



Home Energy Management Systems (HEMS)

Empowering consumers and driving deep savings through information and controls

Home Energy Management Systems (HEMS) are new and evolving technologies with a range of energy efficiency potential, including optimizing home energy savings, optimizing distributed energy resources, optimizing home interaction with the grid (through time-of-use pricing, load shifting, demand response), and can also be used to drive residential home retrofits, thus resulting in deeper home energy saving. NEEP has served as a regional and national convener and subject matter expert as states and program administrators work to create coordinated, thoughtful plans for how to harness the power of HEMS, with the long-term market transformation goal that at least 50 percent of all homes in the Northeast and Mid-Atlantic region have at least two major systems that are “energy smart” (e.g., HVAC, water heating, plug loads) by 2030.

Guided by NEEP’s [2016 Home Energy Management Systems Regional Market Transformation Strategy](#), our planned 2017 Products & Services include:

- **Stakeholder engagement:** Since 2014, NEEP has been convening the HEMS Working Group along with the Home Performance Coalition. This working group is the primary mechanism for HEMS stakeholders, including leading state energy offices, efficiency program administrators, manufacturers, retailers, service providers, federal agencies, and national laboratories to coordinate and implement regional market strategies, best practice peer exchange and learning, and to guide our work;
- **Advancing Regional Strategies:** Guided by the strategies set forth in our 2016 report, NEEP plans to embark on three primary activities:
 - a. **HEMS to Advance Home Performance** – While explored in our 2016 report, in 2017 NEEP plans to develop two HEMS in Home Performance Concept Briefs that extrapolate the early ideas in the 2016 report, including how program administrators can take advantage of HEMS’ user interface to send messages of home performance and how contractors can leverage HEMS to improve their business. Additionally, NEEP plans to develop marketing guidance for HEMS and Home Performance bundled services, participate with the Smart Home track at the Home Performance Coalition National Conference, and host a contractor training on the smart energy home. Additional contractor training sessions will be available to state partners supporting this project.
 - b. **HEMS Technology and Efficiency Program Development** – To support the advancement of HEMS technology as energy efficiency and demand-side program resource, NEEP will: engage and share information with organizations that have efforts in the smart water heating space; analyze and comment on ENERGY STAR’s connected product proposals, updating NEEP’s online HEMS product list; and work with program administrators to help move smart products into ratepayer-funded programs. This includes developing program design guidance for smart thermostats. NEEP will also monitor relevant public policy development, and provide technical support or comments.



**STRATEGIC
ELECTRIFICATION**



**MARKET
TRANSFORMATION**



NEEP’s Long-term Goal: *Assisting the Northeast/Mid-Atlantic region to reduce total carbon emissions by 80% by 2050 (Relative to 2001 levels). Visit us online at neep.org*



For more information about this project or to get involved, please contact:
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*To inquire about sponsorship opportunities for events and projects, please contact **Lucie Carriou**, Events Manager: lcarriou@neep.org*



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- c. HEMS Technology Market Research and Outreach** – NEEP will continue to research and advance conversations throughout the smart home world to advance HEMS as energy efficiency tools and resources. This includes engaging HEMS service providers and security companies, outreach to companies leading the voice control market, and developing guidance materials for program administrators to advance the smart energy home.

PRODUCTS & SERVICES

STAKEHOLDER ENGAGEMENT & STRATEGIC PARTNERSHIPS

- Bi-Monthly meetings of HEMS Working Group
- Targeted industry outreach to align products and services with energy efficiency programs
- Industry-Efficiency Program Roundtable
- Quarterly HEMS Newsletter
- Partners including: ENERGY STAR Program, Home Performance Coalition, Natural Resources Defense Council, Natural Renewable Energy Lab, and the Center for Energy and Environment

WORKSHOPS / WEBINARS

- Smart Energy Homes Market Transformation Workshop
- Presentations at regional and national conferences
- Topical Webinars

GUIDANCE & TECHNICAL ASSISTANCE

- Concept Briefs: Home Performance Concept Briefs
- Guidance Documents:
 - Smart Thermostat Program Design
 - Marketing Guidance for HEMS and Home Performance Bundled Services
- Contractor Training - Smart Energy Home
- Coordinated comments on relevant draft ENERGY STAR products and program resources
- Invited comments on relevant program and policy proposals

TRACKING & ANALYSIS

- Web-based HEMS resource center at www.neep.org with links to reports, blogs, and resources
- Product List: Bi-Annual Updates to NEEP's HEMS Technology Assessment
- HEMS-related Public Policy Tracking

Pending sufficient funding and interest, NEEP will expand the 2017 HEMS Initiative to add a Smart Water Heater Market Transformation Project

Smart/Connected Water Heater Market Transformation: NEEP will prepare a market transformation report to accelerate market adoption of high efficiency smart/connected water heaters. Guided by a Leadership Advisory Committee of experts, i.e., leading manufacturers, program administrators, and other key market actors, NEEP will lead market characterization research, identify major barriers to widespread adoption, and prepare a multi-year market transformation strategy to overcome barriers and hasten production and adoption of smart water heaters. NEEP will work to publicize and promote the findings as well as continue to build partnerships and develop resources to implement the recommended strategies.



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