



R&D Connector - Buildings as Grid Assets

Smart, Efficient Low Carbon Building Energy Solutions

MISSION

Supporting the advancement of smart, energy efficient homes and buildings as flexible grid assets through shared learning and coordinated research and development.

ABOUT THIS PROJECT

Policymakers and utilities in the Northeast are beginning to recognize Grid-interactive, Efficient Buildings (GEBs) as critical to the realization of a more reliable, affordable, and clean energy system. As these efforts advance, technology cost and performance information is needed to fully include smart home and building technologies in wholesale electricity markets and/or to serve as active resources to meet local distribution system needs. While interest and investment is growing, GEBs research and development (R&D) and adoption programs are not linked to share lessons from existing research efforts nor are they effectively collaborating to accelerate GEB development and adoption. The R&D Connector is a partnership with the U.S. Department of Energy (U.S. DOE) to engage stakeholders to expose regional research needs and initiatives for GEBs, as well as to highlight priority areas for future collaboration and R&D to meet regional needs. It contributes to a new US DOE GEBs project involving NASEO, NARUC and ACEEE to inform development of a national GEBs roadmap.

LONG-TERM MARKET TRANSFORMATION GOALS

2030

50% of Northeast homes and buildings are “energy smart” with either two “energy smart” systems (HVAC, water heating, plug loads) or smart building management systems able to respond to grid service needs.

2019 PROJECT OUTCOMES

1. Increase the visibility of northeast and US DOE research and development initiatives to test, assess, and advance smart energy home and building systems to optimize grid reliability, flexibility, and resilience.
2. Catalyze new regional collaborations to develop, test and advance smart energy home and building technologies and system integration.
3. Effectively align U.S. DOE-funded research and technology development to meet regional needs.

REGIONAL TRENDS & LEADERS

- Energy efficiency programs in six states now link energy efficiency investments in homes and buildings with demand response, and in some cases energy storage, to provide grid reliability services (i.e., CT, MA, ME, NY, PA, and RI).
- At least eight electric utilities in eight Northeast States (CT, DE, MA, ME, NH, NJ, NY, RI, and VT) are implementing non-wires alternative solicitations using building energy efficiency, demand response, and energy storage to defer distribution system upgrades to meet demand growth.
- Recently, ISO New England filed a proposed tariff for FERC review and approval that would allow customer-sited batteries and other energy storage technologies to more fully participate in wholesale energy markets, including the real-time energy market.

2019 Strategies with Associated Products, Services and Technical Assistance

STAKEHOLDER ENGAGEMENT

NEEP will participate in and contribute to US DOE's national GEBs stakeholder processes as well as convene and consult a regional GEBs R&D Advisory Committee stakeholders (state energy offices, public and private research organizations, electric utilities, public utility commissions, regional transmission organizations, smart building technology developers, consumer and business interests, and U.S. DOE and national labs) to guide project research and analysis, as well as to inform research, findings, conclusions, and recommendations.

- Regional GEBs R&D Advisory Committee
- Webinar: Northeast U.S. GEB R&D Effort and Opportunities
- Option: Regional Grid-interactive, Efficient Buildings Workshop (*dependent on US DOE and regional support and/or sponsorship*)

RESEARCH & REPORTS

NEEP's research will clarify GEB status, barriers and information in the Northeast U.S., identify current GEBs R&D initiatives, and outline priorities for GEB R&D and opportunities for coordination and collaboration.

- Research paper on the current status and future of GEBs
- A NEEP webpage with links to relevant GEB resources

NATIONAL/REGIONAL COLLABORATION

In addition to participation in the US DOE GEBs project, NEEP will leverage state, federal, and national resources to inform state plans and policies.

- Monitor, communicate, present, and coordinate with national and regional organizations
- Disseminate U.S. DOE best practices and link states to federal programs and resources
- Engage with stakeholders to contribute to the development of a national conversation

