

PMC-ND
(1.08.09.13)

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION**



RECIPIENT: Stone Mountain Technologies, Inc.

STATE: TN

PROJECT TITLE : Pre-Commercial Scale-Up of a Gas-Fired Absorption Heat Pump

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001632	DE-EE0008219	GFO-0008219-001	GO8219

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:

- A9 Information gathering, analysis, and dissemination** Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)
- B3.6 Small-scale research and development, laboratory operations, and pilot projects** Siting, construction, modification, operation, and decommissioning of facilities for smallscale research and development projects; conventional laboratory operations (such as preparation of chemical standards and sample analysis); and small-scale pilot projects (generally less than 2 years) frequently conducted to verify a concept before demonstration actions, provided that construction or modification would be within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Not included in this category are demonstration actions, meaning actions that are undertaken at a scale to show whether a technology would be viable on a larger scale and suitable for commercial deployment.
- 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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Stone Mountain Technologies, Inc. (SMTI) to design, develop, fabricate, test, and field test natural gas-fired heat pump equipment for residential space heating. Project work would occur at SMTI's facility in Johnson City, TN; the Ingersoll Rand - Trane facility in Tyler, TX; and Gas Technology Institute's facility in Des Plaines, IL. Field test units would be tested at two residential single-family homes that have yet to be selected.

Project activities include the design, development, assembly, evaluation, and field testing of heat pump equipment as well as market assessment/techno-economic analysis of applications and climate zones. All project work, other than field testing, would be done in existing office space or a laboratory environment. No physical modifications or ground disturbing activities would be required and no change in the use of the facilities would result from project activities. No modifications to permits or new permits, additional licenses and/or authorizations would be necessary for proposed project activities. Project work would involve the use and handling of the natural refrigerant ammonia as well as the light fabrication of carbon steel metals. All handling and testing would occur in-lab, with proper safety procedures in place, and would pose no risk to the public. All hazardous materials would be managed in accordance with all federal, state, and local environmental regulations. All handling and testing of natural gas combustion systems would occur in-lab, with proper safety procedures in place, and would pose no risk to the public. Part of the proposed project includes field testing of units developed during the proposed project. These units would be designed per relevant ANSI and ASHRAE standards and would be installed outside of two selected field test locations. The prototype heat pumps would be installed similarly to standard residential heat pumps for space heating/cooling and would be approximately 3 foot cubed. All of the refrigerant and natural combustion would be located outdoors. Licensed HVAC contractors familiar with installing and maintaining residential HVAC equipment would install the systems. Prior to installation, candidate field test sites would be identified for completion of on-site inspections to measure existing heating system baseline information and verify suitability for temporary installation of the field test units. Although the exact locations for field testing have yet to be determined, the recipient has stipulated that neither properties listed on the National Register of Historic Places nor properties eligible for listing would be selected as field testing locations. DOE does not anticipate any impacts to resources of concern due to the proposed activities of the project.

Based on the review of the proposal, DOE has determined the proposal fits within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410 (2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. This proposal 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 the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

Note to Specialist :

Building Technologies Office
 This NEPA determination does not require a tailored NEPA provision.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Casey Strickland  Date: 10/31/2017
 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: _____
Field Office Manager

Date: _____