

PMC-EF2a

(20102)

**U.S. DEPARTMENT OF ENERGY  
EERE PROJECT MANAGEMENT CENTER  
NEPA DETERMINATION**



RECIPIENT: Ohio Department of Development

STATE: OH

PROJECT TITLE : Lime Lakes Energy

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
	DE-EE0000165	GFO-0000165-031	GOO

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

**CX, EA, EIS APPENDIX AND NUMBER:**

Description:

**B5.1** Actions to conserve energy, demonstrate potential energy conservation, and promote energy-efficiency that do not increase the indoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, designers), organizations (such as utilities), and state and local governments. Covered actions include, but are not limited to: programmed lowering of thermostat settings, placement of timers on hot water heaters, installation of solar hot water systems, installation of efficient lighting, improvements in generator efficiency and appliance efficiency ratings, development of energy-efficient manufacturing or industrial practices, and small-scale conservation and renewable energy research and development and pilot projects. The actions could involve building renovations or new structures in commercial, residential, agricultural, or industrial sectors. These actions do not include rulemakings, standard-settings, or proposed DOE legislation.

**Rational for determination:**

DOE is proposing to provide \$1,000,000 in SEP ARRA funding to the Ohio Department of Development, who would allocate these funds to Lime Lakes Energy for purchase and installation of an anaerobic digester. This facility would be located at 1740 Vanderhoof Road, Barberton, Ohio 44203 (40.9703329, -81.5871915). Prior to this NEPA review, six projects, similar in scope, have been reviewed and categorically excluded under B5.1, "actions to conserve energy."

The proposed facility would be located on PPG, Industries owned land. For more than seventy years, PPG produced soda ash to make plate glass. The liquid solid wastes were pumped from the soda ash operation into six ponds creating lime lakes. Lime lakes are too alkaline to support vegetation. Quasar Energy Group and PPG have partnered together to manage the Lime Lakes Reclamation Project. Since 1985, biosolids have been mixed on site with the lime spoil to create a stable soil matrix that supports long-term vegetation growth and wildlife habitat. PPG has won numerous awards for its reclamation efforts, including national certification from the Wildlife Habitat Council. The reclaimed lakes are designated as a Wildlife at Work certified site.

The proposed project would include installation of the following components with a footprint of less than 1 acre:

- 750,000 gallon dual purpose tank
- Combined heat and power unit (generator)
- Pump container
- Storage container
- Liquid effluent tank
- Biomass equalization tank
- Two, 12,000 gallon underground receiving tanks
- Transformer

The proposed project would use 52 wet tons/day or 19,017 wet tons/year of biosolids and switchgrass to operate the digester. Biogas generated from the anaerobic digester would be routed to the combined heat and power (CHP) unit consisting of a biogas-fired reciprocating engine and generator with a capacity of 800kW of electrical energy, while sending thermal energy (heat) back to the digester and the dryer. The digester electricity would first go through a step-up transformer from 480V to 12.4kV. Electric cable would run through a concrete encased PVC conduit for approximately 300 feet. A net metering agreement would exist between the digester and the utility serving the location.

This facility would be located at an existing lime lake that is being reclaimed and revegetated. The proposed site



location is flat and wooded. The proposed facility would be located on the southeast corner of the lime lake. Ground disturbance would be temporary during the construction process. There are no nearby rivers, streams, or other bodies of water that would be adversely affected by potential erosion and sedimentation. Located adjacent to the proposed facility are additional lime lakes, a municipal wastewater treatment plant, vacant fields and woods, the Ohio-Erie Canal Park, and isolated residences. The closest residence is 600 feet from the proposed digester site.

**New Facilities and Infrastructure** – The infrastructure for the proposed digester would consist of a 750,000 gallon dual purpose tank (62ft diameter x 63ft height), a combined heat and power unit (40ft length x 10ft width), a pump container (40ft length x 10ft width), a storage container (20ft length x 10ft width), a liquid effluent tank (15ft diameter), a biomass equalization tank (15ft diameter), two 12,000 gallon underground receiving tanks (17ft length x 9ft width x 14ft depth), and a transformer. Foundation depth would be 4 feet. Other ground disturbance related to the project would be a 500ft x 40ft gravel drive for unloading and 300ft of trenching for electrical conduit from the transformer to the existing power line.

