



Grid-Interactive Homes and Buildings

With broad commitment to decarbonization, the region is moving towards a renewable electric grid, increasing deployment of distributed energy resources, and electrifying several key end uses in homes and buildings. The combination of these important strategies presents multiple challenges for affordable, reliable, high-quality electric service for everyone. It is critically important that homes and buildings are not only efficient, but flexible and able to interact with the grid to meet both grid and customer needs. This will allow grid-interactive products and systems – combined with a clean, flexible grid – to assist states in reaching decarbonization goals.

Historically, homes and buildings have been considered only users of energy. However, grid-interactive or grid-connected buildings have the ability to shed, shift, or modulate energy use in response to grid conditions. If used as flexible sources of energy, homes and buildings will have reduced operating costs, increased value and security, improved comfort and resiliency, and provide grid operators with reduced generation and increased reliability. Grid-interactive buildings are also a critical component in an electrified future. Rapidly scaling the uptake of grid-connected appliances and building systems requires policy and regulatory support, advances in technology and technology uptake, and new business models.

In order to achieve this reality, homes and buildings must include grid-interactive technology, business models must be developed to support consumer uptake, and policy and regulatory frameworks must provide certain pathways for grid modernization. It is imperative that policies, programs, and technology are designed and implemented equitably so that the region's oldest homes and historically marginalized communities are at the forefront of the transition. Without this evolution, the costs of electrification will be higher than necessary and the burden will continue to fall on those who have disproportionately shouldered it.

In 2022 NEEP will expand its work to develop and advance long-term regional market transformation strategies to speed adoption of both grid-interactive technologies and the associated regulatory framework necessary to facilitate building decarbonization. NEEP will work with stakeholders to identify the priority barriers to adoption of grid-interactive homes and buildings and then lead the development and uptake of innovative policies, regulatory action, and residential and commercial programs that help recognize the grid potential of every building and home. While efforts to date have helped demonstrate the opportunities associated with modernized grid technology, innovative programs and grid-interactive homes and buildings, the region requires collaboration to bring these early learnings to scale.

NEEP's 2022 Project Outcomes

1. Three states consider adopting policies and regulations that identify grid-interactive homes and buildings as alternatives to investing in additional grid infrastructure build out (i.e. non-wires or non-pipes alternatives)
2. Three states offer incentive programs for grid-interactive appliances and equipment (including storage) with special consideration for overcoming equity barriers
3. Three states launch grid-interactive homes and buildings demonstration projects

NEEP's 2022 Strategies and Activities

Stakeholder Engagement and Collaboration: NEEP engages diverse stakeholders, including state and local government, efficiency programs, industry, U.S. DOE, U.S. EPA, national labs, and advocates, to develop and advance long-term regional market transformation strategies to speed adoption of both grid-interactive home and building technologies and the associated regulatory framework necessary to facilitate building decarbonization.

- Convene and facilitate a regional Grid-Interactive Homes and Buildings Working Group; includes quarterly working group meetings, topical webinars, and email updates
- Monitor, communicate, present, and coordinate with national and regional organizations (e.g., U.S. DOE, U.S. EPA, Regional Energy Efficiency Organizations, NASEO, NECPUC, Building Performance Association, NBI, SEPA, ACEEE, CEE, E-Source, and advocacy organizations)

Technical Assistance: NEEP provides direct technical assistance to states, communities, consumers, and advocates regarding grid-interactive homes and buildings including:

- Assistance to state energy and other government staff pursuing building decarbonization
- Provide response to public comments that explore the use of this technology
- Educate advocates about grid-interactive homes and buildings and policy opportunities

Tracking and Analysis: NEEP tracks and reports on relevant grid-interactive homes and buildings technologies trends, policy and program activity, pilots and technology demonstrations, the role of such devices to optimize energy performance to help our partners build market momentum to overcome identified market, technology and policy barriers.

- Grid-interactive Homes and Buildings Policy and Program Matrix, including tracking of grid-interactive demonstration projects throughout the region.
- Grid-interactive Homes and Buildings Resource Center on NEEP's website

Tools and Reports: NEEP develops new strategies and tools for programs and industry to advance the market adoption of grid-interactive homes and buildings technologies and programs.

- Two briefs on topics determined by stakeholder needs (topics could include priority policies, strategies, regulation for grid-interactive homes and buildings and the role of AMI in building decarbonization)

Thought Leadership: NEEP influences the narrative around grid-interactive homes and buildings, strategic energy management, and smart energy technologies, by positioning NEEP and its partners as consistent, reliable expert sources of information and resources.

- NEEP 2022 Summit and other events to share work and influence decision makers
- Grid-interactive Homes and Buildings Workshop to highlight regional learnings and explore collaborative efforts to advance a modern grid
- Develop communications program (blogs, interviews, articles, joint papers) to broadcast work, building a broader cohort of engaged partners
- Highlight and champion solutions in regional and national forums
- Representation on national committees, and regional and state boards and committees

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