PMC-EF2a
(2.04.02)

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

RECIPIENT: Ohio Department of Development **STATE:** OH

PROJECT TITLE: Northwest BioEnergy

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-EE0000165	GFO-0000165-032	GO0

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:

Proposed Project – The Ohio Department of Development would allocate $1,000,000 in SEP ARRA funding to Northwest Bioenergy for purchase and installation of an anaerobic digester near Toledo, OH. The project involves 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 will use 90 wet tons/day or 32,850 wet tons/year of feedstock to operate the digester. All other sources of biomass will be delivered in dump and tank trucks. The facility would generate digestate which will contain plant nutrients (NPK) and organic matter. 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 1200kW of electrical energy while sending thermal energy (heat) back to the digester and the dryer. The digester electricity will first go through a step-up transformer from 480V to 12.4kV. Electric cable will run through a concrete encased PVC conduit for approximately 300 feet. There will be a net metering agreement between the digester and the utility serving the location. The digestate will be stored on-site in a lagoon or tank or hauled out as generated to off-site lagoons/storage tanks located approximately 15-25 miles away and land applied seasonally when field conditions allow for beneficial agronomic application rates. The recipient has a standing agreement with Synagro to land apply effluent from the digester system. During winter months, when land application is not possible due to OEPA regulations, agreements with existing regional lagoons will be established to accept digestate/effluent from the digester. Approximately 75% of the biogas generated will be used to run a 1,200 kW CHP to make renewable green energy. The remaining 25% will be used to generate Compressed Natural Gas (CNG) when run through 100 scfm equipment provided by Biogas Technologies Unlimited (BTU). CNG will be used to fuel vehicles onsite.

New Facilities and Infrastructure – This facility will be located at a yard waste compost facility. Adjacent activities include agricultural fields, vacant and wooded land, a railroad track, heavy industry and commercial operations, and residences. The infrastructure for the proposed digester 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 is typically 4 feet. Other ground disturbance related to the project will be 300ft of trenching for electrical conduit from the transformer to the existing power line. The proposed site location is flat, ground disturbance will be temporary for the construction process, and there are no nearby rivers, streams, or other bodies of water that would be adversely affected by potential erosion and sedimentation. Per FEMA floodplain map # 39095C0083D (attached) the Northwest BioEnergy site is out of the 100 year flood plain. The attachment shows where the driveway comes in on the west side of the road. The location of the facility is market with an X on the attached floodplain map. The site has coverage under the State General Stormwater Permit (surface water) from the former yard waste compost facility. The County Building Department has issued a building permit and the site is zoned for this use. Adverse visual effects are not expected from the installation of the digester as there are other large, existing industrial facilities in the immediate and surrounding area. Noise attenuation from the generator will be handled by a container. Noise levels at two meters are estimated at 68db. The nearest residence is 2,000ft away from the proposed digester. Waste in the capacities outlined above represent approximately 4-5 tanker
trucks or dump trucks per day delivered from within a 60 mile radius of the facility. In addition, approximately 5 trucks per day will manage the system's digestate effluent. Truck traffic to and from the digester will be a negligible increase to the traffic that existed previously for the compost facility. There will be no net increase of traffic as the trucks would normally be taking the feedstock to a landfill.

Air Quality – The recipient is in the process of obtaining a Permit to Install and Operate from the Ohio EPA. This permitting process will 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 will 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 will be a net decrease in odor as the incoming biomass would be placed into the in-ground receiving tank which is enclosed, and 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.

Biological Resources -- The Ohio Dept. of Natural Resources and the U.S. Fish and Wildlife have been consulted and determined that the proposed project will not result in adverse effects to threatened and endangered species (Documentation attached).

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 will not result in adverse effects to cultural resources (Documentation attached).

After a thorough review of the information submitted for the proposed project, it has been concluded that the proposed project will not have a significant impact to human health and /or the environment. Therefore the proposed project is hereby Categorically Excluded under B5.1 "actions to conserve energy."

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

EF2a completed by Logan Sholar

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 5/17/11

NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION