NEEP 2018 QUARTERLY REPORT
QUARTER THREE

Leadership Recognition and Policy Tracking

Advanced EM&V Solutions

Hosted a public webinar on *Quantifying the Energy Efficiency Value Proposition: Recent Non-Energy Impact Research*: There are a number of cost-effectiveness developments that can help states and program administrators with planning and reporting on energy efficiency programs. The September 19, 2018 webinar discussed a soon-to-be-published repository of cost-effectiveness parameters (E4TheFuture); the framework for evaluating non-energy benefits targeting specific sectors (National Grid-Massachusetts); case studies of commercial/industrial benefits (AEP Ohio); and cutting edge research on benefits of advanced lighting controls and design (DNV GL), which also help illustrate how lighting controls can be a gateway to other smart building applications. A recording of the webinar can be found here, and slides here.

Policy and Program Trends and Progress Tracking

Published a peer reviewed paper for ACEEE's Summer Study: NEEP staff presented findings from the paper during a strategic electrification policy panel during the conference, which took place August 12-17, 2018. The paper laid the foundation for the development of NEEP's policy framework for building decarbonization. Presentation of the paper's findings at the ACEEE Summer Study provided an opportunity for wide dissemination to key stakeholders.

Resilient, High Performance Buildings and Communities

Pathways for Efficient and Resilient Communities

Held an in-person meeting for the Regional High Performance Buildings and Communities Working Group: This year's in-person meeting was held at the Christa McAuliffe School, a high performance facility in New Hampshire. Stakeholders from around the region gathered to discuss lessons learned from state and local initiatives and financing options for energy efficiency projects in communities, as well as for a tour of the high performance school led by the project architect and facility director. This annual gathering is a forum to learn and exchange best practices to build market capacities for high performance buildings and communities across the region.

Building Energy Codes and Benchmarking

Disseminated NEEP resources and provided technical assistance on building energy codes to stakeholders throughout the region: NEEP engaged hundreds of stakeholders, both in person and virtually, throughout the quarter by disseminating code resources and providing in-depth technical assistance that led to the progression of code adoption, code compliance, and the refinement of regulatory processes in six states. From Austin, Texas to Maine – with Maryland, Massachusetts, New Hampshire, Delaware, and Vermont in between – we demonstrated the importance of code adoption and compliance, which in turn reduces energy demand and carbon emissions. Through energy code stakeholder engagement and technical assistance, NEEP is addressing our long-term goal of decarbonization of the electric grid, energy reduction in existing buildings, and zero energy code adoption in leading Northeast States. NEEP's building energy codes initiative continues to be core to our work, as codes can affect a great number of buildings on a year-to-year basis.

Home Energy Labeling Information eXchange (HELIX)

Achieved greater data integration in the HELIX database: HELIX has successfully integrated the U.S. Green Building Council's (USGBC) LEED program for homes, as well as National Green Building Standard data into the database for all pilot states. In addition, we have successfully imported solar photovoltaics (PV) in Vermont and U.S. Department of Energy (US DOE) Home Energy Score (HES) in Rhode Island. By integrating these different data sources, HELIX will be a central aggregator for home energy information for Multiple Listing Services (MLSs). This contributes to successful beta testing of different data providers and the long-term market transformation goal of home energy labels/certifications being used widely in real estate listings.

Integrated Advanced Efficiency Solutions

Air-Source Heat Pumps and Smart Energy Homes

Published a proposal to create a new version of NEEP's Cold-Climate Air-Source Heat Pump (ccASHP) Specification (version 3.0): NEEP solicited and received 15 comments in response to the proposal. Since 2015, NEEP has managed and housed the ccASHP Specification and the list of products that meet the specification's requirements. These requirements include both specific performance levels as well as a series of reporting requirements. The development of the Specification was informed by a market strategy in NEEP's 2014 Northeast/Mid-Atlantic ASHP Market Strategies Report that suggested ASHP stakeholders "develop standardized metrics for cold-climate ASHP performance" as a strategy to accelerate adoption of ASHPs.

Eight programs in the region and outside of the region rely on the specification and list as resources to help implement energy efficiency programs.

