PMC-EF2a
(2.06.02)

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

RECIPIENT: University of Maryland **STATE:** MD

PROJECT TITLE : Miniaturized Air to Refrigerant Heat Exchangers

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0000621	DE-EE0006114	GFO-0006114-001	

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.

Rational for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the University of Maryland (UM) to research and develop improved, next generation miniaturized air-to-refrigerant heat exchangers. Funding would be used to design, fabricate and test approximately five different 1kW prototype heat exchangers and a 10kW prototype heat exchanger. Activities would include materials research and design; computer modeling and analysis; and prototype design, fabrication, testing and validation.

UM would partner with Oak Ridge National Laboratory on the prototype designs. Initial prototypes would be fabricated at ORNL's Manufacturing Demonstration Facility using additive manufacturing techniques. The fabricated 1kW and 10kW prototypes would be tested at UM's Heat Pump Laboratory in the Center for Environmental Energy Engineering located at 1100 Potomac Building, College Park, Maryland. Testing and analysis of a 10kW prototype heat exchanger in a 3-ton heat pump would also occur at the facility under a simulated operational environment.

UM has completed an R&D questionnaire addressing the protocols for laboratory and facility safety, risk management and waste disposal. The laboratory and facility comply with standard safety procedures and all processes and procedures are monitored by Environmental Health and Safety staff. Proper safety equipment is place. The laboratory and facility have all applicable permits in place, and would not need additional permits for the proposed activities. All handling and disposal of gases, chemicals, wastes and liquid effluents comply with appropriate regulations.

All work completed at DOE's Oak Ridge National Laboratory may be subject to additional NEPA review by the appropriate DOE NEPA Compliance Officer.

Based on review of the project information and the above analysis, DOE has determined the research, development, testing and analysis activities associated with development of next generation miniaturized air-to-refrigerant heat exchangers would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined the proposed project is consistent with actions contained in DOE categorical exclusions A9 "information gathering, analysis and dissemination," and B3.6 "small-scale research and development, laboratory operations and pilot projects," and 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 :

Obadiah Broughton 2/13/2013

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____ Date: 2/14/2013
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