PMC-EF2a

(2.04.02)

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

RECIPIENT: Town of Hempstead **STATE:** NY

PROJECT TITLE : DCW GSHP

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE FOA 0000013	EE0000690	GFO-0000690-004	0

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 Town of Hempstead is proposing to use up to $350,000.00 of its EECBG funding for the installation of a 33-ton ground source heat pump (GSHP) at the headquarters of the Department of Conservation and Waterways (DCW). The GSHP would consist of two separate systems: one 30 ton system to connect to the DCW building and one 2 ton system for the NYIT solar house located on the property. The DCW system would consist of six 5-ton units and would be a vertical borehole closed looped system with nineteen 6-inch diameter wells drilled to a depth of 280 feet. The system would contain approximately 11,760 linear feet of 1 and ¼ inch inside diameter specified polyethylene pipe heat exchangers. The solar house system would consist of one 2-ton unit and would be a vertical borehole closed looped system with six inch diameter wells drilled to a depth of 280 feet. The system would contain approximately 1,120 linear feet of 1 and ¼ inch inside diameter specified polyethylene pipe heat exchangers. Both systems would be grouted with thermally enhanced bentonite grout. The heat exchange fluid for both systems would be a mix of potable water and food-grade propylene glycol.

The DCW system would be located on a previously disturbed grass field located immediately west of the DCW building. The boreholes would be spaced 20 feet apart on the east-west axis, and 18 feet apart on the north-south axis. The two boreholes in the solar house system would be spaced 20 feet apart and be located north northeast of the NYIT solar house. The closest wetlands to the project are the saltwater Reynolds channel to the north of the project location. Both well fields will be located behind the bulkhead delineating the property from the Reynolds Channel, and would therefore not impact the wetlands. The entire project area is part of the John H. Chafee Coastal Barrier Resources System, which is part of a system of naturally protected coastal areas (such as barrier islands). The project proponent, DCW, is the local agency charged with preservation of the town's wetlands, wildlife and coastal areas.

A review of FEMA flood insurance rate maps for the area show that portions of the proposed well field for the GSHP would be located within the boundary of the 100 year floodplain. In accordance with 10 CFR 1022, a floodplain assessment must be completed to evaluate flood hazards and floodplain management for proposed actions in a floodplain. The following information satisfies the requirement for a floodplain assessment. During construction, the town would utilize appropriate measures to control erosion and surface water runoff, including, if necessary, the covering of tailings piles, placement of hay bails, and spraying water on loose material. All waste generated by the drilling would be removed immediately and disposed of in accordance with local regulations. After construction the site would be restored to its original state. The type of construction and short duration of activities would be unlikely to modify the flooding characteristics of the area. Additionally, as the bore holes are well spaced and only six inches in diameter, the project is not expected to obstruct the flow or flood of water in the floodplain. Both proposed systems are closed looped and there would be no discharge from the system. No permit is required for project construction in the floodplain. Therefore, the installation and operation of the proposed project would have no or negligible adverse impacts on the natural and beneficial values of the floodplain. The proposed project would not alter the frequency or severity of flooding such that there would be adverse effects or greater risk to people or property.

There are three sole source aquifers located underneath the project area, one of which directly underlies the ground surface. Though the boreholes are expected to pass through this aquifer, the system would be installed using techniques which protect the groundwater and prevent the loop fluids from contaminating the groundwater. The proposed GSHP system, therefore, are not expected to adversely impact groundwater.

Due to the location of the project near estuaries and marshlands, it is possible that American Indians used the area prior to the arrival of Europeans. The town of Hempstead will contact the NY SHPO prior to installation of the GSHP. All drilling will be performed by a driller certified by the International Ground Source Hat Pump Association (IGSHPA) and the GSHP installation will follow all guidelines set forth by IGSHPA. . The driller also holds all certifications and licenses required to drill wells in New York.

Through a review of the above information, it has been determined that the proposed project will not have a significant impact to human health and/or environment. Therefore the proposed project is hereby Categorically Excluded from further NEPA review 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 :

Prepared by Caroline Mann

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 8/3/11

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