Efficient, Low Carbon Commercial and Industrial Solutions

Finalized a Strategic Energy Management (SEM) factsheet and a supporting informational document for NEEP's CAPEE tool: These resources are intended to educate users of the Community Action Planning for Energy Efficiency (CAPEE) tool on SEM, ISO 5001 Standard, US DOE's 50001 Ready Program, and US DOE's 50001 Navigator Tool. CAPEE was created to support community action on energy efficiency, and these resources will strengthen that effort. The resources are specifically targeted to municipalities with water/wastewater (WWW) treatment facilities. WWW has been found to be an excellent application of SEM. NEEP will continue to drive communities to utilize the CAPEE tool and drive use of the SEM resources in their WWW facilities.

Federal and State Appliance Standards

Hosted a public webinar exploring the 2020 implementation of the general service lighting (GSL) efficiency standard: Commonly referred to as the Energy Independence and Security Act (EISA) 2020, this is an incredibly important appliance standard with the potential to save 140 billion kwh/year by 2025. The September 14 webinar featured presentations from NEEP staff and the lighting lead from the Appliance Standards Awareness Project (ASAP). It focused on possible scenarios for the roll out of EISA 2020, especially given uncertainty coming from US DOE and the lighting industry. The webinar had a wide reach, with 96 attendees, and received positive reviews and generated many questions and opportunities for continued action.

Strategic Electrification

Strategic Electrification

Presented findings from NEEP's Action Plan to Accelerate Strategic Electrification in the Northeast: The plan provides a series of action areas that key regional stakeholders can take in order to move strategic electrification forward over the next three to five years. To drive adoption of the strategies, NEEP engaged in discussions with stakeholders throughout the region. This included presentations at the National Rural Electric Cooperative Association's (NRECA) Beneficial Electrification Workshop on July 19-20, the Electric Power Research Institute's (EPRI) Electrification Summit on August 21, the Building Electrification Advisory meeting on September 6, the Massachusetts Clean Energy Caucus on Building Electrification on July 25, and stakeholder discussions on the issues and opportunities related to building

electrification at the Rocky Mountain Institute's eLab Summit on September 5-7. The Energy Foundation, Heising-Simons Foundation, ClimateWorks Foundation, and a group of other philanthropic foundations also convened stakeholders to discuss issues related to electrification of heating fuels in buildings.

Leadership Recognition and Policy Tracking

Events & Stakeholder Engagement

- **Hosted a webinar for state energy officials on findings from NEEP's regional assessment of data and resources for planning and forecasting for strategic electrification:** At the September 5 webinar, ISO-New England (ISO-NE) staff affirmed the data sources that were identified by the research and also noted that their work on strategic electrification would benefit from further regional collaboration. State officials also confirmed that more information about heat pump performance and market conditions would be useful in strategic electrification planning.
- **Updated M&V 2.0 project partners:** NEEP hosted a private webinar on September 24 for the project's state partners on the progress and status of various M&V 2.0 activities.
- **Planned for the annual M&V 2.0 Workshop: Evolving the Paradigms of M&V:** The workshop will be held in Burlington, Vt. on November 7 and will explore the potential for M&V 2.0 to support advanced efficiency as the energy industry evolves.
- **Worked with Vermont state partners to advance M&V 2.0:** The group met to facilitate planning and development of the M&V 2.0 Vermont State Partner meeting, which is scheduled to dovetail with the annual M&V 2.0 Workshop in Vermont on November 7.
- **Attended and provided comments at the Connecticut stakeholder meeting regarding cost-effectiveness testing:** At the meeting, hosted by the Connecticut Department of Energy & Environmental Protection (CT DEEP), NEEP served as a technical expert on cost-effectiveness and recommended the National Standard Practice Manual (NSPM) as a framework for the state's efforts in this area.
- **Provided comments at the Massachusetts Energy Efficiency Advisory Council (EEAC) meeting:** NEEP's comments focused on the second draft of the state's 2019-2021 Energy Efficiency Plan in response to a request from the Massachusetts Department of Energy Resources (MA DOER). This provided an opportunity to comment on new opportunities for energy and demand savings, as well as the incorporation of the Act to Advance Clean Energy from 2018 into the plan.

Research, Analysis, Reports, and Case Studies

- **Completed the Regional Electrification Survey:** The results of this EM&V research were presented in a public webinar. The research, conducted in conjunction with contractor Synapse Energy Economics, was a regional assessment of data and resources for planning and forecasting

for strategic electrification. It identified numerous gaps in data, with particular needs for market intelligence, product performance, and training resources on the topic of heat pumps. Additional research would be helpful to further explore some of the transportation-related data sources and gaps. Recommendations from this project also include future projects to develop a repository of loadshapes, models, and data sources; future collaboration among states; and leveraging of funding for additional studies.

