

PMC-ND  
(1.08.09.13)

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



**RECIPIENT:**S-RAM Dynamics

**STATE:** TN

**PROJECT TITLE :** Natural Refrigerant high performance heat pump for commercial applications

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0000823	DE-EE0006346	GFO-0006346-001	

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:

<b>B3.6 Small-scale research and development, laboratory operations, and pilot projects</b>	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.
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**Rationale for determination:**

S-Ram Dynamics is proposing to use DOE funding to design, fabricate and test an air source heat pump targeted for heating, ventilation, and air conditioning purposes. The proposed heat pump would utilize air as the working gas, thus eliminating the need for hydrofluorocarbon use.

S-Ram would use DOE funding to complete prototype design work and testing scenarios using computer modeling software. Once design work is complete the prototype would be fabricated and tested by three sub-contractors in established laboratory facilities. These include Purdue University, Oakridge National Laboratory and ReGen Power. Each facility would follow their respective safety and waste handling protocols, as governed by State and local agencies. No hazardous materials would be used for this project.

DOE has determined that this project is consistent with actions covered under DOE CX B3.6 (smallscale research and development projects and conventional laboratory operations); and therefore 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 :

NEPA review completed by Laura Margason on August 28, 2013

This NEPA Determination does not require a tailored NEPA provision.

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

NEPA Compliance Officer Signature: Electronically Signed By: Lori Gray *Lori Gray* Date: 8/28/2013  
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

Based on my review of the information Order #11141 I have made the following determination:

The NEPA Determination does not require a Federal NEPA provision.

NEPA review completed by Loree Bergeson on August 28, 2013.

How to Proceed:

Continuing Office prior to commencing work beyond the currently approved Block II of the Notice of Fomental Activities Award before proceeding. You must receive notification of approval from the DOE Office identified in the range of activities of your project. You are required to contact the project Office identified in the following language in the award:

DOE has made a final NEPA determination for this award.

NEPA PROVISION

NEPA review

DOE has determined that this project is consistent with actions covered under DOE OX 52.8 (ambulatory research and development projects and conventional laboratory operations) and therefore is categorically excluded from further NEPA review.

Each facility would follow their respective safety and waste handling protocols, as governed by State and local agencies. No radioactive materials would be used for this project.

2-Ram would use DOE funding to complete prototype design work and testing scenarios using computer modeling software. Once design work is complete the prototype would be fabricated and tested by three sub-contractors in established laboratory facilities. These include Purdue University, Oakridge National Laboratory and Regan Power Laboratory. Testing scenarios would be developed and tested by three sub-contractors in established laboratory facilities.

2-Ram is proposing to use DOE funding to design, fabricate and test an air source heat pump integrated for testing, ventilation, and air conditioning purposes. The proposed heat pump would utilize air as the working gas, thus eliminating the need for hydrofluorocarbon use.

Bring construction modification, equipment, and decommissioning of facilities for ambulatory research and development projects conventional laboratory operations (such as projects of domestic standard and simple design) and small-scale test projects (generally less than 5 years) regularly conducted to verify a concept before demonstration or construction or modification of facilities for which a prototype is a prototype or developed or developed and tested using and commonly used tests are readily accessible. This included in this category are demonstration actions meaning actions that are undertaken as a way to show whether a technology would be viable on a larger scale and suitable for commercial deployment.