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Notice of Funding Opportunity

Title: Connected Communities
Website: <https://eere-exchange.energy.gov/default.aspx#Foald9d24afcd-e292-4ea2-a4d3-d36e2b9dd9c7>
Funding: Total: \$65,000,000. Maximum awards: \$3M-\$7M, depending on project.
Dates: Concept Paper Submission Deadline: February 17, 2021
Application Submission Deadline: March 3, 2021

Summary: A Connected Community (CC) is a group of grid-interactive efficient buildings GEB with diverse, flexible end use equipment and other distributed energy resources (DERs) that collectively work to maximize building, community, and grid efficiency. The objective of this FOA is to select projects that will demonstrate how groups of buildings combined with other types of DERs, such as electric vehicle (EV) charging and photovoltaic (PV) generation, can reliably and cost effectively serve as grid assets by strategically deploying efficiency and demand flexibility. By demonstrating the ability of groups of buildings and DERs to modify load, the FOA outcomes will enable increased energy efficiency, reduced energy demand, and reduced environmental impact.

Under this FOA, DOE will select a portfolio of “Connected Community” projects totaling up to \$65 million in varying climates, geographies, building types, building vintages, DERs utility/grid/regulatory structures and resource bases. Through funding these projects, DOE hopes to find and share technical and market solutions that will increase demand flexibility and energy efficiency.

For the purpose of this FOA, a DER is defined as a resource (community-scale or building-scale) that can provide all or some immediate electric and/or power needs and can also be used by the community to either reduce demand (such as energy efficiency) or supply power to satisfy the energy, capacity, or ancillary service needs of the distribution grid. In addition, it should be connected to the distribution system, close to load, and the majority of produced energy should be consumed within the community. Examples of different types of DERs include photovoltaics (PV), energy storage, wind, combined heat and power (CHP), demand response (DR), energy efficiency (EE), microgrids, and electric vehicle charging infrastructure.

Project Topic Areas:

This FOA calls for projects that seek an integration of the technological, operational, environmental, and economic aspects to create value for occupants and other participants. Using technology, software, and business models that can integrate DERs across buildings and with the grid should create a bidirectional flow of benefits. Non-electric fuel sources may be applicable, for both distributed generation and building equipment, provided they meet the objectives of the FOA and are allowed by appropriate regulatory agencies to provide grid services (if being used for that purpose).

Energy efficient buildings should be used as a foundational resource and utilized to the greatest extent reasonable in project communities. Applicants are strongly encouraged to apply high performance building principles to build and/or retrofit new and existing buildings. Several examples of cost-effective deep efficiency improvements have been documented in the Better Buildings Solution Center and the Building America Solution Center.

A key goal of this FOA is to select projects that will demonstrate how groups of buildings can reliably and cost-effectively serve as grid assets by strategically deploying efficiency and demand flexibility in conjunction with DERs. The grid issues addressed by Connected Communities FOA should include: Aiding variable renewable energy integration; And may include, among others: Providing resource adequacy; Improve resilience, allowing systems to withstand or recover rapidly from disturbances; Deferring or avoiding major capital investments in generation, transmission, or distribution grid infrastructure; Maintaining voltage limits on the transmission and distribution (T&D) system; and Extending the reliability and resilience of the surrounding electric system through coordinated islanding or the provision of blackstart or other recovery related services.

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**Funding:**

EERE and OE expect to make a total of approximately \$65 million of federal funding available for new awards under this FOA, subject to the availability of appropriated funds. EERE anticipates making approximately 6-8 awards under this FOA. EERE may issue one, multiple, or no awards. Individual awards may vary between \$3 million and \$7 million, but DOE reserves the right to adjust these amounts depending on the applications submitted. There is only one topic for this FOA and EERE may issue one, multiple, or no awards. The cost share must be at least 30% of the total allowable costs for demonstration projects and must come from non-federal sources unless otherwise allowed by law.

Project Requirements:

Required categories of the connected community projects proposed in response to this FOA include: Grid Issues and Services to Address; Energy Efficiency, Building Load Flexibility Provision and Metrics; DER Types; Capacities (as applicable) and Quantities; Coordinated Controls for Energy Efficient and Flexible Load Operations; Implementation Pathways; Recruitment, Business Model Innovation; Project Partners & Stakeholders; Project Stakeholder Benefits; Data and Analysis Methods; Occupant Experience; Cybersecurity and Privacy; Scalability and Replication; and Outreach.

All projects are required to produce and collect data to demonstrate the ability of the project to provide the efficiency, load flexibility, and the grid services targeted. This will be quantified through a measurement and verification process utilizing an evaluation protocol as provided by the National Coordinator. In order to measure quantity and “quality” of actual load change and or energy services, it is anticipated that all buildings will be equipped with interval metering infrastructure and analytics, and analogous infrastructure on the grid side.

Eligible Applicants:

U.S. citizens and lawful permanent residents are eligible to apply for funding as a prime recipient or subrecipient. For-profit entities, educational institutions, and nonprofits that are incorporated (or otherwise formed) under the laws of a particular state or territory of the United States and have a physical location for business operations in the United States are eligible to apply for funding as a prime recipient or subrecipient. A foreign entity may receive funding as a subrecipient. State, local, and tribal government entities are eligible to apply for funding as a prime recipient or subrecipient. DOE/NNSA FFRDCs, with the exception of Lawrence Berkeley National Laboratory, are eligible to apply for funding as a subrecipient, but are not eligible to apply as a prime recipient. Lawrence Berkeley National Laboratory is not eligible to apply as a prime or subrecipient under this FOA. Non-DOE/NNSA FFRDCs are eligible to apply for funding as a subrecipient, but are not eligible to apply as a prime recipient. Federal agencies and instrumentalities (other than DOE) are eligible to apply for funding as a subrecipient, but are not eligible to apply as a prime recipient. Incorporated consortia, which may include domestic and/or foreign entities, are eligible to apply for funding as a prime recipient or subrecipient. Unincorporated Consortia, which may include domestic and foreign entities, must designate one member of the consortium to serve as the prime recipient/consortium representative.