedstock and maximize operational flexibility

Operating

- Unlike solar or wind projects, requires significant operation and maintenance
- Cannot interfere (noise, smell, traffic) with casino operations
 - Pumpable wastes reduce smell and allow for ease in operation but reduces potential feedstock supply
- Unknown cost to dispose solids
 - Difficult to identify an outlet without having sample, so assuming worst case

Timing

- Action required now . . .
 - To qualify for tariff
 - Construction commenced by November 2, 2012
 - Operate the generators and establish interconnection with WE Energies system by May 2, 2013
 - To qualify for Section 1603
 - Need to place in service by end of 2013
 - CRED grant expires September 30, 2013
- But
 - Feedstock supply is not guaranteed
 - New Market Tax Credit allocation has not been secured and new allocations have not been authorized
 - Funding challenges, especially when considering other projects

Conclusions

- Important project for region as it would remove waste streams and provide clean energy
- Important project for the Tribe's energy goals
- Challenges remain, but we expect to break ground in September
- Solar was easier