- **Published the blog *Rapid Feedback: What Makes it Great?*:** Rapid feedback is enabled by new technology – e.g., M&V 2.0 software, smart devices, the Internet of Things, and blockchain – and has the capability to facilitate the dauntingly complicated decision-making and types of transactions that are beginning to confront our energy industry.
- **Published the quarterly EM&V newsletter on recent EM&V-related products and activities:** The newsletter featured information on National Standard Practice Manual-related developments as well as a link to guidance on M&V 2.0 published in Missouri.
- **Shared updates on the M&V 2.0 Pilot research:** NEEP attended the Association of Energy Services Professionals' (AESP) summer conference, where the pilot was presented on by our Connecticut partner.
- **Completed the report *Northeast Regional Energy Efficiency Database, Program and Measure Data*:** The report provides documentation of the update process for the Regional Energy Efficiency Database (REED), as well as an appendix that includes documentation of efficiency measure incentives in Northeast region states, measure-level cost-effectiveness parameters from N.H., Mass., and Conn., and a look at expected trends in the region's energy efficiency program measures and incentives. Data from this report is a resource that states can use to benchmark their measure-level incentives. It will be published by the U.S. Energy Information Administration (US EIA) and is available from NEEP by request.
- **Published the 2018 Energy Efficiency Snapshot:** The Snapshot provides an updated look at energy savings from energy efficiency programs, as well as new sections looking at carbon reduction. It also shows progress achieved through energy efficiency programs implemented by utilities and reported to REED.

Technical Assistance and Resource Centers

- **Provided technical assistance to Efficiency Maine Trust:** NEEP provided written comments on the state's draft Triennial Plan IV, highlighting the relevant environmental and energy policies that should be considered when developing the plan and evaluating cost-effectiveness. In addition, the letter commended Efficiency Maine's Innovation Program, which provides modest funding for pilot projects to demonstrate new types of energy efficiency, conservation, alternative energy measures, or new strategies for promoting existing measures.
- **Provided technical assistance to Connecticut:** NEEP submitted a comment letter to the Connecticut Energy Efficiency Board (EEB) to provide input on what should be included in the state's 2019-2021 Conservation and Load Management (C&LM) Plan and key issues to consider when drafting the plan. NEEP was able to highlight the importance of cost-effectiveness and aligning energy efficiency programs with state policies, such as those focused on carbon

reduction. Our comments also highlighted the home energy solutions program, renewable technologies, and the energy efficiency resource standard.

- **Provided written comments on the *New Efficiency: New York* publication:** The comments were in response to the New York Governor's announcement of the 2025 energy savings target. They focused on methods to achieve deeper savings, cost-effectiveness, and building codes and standards.
- **Submitted a comment letter to the Massachusetts Energy Efficiency Advisory Council (EEAC):** The letter followed up on verbal comments made at the EEAC's September meeting and delved into further detail about different aspects of the state's 2019-2021 energy efficiency plan. This offered the opportunity to provide more context and highlight opportunities for MA DOER to engage with NEEP in market transformation strategies.
- **Published two Policy Trackers for July and September:** The Policy Tracker is a resource to communicate the most recent policy developments and trends from the region to NEEP's stakeholder audience. The July publication took a close look at some of the most recent efforts by state legislatures around the region, while the September edition focused on the three-year planning process for energy efficiency in Connecticut, Maine, and Massachusetts
- **Published REED Rendering #10:** This publication focused on funding mechanisms for energy efficiency programs, and aimed to help stimulate thinking about the ability of current mechanisms to address states' goals, or determine if new innovative approaches are needed.

Regional Market Transformation Strategies

- **Hosted a public webinar on strategic electrification:** The September 20 webinar (slides here) presented findings from NEEP's regional assessment of data and resources for planning and forecasting for strategic electrification, discussed above.

