PMC-EF2a
(2/04/02)

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

RECIPIENT: City of Philadelphia **STATE:** PA

PROJECT TITLE: Ambler Boiler House Geothermal Wells, Cool Roof and PV installation

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000148	DE-EE-0003568	GFO-0003568-001	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 or water
(a) Actions to conserve energy or water, demonstrate potential energy or water conservation, and promote energy efficiency that would not have the potential to cause significant changes in the indoor or outdoor concentrations of potentially harmful substances. These actions may involve financial and technical assistance to individuals (such as builders, owners, consultants, manufacturers, and designers), organizations (such as utilities), and governments (such as state, local, and tribal). Covered actions include, but are not limited to weatherization (such as insulation and replacing windows and doors); programmed lowering of thermostat settings; placement of timers on hot water heaters; installation or replacement of energy efficient lighting, low-flow plumbing fixtures (such as faucets, toilets, and showerheads), heating, ventilation, and air conditioning systems, and appliances; installation of drip-irrigation systems; improvements in generator efficiency and appliance efficiency ratings; efficiency improvements for vehicles and transportation (such as fleet changeout); power storage (such as flywheels and batteries, generally less than 10 megawatt equivalent); transportation management systems (such as traffic signal control systems, car navigation, speed cameras, and automatic plate number recognition); development of energy-efficient manufacturing, industrial, or building practices; and small-scale energy efficiency and conservation research and development and small-scale pilot projects. Covered actions include building renovations or new structures, provided that they occur in a previously disturbed or developed area. Covered actions could involve commercial, residential, agricultural, academic, institutional, or industrial sectors. Covered actions do not include rulemakings, standard-settings, or proposed DOE legislation, except for those actions listed in B5.1(b) of this appendix. (b) Covered actions include rulemakings that establish energy conservation standards for consumer products and industrial equipment, provided that the actions would not: (1) have the potential to cause a significant change in manufacturing infrastructure (such as construction of new manufacturing plants with considerable associated ground disturbance); (2) involve significant unresolved conflicts concerning alternative uses of available resources (such as rare or limited raw materials); (3) have the potential to result in a significant increase in the disposal of materials posing significant risks to human health and the environment (such as RCRA hazardous wastes); or (4) have the potential to cause a significant increase in energy consumption in a state or region.

B5.16 Solar photovoltaic systems
The installation, modification, operation, and removal of commercially available solar photovoltaic systems located on a building or other structure (such as rooftop, parking lot or facility, and mounted to signage, lighting, gates, or fences), or if located on land, generally comprising less than 10 acres within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

B5.19 Ground source heat pumps
The installation, modification, operation, and removal of commercially available smallscale ground source heat pumps to support operations in single facilities (such as a school or community center) or contiguous facilities (such as an office complex) (1) only where (a) major associated activities (such as drilling and discharge) are regulated, and (b) appropriate leakage and contaminant control measures would be in place (including for cross-contamination between aquifers); (2) that would not have the potential to cause significant changes in subsurface temperature; and (3) would be located within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rational for determination:

The U.S. Department of Energy (DOE) provided funding to the City of Philadelphia (City) under the DOE's American Recovery and Reinvestment Act of 2009 Energy Efficiency and Conservation Block Grant Program (EECBG). The City proposes to use ~ $1,000,000 of EECBG funding (total project cost ~$15M) to install a closed-loop geothermal system and for other energy efficiency and renewable energy measures at the Ambler Boiler House, located at 201 South Maple Avenue, Ambler, PA 19002 (proposed project).

The City is currently renovating the Ambler Boiler House, a former boiler house located at the Ambler train station in downtown Ambler. The building, which is currently walls, steel roof frame, and chimney, will ultimately be converted

into a 42,000 square foot office building. The City proposed to use federal funding for the following activities:

1. Install an ENERGY STAR white, reflective EPDM roof;
2. Complete the roof deck with Epicore ER2D by Epic Metals Corporation 5" of rigid foam insulation (R-35);
3. Install double-pane, low-e, thermal break windows, u-value doors, and other auxiliary roof treatments (paid for with non-federal funds);
4. Energy-efficient lighting and daylighting throughout the building;
5. High-efficiency electric instantaneous water heaters;
6. ENERGY STAR refrigerators;
7. Low flow plumbing appliances and fixtures
8. An 11.52 kW roof-mounted solar photovoltaic system; and
9. A stormwater collection system for use in toilets and landscape watering.

In addition to the above, the City proposes to install a 110-ton ground source heat pump system (GSHP) at the Ambler Boiler House. The GSHP would consist of 51 holes drilled to a depth of ~550 feet.

The system would use potable water and 25% ethanol by volume anti-freeze solution. The GSHP would be closed loop and the wells would be grouted using thermal grout. Piping would be HDPE tubing. The system will have a pressure gauge to detect leaks. Contractors will be licensed and follow the guidelines of the International Ground Source Heat Pump Association.

The area where the GSHP would be located is adjacent to the Ambler Boiler House on previously disturbed land. Total ground disturbance would 11,700 square feet or .27 acres and after installation trenches will be backfilled and the area restored.

There are no drinking water wells or sole-source aquifers at the proposed project location.

The proposed project has been reviewed by the State Historic Preservation Officer and it was determined the proposed project will not adversely impact listed or eligible cultural/historic resources.

Due the location, DOE has determined the proposed will not effect any Threatened or Endangered Species that may be found in the area.

Based on the above analysis, DOE has determined the proposed project will not have significant individual or cumulative impacts on the human environment. DOE has determined the energy efficient and water conservation measures meet the definition of DOE categorical exclusion B5.1(a) "actions to conserve and water;" the installation of the solar array meets the definition of DOE categorical exclusion B5.16 "solar photovoltaic systems" and the installation of the GSHP meets the definition of DOE categorical exclusion B5.19 "ground source heat pumps" and the proposed project is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Note to Specialist :

DOE funding - $1,000,000
EF2a completed by Melissa Rossiter

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Kimberly Ke Date: 2/8/2012
NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

☐ Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON: