

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



RECIPIENT: Syracuse University

STATE: NY

PROJECT TITLE : Integrated Whole-Building Energy Efficiency Retrofit Solution for Residences in Cold/Very Cold Climates

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0002099	DE-EE0009060	GFO-0009060-002	GO9060

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.

**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 funding to Syracuse University (SU) to develop a whole-building retrofit solution for single-family attached residences. The solution would incorporate a variety of energy efficiency technologies and processes. These would include a novel building envelope retrofit system, an envelope-integrated heating, ventilation, and air conditioning (HVAC) system, and a retrofit protocol and design decision-making platform. Various laboratory-scale components (e.g. envelope paneling, HVAC components, sensors,

etc.) would be fabricated, assembled and subjected to performance testing. A full-scale envelope prototype would be developed and used for field testing.

This project would be completed over two Budget Periods (BPs). DOE previously completed one ND for this specific award. The ND for BP1 (GFO-0009060-001: CX A9 & B3.6, issued 6/26/2020) focused on the design, engineering, component fabrication/assembly, computer modeling, software development, testing, and stakeholder engagement. This ND focuses on BP2.

Budget period 2 activities includes design, modeling, fabrication, testing, installation, and demonstration of whole-building energy efficiency retrofit solutions in two existing, single-family attached residential buildings on SU's campus (Skytop dormitory complex). Testing of prototypes would occur in SU's Building Envelope System Testbed (BEST) laboratory facility, with a portion of the facility's external façade to be retrofitted with a prototype. Demonstration building components (e.g. windows, siding, doors, sheetrock, screens, etc.) would be removed and replaced with retrofit solutions. HVAC mechanical systems would be installation adjacent to existing buildings, in pre-disturbed areas on pre-casted concrete slabs. Shallow trenching would be required around the foundations of the structures to install exterior retrofit panels.

The U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) website identifies one candidate (Monarch Butterfly), two threatened (Northern Long-eared Bat and American Hart's-tongue Fern) and one endangered (Indiana Bat) species that may occur in the proposed project area. The proposed work would modify existing buildings in developed areas. No modifications to natural habitats would occur. DOE has determined the proposed project would have no effect to threatened, endangered or candidate species in the area.

Minimal air emissions may result from the use of diesel powered vehicles and equipment during installation of retrofits. However, significant air impacts are not anticipated as emissions would be temporary and intermittent during installation activities only. Hazards associated with component fabrication include use of power tools and machinery. Hazards associated with retrofit installation include use of power tools, machinery, scaffolding and lifts, working with electricity, and potential exposure to lead-based paint and asbestos. During operations, HVAC systems would be charged with antifreeze or other refrigerants. Employee training, proper protective equipment, and internal safety reviews and assessments would be utilized to mitigate hazards. All project work would adhere to University, local, State, and Federal safety regulations. DOE does not anticipate any impacts to resources of concern due to the proposed BP2 activities.

NEPA PROVISION

DOE has made a final NEPA determination.

Notes:

Building Technologies Office (BTO)
NEPA review completed by Amy Lukens, 8/1/2022

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.

The proposed action is categorically excluded from further NEPA review.

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____



Electronically Signed By: Casey Strickland

NEPA Compliance Officer

Date: 8/1/2022

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: _____