Resilient, High Performance Buildings and Communities

Events & Stakeholder Engagement

- **Participated in three events focused on zero energy buildings:** An increasing number of communities are establishing aggressive energy reduction goals including zero energy targets. Through partnerships with synergistic organizations, NEEP facilitated a roundtable discussion at a meeting in Massachusetts and then presented at two additional events. These events equip stakeholders with knowledge of the holistic benefits of zero energy buildings and also influence early adopters to create replicable approaches for other communities in the region.
- **Convened and facilitated the New Hampshire High Performance Schools Working Group:** The group continued work to increase the number of schools being benchmarked through a simplified approach to using the U.S. Environmental Protection Agency's (US EPA) Portfolio

Manager. Additionally, group members decided to give a joint presentation at an upcoming event in October for school business officials and other key stakeholders. Both efforts will lead to an increased participation in utility program offerings and the number of schools in New Hampshire with high performance features.

- **Conducted a Regional Energy Codes Working Group quarterly webinar:** The primary focus of the webinar was the forthcoming 2021 International Energy Conservation Code (IECC) Development Process. The webinar also provided an overview of the status of code adoption throughout the NEEP region and introduced new resources and upcoming events. The process for submitting proposals, and how the code hearings and vote process works were emphasized. Cammy Peterson from the Metropolitan Area Planning Council (MAPC) presented the progress of the Massachusetts campaign to get as many people as possible committed to submit and vote on energy-efficient proposals. Thirty-four attendees from 11 states participated. The webinar furthered the goal to create a 2021 IECC that is at least 20% more efficient than the 2018 IECC, taking another step toward NEEP's goal of zero energy building codes by 2030.
- **Organized and hosted a Pennsylvania Code Collaborative teleconference:** The August quarterly meeting focused on upcoming training opportunities for the state's newly adopted 2015 IECC. NEEP shared training links with the group and encouraged Collaborative members to share these with their networks. The goal of the Collaborative is to ensure stakeholders are undertaking initiatives to increase energy code compliance through sharing resources, best practices, and new ideas. The next teleconference is currently being planned for November.
- **Assisted in planning for and participated in the 2018 National Energy Codes Conference:** The July 2018 US DOE National Energy Codes Conference in Austin, Texas featured two NEEP-organized sessions as well as the main plenary session. One session educated a packed room of approximately 200 people about the challenges and opportunities associated with the Energy Rating Index compliance path, which generated lively discussion and many questions. The second session highlighted unconventional and new stakeholders in the realm of energy codes, including real estate professionals, sustainability directors, and environmental advocates. The plenary session was an open forum for all conference attendees to discuss "Whose Job is it Anyway?" to adopt, comply with, and enforce the energy codes. This activity relates to NEEP's long-term goal to increase building energy code efficiency to zero energy by 2030.
- **Coordinated the Maine Uniform Building and Energy Code (MUBEC) Working Group:** NEEP is providing ongoing technical assistance and organizational guidance to stakeholders in Maine seeking to update the state's energy code. Maine is three code cycles behind the national energy code, using the 2009 IECC with weakening amendments. One amendment allows communities with less than 4,000 residents an exemption from complying with the energy code. The stakeholders involved include various resident organizations, the Institute for Market Transformation (IMT), and the Carbon Neutral Cities Alliance (CNCA). Since beginning participation, NEEP has agreed to co-lead the group moving forward. Currently, the group is researching the various paths to updating the energy code for the state as well as for individual communities. NEEP seeks to ensure that the state updates its outdated energy code and undertakes initiatives to increase energy code compliance, and is providing resources to individual communities looking to update their energy codes at the local level.

- **Educated future environmental lawyers:** NEEP presented to a graduate class in energy policy at Vermont Law School's Institute for Energy and the Environment. The presentation provided an overview of code development and adoption. Further group discussion focused on stretch codes, zero energy codes, and the legal and regulatory ramifications of above base code adoption. The law school professor stated, "The presentation expanded the students' views on how energy efficiency can be achieved and what we need to ask of our codes to reduce greenhouse gas emissions." The purpose of these speaking engagements is to engage a new group of stakeholders who demand more efficient energy codes, which can contribute to the goal of zero energy building codes by 2030 in leading Northeast states.
- **Presented on the Home Energy Labeling Information eXchange (HELIX):** NEEP presented at the annual meeting of the National Association of State Energy Officials (NASEO) to educate stakeholders about the HELIX database and how it can be used to advance state policies and programs for residential labeling. HELIX was presented during a panel with cities and states across the country that are implementing home energy labeling initiatives, which highlighted HELIX as a key tool for connecting this information to the real estate market.
- **Presented on HELIX during a webinar hosted by Northeast Home Energy Rating System Alliance (NEHERS)**: Fifteen NEHERS members, the majority of which were Home Energy Rating System Index (HERS) raters, attended the webinar to learn how HELIX benefits HERS raters and the HERS rating industry as a whole. The webinar recording is posted the NEHERS website, accompanied by a 10-question quiz that members can take to receive Residential Energy Services Network (RESNET) continuing education credits.
- **Convened the HELIX Advisory Committee:** At the meeting, NEEP provided an update on the project, informed stakeholders on the 2018 HELIX Summit scheduled for December 7, and gathered input on the HELIX one-page resources in development. Engaging this committee helps ensure successful beta testing and development of HELIX across the pilot region.
- **Prepared for the third annual HELIX Summit**: The 2018 HELIX Summit agenda is complete registration is now open. In addition, potential sponsors and exhibitors were identified, a mass email was sent out marketing the Summit, and speakers were confirmed.
- **Met with stakeholders outside the HELIX pilot region to discuss the project**: NEEP met with Colorado stakeholders to educate them on HELIX and the potential use of the tool for various city home energy labeling programs under development. This provided an opportunity to understand the interest outside the pilot region and potential to expand HELIX's reach.

