

PMC-ND

(1.08.09.13)

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

**RECIPIENT:** Gas Technology Institute**STATE:** IL

PROJECT TITLE: Grid Resilient, Self-Powered, Fuel Flexible, High Efficiency Heating System

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001825	DE-EE0008686	GFO-0008686-001	GO8686

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Policy 451.1), 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.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide federal funding to the Gas Technology Institute (GTI) to develop a highly efficient, grid independent, self-powered, fuel flexible, and drop-in capable integrated Advanced Burner Thermolectric Generator (ABTEG) system for residential and commercial buildings. The subsystem testing of the advanced burner would occur at GTI's facility in Des Plaines, IL and the subsystem design evaluation of the Thermolectric Generator (TEG) would occur at Sheetak, Inc. in Austin, TX. The integrated ABTEG system would be tested at GTI.

The project includes activities for the design, development, integration and laboratory testing of a 3D printed advanced burner with a TEG on a commercial water heater unit. A Market Transformation Plan would also be developed. All project work would occur within existing office or laboratory space where 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. The project would involve the use and handling of natural gas and hydrogen. Handling and testing with natural gas and hydrogen would occur in a dedicated, well ventilated laboratory space. All facilities where work would occur are built in compliance with applicable codes and standards and operated by experienced staff with a history of successfully working with these hazards. All applicable safety protocols and procedures, including regular training, hazard assessment, engineering controls, monitoring and proper personal protective equipment (PPE) would be followed. All test systems would be reviewed for their safety and code compliance and any changes to those systems would be handled through a management of change process. The TEG unit itself is safe to handle and does not involve any special PPE. Total air emissions from testing would be minimal and temporary. Waste handling and removal would be handled according to GTI's corporate waste management plan. DOE does not anticipate any impacts to resources of concern due to the proposed activities of the project.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

[Building Technologies Office](#)

[This NEPA determination does not require a tailored NEPA provision.](#)

FOR CATEGORICAL EXCLUSION DETERMINATIONS

The proposed action (or the part of the proposal defined in the Rationale above) fits within a class of actions that is listed in Appendix A or B to 10 CFR Part 1021, Subpart D. To fit within the classes of actions listed in 10 CFR Part 1021, Subpart D, Appendix B, a proposal must be one that would not: (1) threaten a violation of applicable statutory, regulatory, or permit requirements for environment, safety, and health, or similar requirements of DOE or Executive Orders; (2) require siting and construction or major expansion of waste storage, disposal, recovery, or treatment facilities (including incinerators), but the proposal may include categorically excluded waste storage, disposal, recovery, or treatment actions or facilities; (3) disturb hazardous substances, pollutants, contaminants, or CERCLA-excluded petroleum and natural gas products that preexist in the environment such that there would be uncontrolled or unpermitted releases; (4) have the potential to cause significant impacts on environmentally sensitive resources, including, but not limited to, those listed in paragraph B(4) of 10 CFR Part 1021, Subpart D, Appendix B; (5) involve genetically engineered organisms, synthetic biology, governmentally designated noxious weeds, or invasive species, unless the proposed activity would be contained or confined in a manner designed and operated to prevent unauthorized release into the environment and conducted in accordance with applicable requirements, such as those listed in paragraph B(5) of 10 CFR Part 1021, Subpart D, Appendix B.

There are no extraordinary circumstances related to the proposed action that may affect the significance of the environmental effects of the proposal.

The proposed action has not been segmented to meet the definition of a categorical exclusion. This proposal is not connected to other actions with potentially significant impacts (40 CFR 1508.25(a)(1)), is not related to other actions with individually insignificant but cumulatively significant impacts (40 CFR 1508.27(b)(7)), and is not precluded by 40 CFR 1506.1 or 10 CFR 1021.211 concerning limitations on actions during preparation of an environmental impact statement.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____



Casey Strickland

NEPA Compliance Officer

Date: 3/28/2019

FIELD OFFICE MANAGER DETERMINATION

- Field Office Manager review not required
 Field Office Manager review required

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____

Field Office Manager

Date: _____