

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
<a href="#">DE-FOA-0002099</a>	<a href="#">DE-EE0009066</a>	<a href="#">GFO-0009066-002</a>	<a href="#">GO9066</a>

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:

- |  |  |
|--|--|
| <a href="#">A9 Information gathering, analysis, and dissemination</a>                                | 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.)   |
| <a href="#">B3.6 Small-scale research and development, laboratory operations, and pilot projects</a> | 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 deployment of a suite of deep energy retrofit (DER) solutions to low-rise residential buildings in cold, very cold, and mixed humid climates.

This project would be completed over five Budget Periods (BPs). DOE previously completed one ND for this specific award. The ND for BP1 ([GFO-0009066-001: CX A9 and B3.6 issued 5/8/2020](#)) focused on demonstrating the integrated high-performance wall retrofit process on a mockup wall and the down-selection process to move forward to BP2. Since the down-selection process, BP2, BP3, BP4 and BP5 have been added to the Statement of Project Objectives (SOPO). This ND covers activities in BP2 and BP3. Information obtained from activities in BP2 and BP3 of the approved SOPO being reviewed in this NEPA determination would inform the details and design of the remaining project activities. Currently there is not enough information to complete a review of BP4 or BP5. Once additional assessment and design activities are completed, another NEPA review will be required to assess potential impacts associated with the remaining project activities.

Budget period 2 activities include further refinement of the wall-retrofit process prototyped in BP1, testing, computer modeling, development of design components, evaluation of market viability, design of a window energy management system (WEMS), development of augmented reality (AR) software, development and testing of a scan-to-BIM (building information model) algorithm and seeking stakeholder feedback. All BP2 activities would occur within existing, purpose-built facilities.

Budget period 3 activities include designing, testing, market studies, refining algorithms, and creation of measurement and verification and data acquisition plans. AR and scan-to-BIM software would be refined and demonstrated. WEMS secondary window prototypes would be tested in select homes. The WEMS prototypes would be installed inside, attached to brackets over existing windows. The installation and testing of the WEMS prototypes would not result in any structural changes or impacts to the aesthetics of the homes. Once tested, the WEMS prototypes would easily be removed without impacting the structure or aesthetic of the home. Additionally, five existing homes would be identified for future deployment and demonstration of activities identified in BP4 and BP5.

Employee training, proper protective equipment, and internal safety reviews and assessments would be utilized to

mitigate hazards. All project work would adhere to local, state, and federal safety regulations. DOE does not anticipate any impacts to resources of concern due to the proposed activities in BP2 and BP3 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:

[Tasks identified in BP2 and BP3](#)

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

[Tasks identified in BP4 or BP5](#)

Notes:

[Building Technologies Office \(BTO\)](#)  
[NEPA review completed by Amy Lukens, 9/7/2022](#)

## 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: 9/9/2022

## 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: \_\_\_\_\_