**Traffic** – Inputs to the facility would be delivered by trucks and tanker trucks. Switchgrass would be grown on vegetated lime lakes and cultivated as an energy crop. The facility would generate digestate, which would contain plant nutrients (NPK) and organic matter. The digestate would be utilized on-site for the lime lake reclamation project. No trucking or shipping of digestate would be necessary. This is an all-weather site and storage is not required. Biogas stays on property to run an 800 kW CHP to make renewable energy. The anaerobic digester would be operating at a reclamation site with regular truck traffic. The reclamation site is currently accepting regular loads of biosolids that are mixed with lime spoil to encourage vegetative growth. The reclamation facility accepts between 10 to 12 loads each day of regional biosolids. Approximately 25% of these existing loads would be diverted to the anaerobic digester for processing. Waste in the capacities outlined above represents approximately 3-4 tanker trucks or dump trucks per day delivered from within a 60 mile radius of the facility.

**Noise** – Noise attenuation from the generator would be handled by a container. Noise levels at two meters are estimated at 68db. The nearest residence is 600ft away from the proposed digester.

**Air Quality** – The recipient is in the process of obtaining a Permit to Install and Operate from the Ohio EPA. This permitting process would assess potential impacts from all sources of emissions resulting from the proposed anaerobic digestion facility including storage of feedstock and electricity generation. It is expected that the diversion of waste materials, currently being incinerated or sent to landfills for disposal, to the proposed anaerobic digestion facility would have a beneficial impact to air quality as all gas from the digestion process would be intentionally captured where emissions from incineration and landfills go directly into the atmosphere. "U.S. EPA recognizes in its waste management hierarchy that technologies for recovering energy from waste are preferable to simply incinerating waste or disposing of waste in landfills. This is due to the benefits associated with waste-to-energy technologies. Chief among these benefits are lower pollution emissions, creation of alternatives to fossil fuels, and reduced reliance on landfills" (2009 State Solid Waste Management Plan, Ohio EPA DSIWM. Pg.16). There would be a net decrease in odor as the incoming biomass would be placed into the in-ground receiving tank, which is enclosed. The displaced air, when material is being received, would be sent to a bio-filter. The anaerobic digestion process would break down the volatile organic solids in the biomass that are responsible for the offensive off-gassing of hydrogen sulphide in the air at landfills where waste is currently disposed.

**Permits** – The site has an NPDES permit in place for storm water (Document attached).

**Biological Resources** – The proposed site is within the Indiana bat range. As part of the WHC certification process, a wildlife census is conducted every four years. The Greater Audubon Society 2004 and 2008 censuses for birds and mammals indicated that Indiana bats were not identified at the proposed location. The trees at the proposed site are primarily pine with some deciduous trees. The trees are less than six inches in diameter and are not rough bark species, therefore, the on-site trees are not likely to be roost trees.

The Ohio Department of Natural Resources, Division of Wildlife (DOW) has reviewed the "Indiana Bat (*Myotis sodalis*) Survey, PPG Lime Lakes Reclamation Site, Franklin Township, Summit County, Ohio" report dated June 2011. The survey was conducted by a surveyor approved by the U.S. Fish and Wildlife Service. The survey indicated four little brown bats (*Myotis lucifugus*) and two Eastern red bats (*Lasiurus borealis*) were captured. No Indiana bats (*Myotis sodalis*) were captured during the survey. In an email dated June 28, 2011, David C. Henry, Wildlife Biologist at USFWS asserted "[t]he survey demonstrates probable absence of Indiana bats at the project site. Therefore, we do not object to clearing trees on site this summer season, as proposed. Survey results are valid for two years (i.e., until September 30, 2013). If any tree clearing is necessary after September 30, 2013, we request that you coordinate with our office to determine if additional surveys are needed."

**Cultural Resources** – The Ohio State Historic Preservation Officer has reviewed a detailed application and agrees that historic and/or archeological buildings and/or assets such as Native American protected lands (burial grounds) are not present; therefore, the proposed project would not result in adverse effects to cultural resources (Documentation attached).



In view of the information provided by the recipient, DOE has determined that the impacts related to the proposed project are anticipated to have negligible effects on the human and natural environment. The proposed project is consistent with actions outlined in B5.1, "actions to conserve energy," and is, therefore, categorically excluded from further NEPA review.

**NEPA PROVISION**

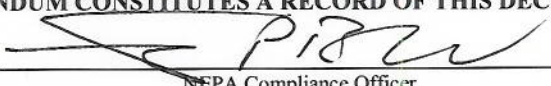
DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

Cristina Tyler 7.5.2011

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature:   
NEPA Compliance Officer

Date: 7/5/11

**FIELD OFFICE MANAGER DETERMINATION**

Field Office Manager review required

**NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:**

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

**BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :**

Field Office Manager's Signature: \_\_\_\_\_  
Field Office Manager

Date: \_\_\_\_\_