

PMC-ND
(1.08.09.13)

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

**RECIPIENT:** Fraunhofer USA, Inc.**STATE:** MA

PROJECT TITLE: Mass Customization of Prefabricated Panel Blocks for Deep Wall Insulation Retrofits

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002099	DE-EE0009066	GFO-0009066-001	

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 Fraunhofer, USA, Inc. (Fraunhofer) for the development and demonstration of an integrated process using prefabricated insulated Panel Blocks (PB) to reduce the on-site labor and installed cost of delivering high-performance exterior wall retrofits for low-rise residential buildings in cold, very cold, and mixed humid climates. Design refinement work would occur at H. C. Fennell Consulting in Vermont while fabrication and demonstration of the PBs would occur within Fraunhofer's facility in Brookline, Massachusetts. Budget Period 1 (BP1) would focus on demonstrating the integrated high-performance wall retrofit process on a mockup wall with critical design features of most residences that impede the scalability of exterior wall retrofits. The project would be completed over two Budget Periods (BPs), with a Go/No-Go Decision Point in between each BP. Fraunhofer would only move into BP2 after this project has completed an application process at the end of BP1 and if DOE selects Fraunhofer's project through a down-selection process. BP2 activities would then be developed and structured. Because BP2 activities are not currently known, this NEPA review will only be applicable to BP1 activities. BP2 activities would be reviewed at a later date if and when Fraunhofer's project is selected to move into the subsequent BP.

BP1 would include the adaptation of existing PB designs for residential wall applications through refining the existing design, modeling, fabrication of PB and hardware, development and implementation of an augmented reality installation experience, demonstration on a mocked up wall, and development of an updated PB system cost model. All BP1 activities would be done in existing office space or a laboratory environment. 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 cutting polyurethane foam board to fabricate panel blocks of specific shapes and sizes. Inhalation and skin irritation hazards would be mitigated by the use of dust masks and gloves during fabrication, finishing, and installation of the panel blocks. Polyurethane foam is flammable, so care would be taken to avoid exposure to high levels of heat. Use of adhesive to assemble blocks from polyurethane board product would follow the adhesive manufacturer's recommendations (e.g., using a fan or ventilation air).

Fraunhofer's facility is housed on the Boston University (BU) campus so the recipient would work with BU's Waste Management program to recycle or safely dispose of all wastes. DOE does not anticipate any impacts to resources of concern due to the proposed activities of the project.

NEPA PROVISION

DOE has made a conditional NEPA determination.

The NEPA Determination applies to the following Topic Areas, Budget Periods, and/or tasks:

[All BP1 Tasks and Subtasks.](#)

The NEPA Determination does not apply to the following Topic Area, Budget Periods, and/or tasks:

[All BP2 Tasks and Subtasks.](#)

Notes:

[Building Technologies Office](#)
[This NEPA determination requires 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.

A portion of the proposed action is categorically excluded from further NEPA review. The NEPA Provision identifies Topic Areas, Budget Periods, tasks, and/or subtasks that are subject to additional NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____



[Casey Strickland](#)

NEPA Compliance Officer

Date: 5/28/2020

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: _____