

PMC-ND

(1.08.09.13)

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



RECIPIENT: Mechanical Solutions, Inc.

STATE: NJ

PROJECT TITLE: "Low-GWP HVAC System with Ultra-Small Centrifugal Compression"

**Funding Opportunity Announcement Number**  
DE-FOA-0001166

**Procurement Instrument Number**  
DE-EE0007042

**NEPA Control Number**  
GFO-0007042-001

**CID Number**

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 small scale 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.

## Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to Mechanical Solutions, Inc. to develop a heating, ventilation, and air conditioning (HVAC) system that utilizes ultra-small centrifugal compression for low global warming potential (GWP) in building technology.

The proposed activities would include design, development, fabrication and laboratory testing of a centrifugal air conditioning compressor. Design activities would take place at Mechanical Solutions, Inc.'s industrial facility in Whippany, NJ and laboratory testing would take place at their industrial facility in Albany, NY. Some additional testing would be completed at LENNOX Industries, Inc. in Carrollton, TX. All research and development activities would take place in existing facilities designed for this type of research; therefore, no modifications or new permits, additional licenses and/or authorizations would be necessary. The project would not require any new facilities to be constructed or any change in use, mission, or operation of existing facilities arising out of or resulting from work under the project.

Project testing would involve the use of refrigerants which would be monitored under strict inventory control. All refrigerants will be recaptured, contained and managed in accordance with federal, state and local environmental regulations. No siting, construction or major expansion of waste storage, disposal, recovery, or treatment actions/facilities would be required.

Based on review of the project information and the above analysis, DOE has determined the proposed project would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined that this project is consistent with actions outlined 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 therefore 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:

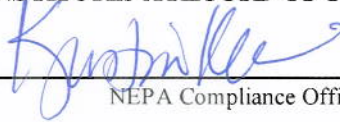
If you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing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

Note to Specialist :

Building Technologies Office  
This NEPA determination does not require a tailored NEPA provision.  
Review completed by Rebecca McCord on 05/19/2015

**SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.**

NEPA Compliance Officer Signature:



NEPA Compliance Officer

Date:

5/20/2015

**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: