PMC-EF2a
(2/04/02)

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

RECIPIENT: King County **STATE:** WA

PROJECT TITLE: Engine Generator for Enumclaw Dairy Manure Digestor

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000013	DE-EE0000854-003		EE0

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:

The County of King proposes to use EECBG funding for installation of an anaerobic digester "Rainier Biogas" in Enumclaw, King County, Washington.

The proposed Rainier Bogs activity is a joint venture between Farm Power, LLC and the Ritter Dairy, LLC and will install an anaerobic manure digester, a concrete receiving pit, and mechanical building with an attached fiber storage area and associated pipelines. The manure digester is a heated, concrete vessel that processes dairy manure and other organic wastes in an oxygen-free environment designed to induce digestion by anaerobic bacteria. The digested fiber solids are separated and dried and the majority of the fiber will be returned to participating dairy farms for use as cow bedding. Methane-rich biogas produced as part of the digester process will be burned in an onsite piston engine generator to create electricity for export to the Puget Sound Energy electrical grid and heat to warm the digester vessel to sustain bacteria growth.

Digesters require a large supply of manure nearby in order to make the facility economically efficient, cause minimal traffic impact, be located well away from residences (to avoid odor and noise effects) and provide beneficial services to farms. The proposed location lies between two closely spaced dairy farms, with several other dairy farms nearby. These farms will supply manure to the project and also have the necessary land to receive the digester's processed manure. The site is located within gravity-flow distance of an operational manure lagoon for emergency overflow purposes. The site contains some farm buildings on the west edge, and the remainder of the land is in active crop production. The site for the digester consists mostly of farmland and the surrounding area is in grass or corn crop production.

There is no known wildlife use of the site, and no significant vegetation other than agricultural crops. The traffic near the site is light and consists largely of agricultural vehicles. The surrounding land is all zoned Agricultural or Rural and is used as farmland or isolated homes Preliminary research indicates the land is flat and ranges between 641 to 644 feet above sea level. There are no known critical areas on the site, however there is an offsite unnamed stream that would be crossed by a planned manure pipeline between the project site and the Wallin Dairy.

The processed manure liquid returns to the farms via truck or pipe and is stored in existing farmers' lagoons and spread on fields in accordance with the Department of Agriculture's Livestock Nutrient Management Program. The digestion process kills insect larvae, bacteriological pathogens and weed seeds; it greatly reduces manure odor and breaks down macronutrients for faster plant uptake and reduced risk of nitrate runoff. Additionally, Rainier Biogas will install post-digestion microfilters and settling equipment to remove solids from the manure. This will result in reduction in manure macronutrients phosphorous and nitrogen. The harvested nutrients will be sold into various soil amendment markets or land-applied as manure on fields that can absorb the nutrients at an agronomic rate.

The anaerobic digester is 16 feet in height, with approximately 8 feet of buried structure and will be constructed on approximately 75x150 feet. Next to the digester will sit an approximately 50x40 pre-engineered steel mechanical building that houses the control equipment, electrical transfer equipment, and up to two continuous duty piston gensets that run on methane with a combined output of up to 1.5 megawatts. There will also be a 40x20 covered area adjacent to the mechanical building for a digested fiber solids collection truck and trailer. There will be an in-ground concrete receiving tank for receiving manure and other organic wastes. The existing on-site manure lagoon may also serve as a holding vessel for manures entering or leaving the digester. The project will install up to two sets of parallel pipelines as shown on the area imagery provided. These pipelines will deliver manure from the two partner farms and return processed manure to the farms' storage lagoons. These pipelines will be located and design in consultation with King County to ensure they meet all zoning and environmental requirements.

Manure from up to three other farms will be trucked to and from the digester during business hours 6-7 days per week. The average number of truck round trips per day will be 3, although if the project size is later increased this number could reach 8. This truck traffic is within norms for agricultural operations in the area, and will be largely offset by the elimination of the trucking of manure by farmers that currently takes place. The facility will also generate approximately one truck round trip per day for the hauling of digested fiber to farms. This traffic will be more than offset, since the digester's fiber will eliminate farms' need for sawdust bedding and the semi traffic its delivery creates. The project's engine will run continuously, but no noise or vibration is expected to be perceptible at the property line.

Based on the foregoing, the Rainier Biogas project is categorically excluded under NEPA under B5.1 Actions to Conserve Energy.

Air Quality:

Prior to construction, the project will submit a Notice of Construction to the Puget Sound Clean Air Authority (PSCAA), and it we expect to complete a New Source Review and operate the facility under an emissions permit from PSCAA. Excess methane gas from the digester is flared so that no combustible gas will be stored on site.

Stormwater:

The roads on site will be gravel, and there will be single access from 208th Ave SE. The estimated total impervious surface area of the facility, including the roof of the digester is 20,000 square feet. The site's storm water will be directed into the fields that surround the site on the north, east, and south. The site will be configured to direct all manure residues into the digester for treatment and disposal. Rainier Biogas will install postdigestion microfilters and settling equipment to remove solids from the manure, which reduce manure macronutrients phosphorous and nitrogen. The reduced nutrient content of the manure, as well as the reduction of chemical oxygen demand and significant reduction of manure fecal coliform will protect area water quality.

Solid Waste:

The digester facility itself will be operated in accordance with the Department of Ecology's Guidelines for Operating an Anaerobic Digester Exempt from Solid Waste Permitting requirements.

Cultural/Historic resources:

The site is not on the National Register, nor is it a "contributing resource" within a National Register district. No local cultural inventory sites have so far been associated with the site, but cultural resource surveys will be conducted prior to groundbreaking. If cultural resources are identified on site, the appropriate tribal or state authority will be contacted to determine appropriate handling of these resources.

Wetland and Waters:

The proposed pipeline from the project site to Wallin Dairy would cross an unnamed stream that is likely U.S. Army Corps of Engineers (USACE) jurisdiction and also under the jurisdiction of the Washington Department of Fish and Wildlife. Prior to ground breaking, King County will secure a USACE Clean Water Act Section 404 permit (if in-water work is necessary fir pipeline crossing) as well as Hydraulic Project Approval (HPA) [Chapter 77.55 RCW] from the Washington Department of Fish and Wildlife.

Floodplains:

According to current FEMA flood maps, no part of the site is in the 100-year floodplain. An elevation certificate will be obtained for each new building that requires it. According to NRCS data, the site's soil is about 90% Alderwood Gravelly Sandy Loam, 0 to 6 Percent Slopes, while the remainder is Buckley Silt Loam.

Prior to the expenditure of Federal funds to implement any of the above-mentioned activities, King County has the

affirmative responsibility to ensure that it has a waste management plan addressing waste generated by their proposed actions. The plan will describe the plan to dispose of any sanitary or hazardous waste, e.g. construction and demolition debris, discarded equipment, debris, asbestos, etc. generated as a result of the proposed project. The recipient must ensure that it will comply with all federal, state and local regulations for waste disposal.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

Note to Specialist :

None Given.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 4/22/10

NEPA Compliance Officer

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: _____ Date: _____

Field Office Manager