Research, Analysis, Reports, and Case Studies

- **Began development of a schools-specific module for CAPEE:** The goal of this new module, to be released later in 2018, is to help small- to mid-sized communities navigate the complex and laborious process of building a new school. Information including model language for RFPs, questions to ask design teams, information on making the business case, proper operations and maintenance procedures, and more will be included. Providing this in-depth level of detail will enable communities to more readily take on high performance school projects ensuring better outcomes for students and the community at large.

- **Analyzed absentee data for schools in New Hampshire, Massachusetts, and Rhode Island:** Achieving broad-based buy-in for school projects is one of the keys to a successful project. To support this, NEEP is conducting ongoing research to provide real-world data on the health benefits of high performance schools. This data will be incorporated into NEEP's Operations and Maintenance Guide and CAPEE to equip stakeholders with the information they need to increase the number of schools built to high performance standards in the region.
- **Collaborated with National Grid to release an exemplar on Energy Code Compliance Attribution:** The exemplar outlines how National Grid attributes savings to energy code compliance efforts. Various regional stakeholders will be able to use this document to accelerate adoption of energy code compliance attribution by utilities and program administrators. Additionally, attribution will allow states to calculate anticipated carbon reduction from code compliance initiatives. The exemplar will be published by the end of November 2018, and will contribute to sharing of best practices for utilities to undertake initiatives to increase code compliance.
- **Published the blog *The Rural Energy Cost Burden***: This blog addresses how utilities and program administrators benefit from focusing on increasing rural efficiency within rural communities. Rural communities historically have a disproportionately high energy burden primarily due to the types of fuels – usually delivered fuels – being used. Also, rural communities often do not have access to utility incentive programs and energy specialists. This blog shares best practices and resources that will contribute to increased energy code compliance by encouraging utilities and energy efficiency program administrators to undertake initiatives to increase code compliance.
- **Updated and enhanced NEEP's Renter's Guide and Checklist:** NEEP updated one of our most widely distributed resources – the Renter's Guide and Checklist. This guide assists potential rental property seekers to determine if the property they are considering is efficient or non-efficient. The updated checklist ensures that information remains relevant as new HAVC and control systems enter the marketplace. Additionally, NEEP published a blog to highlight the update. The update also provided opportunities to co-brand the checklist with the Buildings Performance Institute and National Grid-New York, furthering the distribution scope of NEEP resources.
- **Continued research and development of the Building Energy Benchmarking Dashboard:** This dashboard will provide a graphical representation of the impacts that benchmarking efforts are having throughout the region. The dashboard, to be published later in 2018, will highlight cities with benchmarking ordinances as well as lead-by-example efforts for public buildings. This resource will spur others in the region to enact ordinances to measure building energy usage, and take action leading to overall reduced energy consumption.
- **Began research on a new HELIX business model:** This will ensure that HELIX has a revenue model and is self-sufficient following the end of US DOE funding for the project. Development of the business model included a questionnaire to guide conversations with state energy offices to collect data on the types of services that would be most valuable and of interest to have in the business model.

- **Completed HELIX fact sheets:** NEEP developed a one pager to highlight how cities can use HELIX as a solution for populating real estate listings with home energy information when implementing a city ordinance or policy. This resource will be used as part of a three-year marketing and communication strategy to accelerate the market adoption of home energy labeling.

