PMC-EF2a

(2.04.02)

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

RECIPIENT: LA Dept. of Natural Resources **STATE:** LA

PROJECT TITLE: ARRA SEP - Agrilectric Power Partners -- Biomass Renewable Energy Enhancement & Efficiency Project

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000052	EE0000124	GFO-0000124-017	EE124

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 Louisiana State Energy Office through the Louisiana Department of Natural Resources proposes to provide $2,049,691 in ARRA funding to Agrilectric Power Partners, LP (Agrilectric) to purchase and install new equipment and to make improvements to an existing biomass electrical power plant at 3063 Highway 397, Lake Charles, LA. Agrilectric has operated this biomass power plant for the previous 26 years; in which they utilize rice hulls as one of their main feedstocks. The facility produces reliable, renewable power for both residential and commercial customers in the region. In the past 10 years, this biomass plant has consumed over 2.4 million tons of rice hulls which is equivalent to 133,000 semi-truck loads of rice hulls that were diverted from local landfills. Through this reduction of rice hulls making their way to landfills, this reduces the amount of GHG released, most importantly, methane.

Agrilectric would install a new biomass boiler, replace several key components to increase efficiency, piping and routing improvements, install new baghouse modules and make improvements to the turbine/generator unit in order to maximize electrical power production at an existing biomass power plant in lake Charles, LA. The system is intended to increase the current steam flow from 112kpph to 125-129kpph (kpph = Kilo Pascals Per Hour which is a power plant steam pressure measurement) which would improve renewable output efficiency of the turbine/generator by 16.5%, which represents a capacity increase from 10.62MW to 12MW and an overall annual energy production of approximately 13,000,000 kWh. Rice hull feedstock is obtained from an adjacent business by the name of Farmer's Rice Milling Company as well as other rice mills in Louisiana and provide for a stable and sufficient source of feedstock for the plant's system power enhancements. The rice hulls will be consumed in the biomass boiler to create steam, which in-turn will drive the turbine to create electrical power. The power plant has an existing wholesale purchase agreement with Entergy Gulf States which will redistribute this energy amongst in the grid to Louisiana retail customers. No new transmission lines or right-of-ways will be needed. This project will take place in the existing power plant facility and the building footprint will not be increased as a result of this project.

Specific actions of the project include:

(1) Replacement of flue gas duct work and insulation between the secondary air heater outlet and the stack to minimize air leakage and improve thermal loss.
(2) Replacement of 4 Baghouse Modules with more efficient design to allow for increased generation. Fabric filtration is a common way to separate dry particles from a gas stream. A baghouse is the term used to describe the collection of many fabric filters contained within the same housing. Baghouses are utilized in gas stream or air filtration in industrial and commercial applications.
(3) Installation of a cooling water intake screen to eliminate organic fouling on the turbine condenser which causes turbine efficiency loss.
(4) Replacement of a condenser water box and flanges to improve condenser cooling water flows

(5) Replacement of a Superheater bundle rated for 125 kpph.
(6) Upgrade Generator and Turbine efficiencies to rerate it for a 12MW generation capacity.
(7) Change-out flue gas system expansion joints to minimize air leakage.
(8) Replacement of Deltak boiler and convection section to match the rerate of 125 kpph.
(9) Replacement of burners with a modified configuration.
(10) Replacement of secondary Air Heater with a modified configuration.

Environmental Considerations:

No new land areas will be affected and no new construction is anticipated in order to complete this project. Current roadways are sufficient in order for this project to be completed. The project is in an area that is a mix of agricultural and industrial land. This project would not affect floodplains or wetlands. No threatened or endangered species, species of special concern or habitat would be affected due to this project as the improvements to existing technology and processes would occur entirely inside Agrilectric's existing facility.

Noise: The new boiler and appurtenant equipment would be located in an existing building in an industrial area. The biomass power plant is located in close proximity to the Lake Charles Airport and the Southern Pacific railroad. Any change in noise due this project is unlikely to be noticed in this environment.

Waste Stream: Agrilectric states that the only waste material is rice hull ash (RHA), which has a secondary market as a soil enhancer, uses in filtration markets, and in the cement and steel industries. They currently have the necessary contracts to package, market and sell this ash material worldwide which essentially eliminates any/all waste potential from their facility.

Water Resources: There are no wastewater outfalls at this facility. Agrilectric would continue existing practices to capture rainfall and groundwater run-off to be used for process cooling.

Historic Preservation: Agrilectric contacted their local SHPO and was told this project is not being conducted on a historic property. DOE reviewed the on-line National Register of Historic Places to confirm the property is not listed on the Register nor is it eligible because it is only 26 years old.

Permitting: Air Permit: The Louisiana Department of Environmental Equality, Air Quality Division, reviewed the proposed project and determined this project would not result in an increase in emissions of PM10, SO2, NOx, CO or VOCs. This facility is a minor source of insignificant toxic air pollutants pursuant to the Louisiana fugitive emissions regulations (LAC 33:III.Chapter 51). The facility currently emits less than 4 tons/year of particulate matter emissions which pass-through baghouse filters which have over 99% collection efficiency. Agrilectric has a current Title V Permit # 0520-00101-V1 dated March 22, 2010. A copy of the approval has been uploaded into the PMC. Agrilectric states that air emissions will not exceed allowable limits under their existing Title V permit.

Based on the information provided by the State and the applicant, DOE has determined that the work outlined is consistent with activities identified in Categorical Exclusion 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 :

This EF2a was prepared by Chris Paulsen

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 2/8/11
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

☐ Field Office Manager review required