

PMC-ND
(1.08.09.13)

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



RECIPIENT: Alliance for Green Heat

STATE: MD

PROJECT TITLE : The Fourth Wood Stove Design Challenge

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
	DE-EE0008242 0001	GFO-0008242-001	

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.)
- A11 Technical advice and assistance to organizations** Technical advice and planning assistance to international, national, state, and local organizations.
- B3.14 Small-scale educational facilities** Siting, construction, modification, operation, and decommissioning of small-scale educational facilities (including, but not limited to, conventional teaching laboratories, libraries, classroom facilities, auditoriums, museums, visitor centers, exhibits, and associated offices) within or contiguous to a previously disturbed or developed area (where active utilities and currently used roads are readily accessible). Operation may include, but is not limited to, purchase, installation, and operation of equipment (such as audio/visual and laboratory equipment) commensurate with the educational purpose of the facility.
- 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 Alliance For Green Heat (AFGH) to conduct a wood burning stove design competition entitled "The 4th Wood Stove Design Challenge." Under this award, AFGH would allocate \$10,000 of federal funding to each of 10 teams to support the design, fabrication, and testing of

a next-generation wood stove prototype to be entered in a 5-day competitive technology demonstration event at the National Mall in November 2018.

The 10 individual projects proposed to be funded by DOE under AFGH's award would all involve the same types of preliminary design and engineering activities to occur at various dedicated university, commercial, and private research laboratories in the United States over the period leading up to the event in Washington, D.C. None of these facilities would require physical modifications nor any new permits, licenses or authorizations to perform project-related activities. No change in the use, mission, or operation of existing facilities would arise out of these efforts. At the conclusion of the proposed projects, no equipment or materials would need to be decommissioned.

Of the 10 project teams, one would be led by the recipient. The nine proposed subrecipients are made up of 3 university teams and 6 private industry teams. The names of each project team along with the respective locations of associated activities are as follows:

- 1) Alliance for Green Heat (Post Falls, Idaho)
- 2) MF Fire (Baltimore, MD)
- 2) Aprovecho Research Center (Cottage Grove, Oregon)
- 4) Wittus-Fire by Design, Brookhaven National Laboratory (Upton, NT)
- 5) VcV/Flamekeepers/Kiwi Stove Company, Myren Consulting Inc. (Colville, WA)
- 6) Stony Brook University Science and Chemical Engineering Department, Stony Brook University (Stony Brook, NY)
- 7) Maine Energy Systems (Bethel, ME)
- 8) George Washington Mechanical and Aerospace Engineering Department, George Washington University (Washington, DC)
- 9) Hi-Z Technology, Inc. (San Diego, CA)
- 10) Unforgettable Fire (Central Point, OR)

The teams would design and fabricate a residential home heating stove prototype in one of two categories: an automated stove category (equipped with sensors and/or WIFI-enabled controls to improve combustion efficiency, reduce air pollution and improve ease of use); or a thermoelectric stove category (equipped with a thermoelectric generator to power lights, cell phones, and WIFI-enabled controls). All stoves would have a chimney to vent exhaust during combustion. Cordwood would be used to test the stoves, and it is anticipated that each subrecipient would use less than a cord (typically measuring 4' wide x 4' high x 8' long and is 128 cubic feet in volume) over the less-than-yearlong duration of project activities at their respective facilities. Testing would therefore generate only minor and temporary quantities of particulate matter and carbon monoxide emissions; further, the proposed designs meet current Environmental Protection Agency (EPA) emission standards and testing would be performed following established manufacturer and/or laboratory procedures to ensure compliance with all applicable environmental regulations. Existing health and safety policies and procedures in place at AFGH/subrecipients' facilities include employee training, proper protective equipment, engineering controls, monitoring, and internal assessments.

For the Design Challenge, a tent to house the wood burning stoves would be erected on the National Mall. In order to hold the proposed public event, the recipient would be required to first obtain a permit from the National Park Service before undertaking any project activities at this site. The test protocol that would be used for the event is built off the established industry standard ASTM 3053-17 cordwood method, "Integrated Duty Cycle Test Protocol." A total of approximately two cords would be used during the competition. Together, AFGH and subrecipients would generate small quantities of ash from testing and operation of the stoves, and this non-hazardous waste would be removed from the National Mall and composted in Takoma Park, MD. Minimal quantities of emissions generated by the stoves during this event would not exceed EPA performance standards nor regulated air quality thresholds for this location.

DOE has reviewed AFGH's statement of objectives for their Design Challenge award, as well as individual work statements submitted by each proposed subrecipient. Given the limited scope of the individual projects proposed to receive funding under this award, the laboratory scale of fabrication activities and their location entirely within existing purpose-built facilities, and the short-term and temporary nature of prototype testing and the competition event itself, DOE has concluded that no adverse impacts to sensitive resources are to be expected as a result of the proposed activities at any location.

Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

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.

Insert the following language in the award:

You are required to:

The recipient is required to obtain a permit from the National Park Service before undertaking any project activities at the National Mall in Washington, D.C.

Any work proposed to be conducted at a DOE laboratory may be subject to additional NEPA review by the cognizant DOE NEPA Compliance Officer for the specific DOE laboratory prior to initiating such work. Further, any work conducted at a DOE laboratory must meet the laboratory's health and safety requirements.

Note to Specialist :

Bioenergy Technologies Office
This NEPA determination requires a tailored NEPA Provision.
NEPA review completed by Whitney Doss, 4/6/2018

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature:  Electronically Signed By: Casey Strickland Date: 4/11/2018
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