Technical Assistance and Resource Centers

- **Engaged with the Rhode Island Office of Energy Resources (RI OER) on high performance schools:** NEEP is actively engaged in Rhode Island to support efforts on regulations pertaining to high performance school construction. Through this work, resources are being built and stakeholders engaged to demonstrate and share the impact the current program has had in Rhode Island. Ultimately, the goal of this work is to maintain Rhode Island as a leader in high performance school development.
- **Provided resources to inform a high performance school project:** Through this engagement, NEEP is able to provide communities with important information that will help drive the development of schools that are energy efficient, healthy, and productive learning environments.
- **Provided technical assistance to the Massachusetts IECC & Municipalities Working Group**: The goal of this working group goal is to sign up as many eligible voters as possible to participate in the 2021 IECC development process to ensure at least a 20% increase in energy efficiency for the forthcoming version of the energy code. The Boston-based MAPC leads the group and NEEP provides resources and data to support the "Get out the Vote" efforts. It was identified that there are a total of 16,156 governmental member voting representatives (GVMRs), but only about 400 voted for IECC change proposals for the 2018 IECC development process. The Get out the Vote initiative seeks to increase voter participation in the 2021 code development cycle to ensure the 2021 IECC is at least 20% more efficient than the 2018 IECC.
- **Supported Delaware's Code Coalition**: NEEP continued to provide extensive technical assistance to the Delaware Codes Coalition. The Coalition is in the process of adopting the 2018 IECC and the state may incorporate beyond-code provisions directly into the base code or possibly enact a stretch code.
- **Provided technical assistance in Maryland**: Maryland is in the process of adopting the 2018 IECC. NEEP has provided technical assistance to the Maryland Division of Labor and Industry (MD DLI) related to diagnostic testing requirements of the code. We have also reviewed formal code change proposals and collaborated with the Responsible Energy Codes Alliance (RECA) to propose compromise measures to proposed weakening amendments to ensure the code update is energy efficient.
- **Actively participated in Vermont's latest code adoption:** The Vermont Department of Public Service (VT PSD) is currently crafting a draft version of their anticipated 2018 IECC**.** The 2018 energy code will be at least ten percent more efficient than the national model base code. Additionally, various compliance options will assist builders in choosing a path that best suits the scale and economics of the project. Vermont seeks to require all buildings be zero energy by 2030; the 2018 version of the code will be the first step in reaching that goal.

- **Provided technical assistance in New Hampshire:** New Hampshire is considering adoption of new residential and commercial codes. NEEP provided the New Hampshire Department of Environmental Services (NH DES) with resources, case studies, and technical information to inform the process. Additionally, NEEP attended several meetings of a legislative committee established to review and make recommendations regarding the state's code adoption and compliance process. NEEP will be submitting comments responding to the committee's recommendations to ensure increased energy efficiency in the next version of the state's energy code and to avoid weakening amendments.

Regional Market Transformation Strategies

- **Updated the Northeast Collaborative for High Performance Schools (NE-CHPS) Criteria and engaged stakeholders in a peer review process:** NE-CHPS was updated to improve the sections on energy and acoustics. The energy efficiency baseline is being updated to align with the 2015 IECC and will require schools to be at least ten percent better than code. The purpose of these updates is to ensure that requirements set forth in NE-CHPS are stringent but also to reduce the documentation burden for communities leading to more schools utilizing NE-CHPS.

Integrated Advanced Efficiency Solutions

Events & Stakeholder Engagement

- **Convened the Air-Source Heat Pump (ASHP) Working Group:** NEEP hosted the ASHP Working Group on September 26. The meeting was well attended, with 37 participants across 25 organizations participating. The working group serves as the implementation vehicle for NEEP's regional market transformation strategies as outlined in our Northeast/Mid-Atlantic Air-Source Heat Pump Market Strategies Report.
- **Convened the Home Energy Management Systems (HEMS) Working Group:** NEEP hosted the HEMS Working Group meeting on August 2. The meeting was well attended by 33 participants across 30 organizations, including representation from N.Y., Mass., R.I, Vt., Wis., the Midwest Energy Efficiency Alliance (MEEA), the US EPA, the Pacific Northwest National Laboratory (PNNL), and NREL. In a post-webinar survey, 100% of those that attended responded that participation was of value and helpful to their work in the area.
- **Hosted a webinar for the Strategic Energy Management (SEM) Collaborative:** The September 15 webinar provided a platform for collaboration with policymakers, program administrators, and commercial and industrial energy managers in the Northeast, with the aim of accelerating the adoption of SEM in the commercial and industrial sectors. US DOE typically participates in these discussions to inform the group on the latest developments that support the adoption of SEM.

