

PMC-ND

(1.08.09.13)

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



**RECIPIENT:** Southern Indiana Gas and Electric Company

**STATE:** IN

**PROJECT TITLE:** Integration and Optimization of Loads, Energy Storage, and Renewables for Grid Interactive Efficient Buildings

<b>Funding Opportunity Announcement Number</b>	<b>Procurement Instrument Number</b>	<b>NEPA Control Number</b>	<b>CID Number</b>
DE-FOA-0001825	DE-EE0008682	GFO-0008682-001	G08682

**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.)
- 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.
- B5.16 Solar photovoltaic systems** The installation, modification, operation, and removal of commercially available solar photovoltaic systems located on a building or other structure (such as rooftop, parking lot or facility, and mounted to signage, lighting, gates, or fences), or if located on land, generally comprising less than 10 acres within a previously disturbed or developed area. Covered actions would be in accordance with applicable requirements (such as local land use and zoning requirements) in the proposed project area and would incorporate appropriate control technologies and best management practices.

Rationale for determination:

The U.S. Department of Energy (DOE) is proposing to provide funding to Southern Indiana Gas and Electric Company (SIGECO) to install and assess a residential energy monitoring and control system that would integrate internet-connected building loads, battery energy storage, and a grid-connected solar photovoltaic (PV) system. The system would be installed at a two-building residential complex. Internet-connected smart devices that control electric loads (e.g. thermostats and water heaters) would be installed in 52 individual apartments. These devices would be connected to the monitoring and controls system and used to optimize cost/savings and peak load reduction across the residences.

The project would be completed over three Budget Periods (BPs), with a Go/No-Go Decision Point in between each BP. BP1 would focus on component installation and algorithm development. Proposed project activities would include installation/commissioning of smart devices, implementation of a cloud-based building control system (BCS) platform, incorporation of algorithms into the BCS platform, and the provision of training to property managers and residents on the BCS platform and smart devices. BP2 would focus on developing performance measurements and gathering data. Proposed project activities would include the establishment of baseline energy consumption/demand metrics, development of a measurement and verification plan (M&V plan), and completion of energy efficiency use case assessments (e.g. solar + storage, automated demand response, and energy savings). BP3 would focus on data analysis and reporting. Activities would include gathering residential feedback on smart devices and the BCS platform (via surveys, focus groups, and interviews), analysis of use case data, and computer modeling.

All project activities would be performed by SIGECO and its project partners, Scannell Properties, the Pacific Northwest National Laboratory (PNNL) and Oak Ridge National Laboratory (ORNL). Scannell Properties would install all internet-connected smart devices. SIGECO would contract a qualified installer for installation of the battery energy storage and solar PV systems. SIGECO would perform all monitoring, research, equipment validation, coding/algorithms development, analysis, and survey activities. ORNL would assist SIGECO with the preparation of the M&V plan and the development/testing of use cases. PNNL would assist SIGECO with component and control testing. SIGECO and its project partners would adhere to all Federal, state, and local health, safety and environmental regulations when completing project activities.

The residential buildings in which the BCS platform and smart devices would be installed is currently under construction, and upon completion, will be known as "The Post House." The site is located in Evansville, IN. Installations would include a battery energy storage station (BESS) unit, 20 residential energy storage units (RESS), approximately 200 kW of roof-top solar PV panels and inverters, and various smart devices, conduits, and conductors, to be installed within 52 individual apartments and throughout the apartment complex.

The buildings are being constructed in a lot that was vacant prior to development. Construction of the apartment buildings is not being performed using DOE funding. DOE funding would be limited to installation/implementation of the BCS platform, smart devices, BESS/RESS units, and solar PV systems. The smart devices and BESS unit would be housed entirely inside of the buildings, and would not be visible from outside of the buildings or affect the buildings' overall design.

The Post House will be located near the Evansville Downtown Historic District and within visual range of two properties listed on the National Register of Historic Places (NRHP); namely, the Evansville Post Office and Customs House and the Greyhound Bus Terminal. The Post House towers will each measure 60 ft. in height, once constructed. This is higher than any of the NRHP listed properties in the immediate view shed of The Post House. In total, approximately 527 solar PV panels would be installed on The Post House towers. Each solar PV array would have a maximum height of approximately 13 inches and would be installed with a minimum 4-foot setback from the perimeter of the roof. The parapet walls around the perimeter of the roof would have a height of 3.28 feet; far greater than the maximum height of the solar PV arrays.

Because the solar PV arrays would be shielded by the buildings' parapets and would not be visible from the view shed of any of the NRHP listed properties, DOE has determined that there would be no historic properties affected by these installations. The Indiana Division of Historic Preservation & Archaeology provided written concurrence on May 30, 2019, regarding DOE's determination in this matter.

## NEPA PROVISION

DOE has made a final NEPA determination.

Include the following condition in the financial assistance agreement:

Any work proposed to be conducted at a federal facility may be subject to additional NEPA review by the cognizant federal official and must meet the applicable health and safety requirements of the facility.

Notes:

Building Technologies Office

This NEPA determination does not require a tailored NEPA Provision. Please include the standard DOE laboratory language in the award.

Review completed by Jonathan Hartman on 6/6/2019

**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: 6/6/2019**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: \_\_\_\_\_