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

RECIPIENT: University of Central Florida **STATE:** FL

PROJECT TITLE: Building America Partnership for Improved Residential Constructions

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001117	DE-EE0007056	GFO-0007056-001	GO7056

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.)
B3.1 Site characterization and environmental monitoring	Site characterization and environmental monitoring (including, but not limited to, siting, construction, modification, operation, and dismantlement and removal or otherwise proper closure (such as of a well) of characterization and monitoring devices, and siting, construction, and associated operation of a small-scale laboratory building or renovation of a room in an existing building for sample analysis). Such activities would be designed in conformance with applicable requirements and use best management practices to limit the potential effects of any resultant ground disturbance. Covered activities include, but are not limited to, site characterization and environmental monitoring under CERCLA and RCRA. (This class of actions excludes activities in aquatic environments. See B3.16 of this appendix for such activities.) Specific activities include, but are not limited to: (a) Geological, geophysical (such as gravity, magnetic, electrical, seismic, radar, and temperature gradient), geochemical, and engineering surveys and mapping, and the establishment of survey marks. Seismic techniques would not include large-scale reflection or refraction testing; (b) Installation and operation of field instruments (such as stream-gauging stations or flow-measuring devices, telemetry systems, geochemical monitoring tools, and geophysical exploration tools); (c) Drilling of wells for sampling or monitoring of groundwater or the vadose (unsaturated) zone, well logging, and installation of water-level recording devices in wells; (d) Aquifer and underground reservoir response testing; (e) Installation and operation of ambient air monitoring equipment; (f) Sampling and characterization of water, soil, rock, or contaminants (such as drilling using truck- or mobile-scale equipment, and modification, use, and plugging of boreholes); (g) Sampling and characterization of water effluents, air emissions, or solid waste streams; (h) Installation and operation of meteorological towers and associated activities (such as assessment of potential wind energy resources); (i) Sampling of flora or fauna; and (j) Archeological, historic, and cultural resource identification in compliance with 36 CFR part 800 and 43 CFR part 7.
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 University of Central Florida (UCF) to develop a better understanding of two innovative system solutions and support their adoption into building codes and standards through lab and field research, including: high efficiency, variable capacity, ducted and ductless space

conditioning systems with optimized comfort distribution and latent control; and "smart" ventilation systems aimed at saving space conditioning energy use while improving comfort, moisture and peak load impacts.

Proposed project activities include installing a commercially-available space conditioning system (HVAC) at a laboratory experimental facility (unoccupied test home); designing and installing an advanced ventilation system in the test home; collecting data on the performance and installation costs of air conditioning systems and ventilation equipment in residential applications; installing commercially-available, ductless space conditioning in two occupied test homes; installing a commercially-available, state-of-the-art, "smart" ventilation system in three occupied test homes; collecting performance and cost data from the five occupied test homes; and performing intellectual, academic and analytical activities.

Project partners only completing intellectual, academic and analytical activities would include Energy Vanguard in Decatur, GA; Unico, Inc. in St. Louis, MO; Panasonic, Eco Products Division in Keyport, WA; Washington State University Extension Energy Program in Olympia, WA; The Energy Conservatory in Minneapolis, MN; Nest Labs, Inc. in Palo Alto, CA; and iEngineer LLC in Phoenix, AZ. Field work would occur at the UCF Florida Solar Energy Center in Cocoa, FL. The proposed project would use an existing, unoccupied test home which would be modified by replacing the existing HVAC system with a ductless, mini-split heat pump and a smart ventilation control system. The building is a research facility designed specifically for experiments of this nature. No other physical modification to the building or ground disturbing modifications are required; no change in the use or operation of the facilities would result; and no equipment would be installed outdoors besides the replacement Air Conditioning unit. The proposed project would involve installation of ductless, mini-split heat pumps in two, currently unidentified, occupied homes, and installation of smart ventilation control systems in three, currently unidentified, occupied homes. Four of the homes are being constructed independently of the DOE award, and the proposed project would only be adding the described equipment during construction as well as collecting data on performance after construction is complete. One of the homes would be an existing residence in which a smart control ventilation system would be installed inside. The system would be minimal in nature and require no physical modifications to the property beyond the small control unit. All required permits would be obtained prior to beginning work. Due to the fact that the proposed activities would occur in existing facilities and do not involve ground disturbance, DOE has determined that there would be no adverse effects to the environment.

Based on a review of the project information and the above analysis, DOE has determined that the proposed activities would not have a significant individual or cumulative impact to human health and/or environment. DOE has determined that this project is consistent with actions outlined in DOE categorical exclusions A9 "Information gathering", B3.1 "Site Evaluation", and B3.6 "Small-scale research and development, laboratory operations, and pilot projects" and 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 you intend to make changes to the scope or objective of your project you are required to contact the Project Officer identified in Block 11 of the Notice of Financial Assistance Award before proceeding. You must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved.

Note to Specialist :

Building Technologies Office
This NEPA determination does not require a tailored NEPA provision.
Review completed by Logan Sholar on 6/23/2015

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: Electronically Signed By: Kristin Kerwin Date: 6/24/2015

NEPA Compliance Officer

FIELD OFFICE MANAGER DETERMINATION

☐ Field Office Manager review required