PMC-EF2a

(2.04.02)

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

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

PROJECT TITLE: SEP ARRA - Haviland

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	EE0000165	GFO-0000165-018	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 Haviland Bioenergy for purchase and installation of an anaerobic digester near Haviland, 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
- 12,000 gallon underground receiving tank
- Transformer

The proposed project would use 75% cow manure and 25% FOG waste feedstock at the beginning of operations and move to a 50/50 mixture over time. The cow manure is currently being stored in lagoons at the Van Erk dairy and the FOG waste is currently being sent to regional landfills or processed by waste water treatment plants. 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 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. At this point, the electricity would transfer from underground to existing overhead wires for approximately 200 feet to the tile factory. Once the electricity reaches the tile factory's transformer, it would return to 480V. There would be a net metering agreement between the tile factory and the utility serving the location.

New Facilities and Infrastructure – The site location for the proposed project is an actively farmed agricultural plot that is disturbed for farming activities. The land is owned by the Van Erk Dairy the main operations of which are located two miles away. The Ohio Dept. of Agriculture has permitting responsibilities for the proposed project and has issued a letter of clearance for the proposed installation of the digester and related activities (Documentation attached). The ODA review follows Ohio Administrative Code for Environmental Livestock Permitting 901:10-2-02 which addresses impacts to surface and ground water, floodplains, karst, and neighboring residences. The site location is directly across the street from Haviland Drainage, a large, drainage tile manufacturing facility, which would be the recipient of the electricity generated by the proposed digester. 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), a 12,000 gallon underground receiving tank (17ft length x 9ft width x 14ft depth), and a transformer. Foundation depth is typically 4 feet. Other ground disturbance related to the project would be a 250ft x 40ft entrance and exit road for unloading of feedstock and 300ft of trenching for electrical conduit from the transformer to the existing power line. The proposed site location is flat, ground disturbance would 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. The site has coverage under the Ohio General Construction Stormwater permit. The County Building Department has issued a building permit and the site is zoned for this use.

Air Quality – The proposed project would be operating under an Ohio Dept. of Agriculture CAFO permit. OEPA/DAPC does not require an air permit for CAFO permitted facilities. CO2 emissions as a result of the proposed project would be offset by the methane that is emitted naturally into the atmosphere from the manure were it not to be sent to the digester. It is expected that the diversion of waste materials currently being incinerated or sent to landfills for disposal 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 the lagoons where the waste/feedstock is currently stored.

Biological Resources – The Ohio Dept. of Natural Resources and the U.S. Fish and Wildlife have been consulted and determined that the proposed project would 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 would not result in adverse effects to cultural resources (Documentation attached).

Adverse visual effects are not expected from the installation of the digester as there is a very large, existing industrial facility adjacent to the town and the proposed digester. Also, the digester infrastructure is physically similar to existing farm infrastructure that is commonly found throughout the area. Noise attenuation from the generator would be handled by a container. Noise levels at two meters are estimated at 68db. The nearest residence is 1,000ft away from the proposed digester and any noise would be negligible in comparison to operations at the existing drainage tile factory. Waste (feedstocks) in the capacities outlined above represent approximately 5 – 6 tanker trucks or dump trucks per day. In addition, approximately 5 tanker trucks per day will manage the system's digestate. Half of the estimated truck traffic can be attributed to normal dairy operations of land application of manure effluent. The digestate will be hauled out as generated to Van Erk Dairy lagoons located approximately 2 miles away and land applied seasonally when field conditions allow at beneficial agronomic application rates.

After a thorough review of the information submitted for the proposed project, it has been concluded that the proposed project would 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