- **Began planning for the Northeast SEM Collaborative Workshop:** NEEP and project partners began planning by identifying speakers for the regional Strategic Energy Management Workshop, which is scheduled to take place on November 6, 2018 in Burlington, Vermont.
- **Participated in US DOE's 50001 Ready Utility Network Series:** This network series hosted by US DOE is a facilitated forum for SEM stakeholders – including those with interest in ISO 50001 and US DOE's 50001 Ready Program – to interact and learn from each other. The latest series featured Ed Birch of the Strategic Energy Group, who provided insights into his use of the 50001 Ready Navigator and recognition program to add value for his customers.
- **Convened the Appliance Standards Working Group:** The September 21 teleconference was well attended with 12 stakeholders participating, with representation from N.Y., Vt., Conn., Mass., R.I., and ISO-NE. The meeting agenda focused on updates on federal activities as well on state standards progress, and included a comprehensive update on recent ENERGY STAR activities.
- **Planned for the in-person Appliance Standards Working Group meeting:** After the success of our 2017 in-person meeting, NEEP and project partner the Appliance Standards Awareness Project (ASAP) will again host an in-person meeting in 2018 to strategize on moving forward state standards. Planning kicked off in the first quarter of the year for the October 1 meeting in conjunction with the NEEP Summit in Middletown, R.I. This included agenda development, material collection, and participant recruitment.
- **Educated stakeholders on appliance standards:** In September, NEEP staff presented on two panels at the E Source Forum 2018, with over 100 participants in each session. One presentation focused on the opportunities for market transformation to build the levels of high efficiency products available to consumers, and the other focused on the Energy Independence and Security Act (EISA) 2020 rule on lighting and implications for utilities. Both sessions were well attended, received positive feedback, and NEEP is collaborating with E Source to prepare a brief on EISA, expected to be released in the fourth quarter of 2018. NEEP also hosted a public webinar – EISA 2020: Bringing Clarity to Uncertainty – to explore the facts, myths, and unknowns surrounding the regulation.
- **Continued to track federal appliance standards and bring that information to the region**: NEEP continued to track actions from US DOE on federal standards including weighing in on the nominations to the Appliance Standards and Rulemaking Federal Advisory Committee (ASRAC) as well as participating in the newly formed ASRAC for VRF Technology. Furthermore, NEEP identified two forthcoming US DOE opportunities for comment, including a smart appliances and a dedicated-purpose pool pump replacement motor rule.
- **NEEP and the region weighed in on the value of ENERGY STAR Program:** In addition to coordinating with efficiency stakeholders on the ENERGY STAR Retail Products Platform program, NEEP weighed in on several influential ENERGY STAR specifications including the 2019 Most Efficient Criteria, the Residential Air Source Heat Pump/Central AC specification, as well as participating in discussions on Electric Vehicle Service Equipment (EVSE) and the SHEMS efforts.

Research, Analysis, Reports, and Case Studies

- **Completed research on integrating the smart home with strategic electrification and distributed energy resources:** NEEP completed research, interviews, and a draft of the

forthcoming whitepaper focused on how the smart energy home can drive residential building decarbonization. The whitepaper incorporates interviews, research, and new analysis and features several case studies; it is expected to be published in the fourth quarter of 2018.

- **Co-authored an ACEEE Summer Study paper:** The paper, entitled *The Air Source Heat Pump's Transformative Potential*, focused on the opportunity that air-source heat pumps present for the U.S. for the advancement of energy efficiency. NEEP joined authors from the Northwest Energy Efficiency Alliance (NEEA), the Business Professionals of America (BPA), and the American Council for and Energy-Efficient Economy (ACEEE), using our experience managing a regional market transformation initiative to inform the report.
- **Conducted market research on variable refrigerant flow (VRF) technology**: NEEP has been taking steps toward developing a Regional VRF Market Transformation Strategy Report that will summarize the VRF market, technology, best practice program design, and regulatory elements to support the accelerated adoption of VRF heat pump technology in regional energy efficiency programs.
- **Created informational resources on state standards opportunities:** NEEP and project partner ASAP have been coordinating closely to create fact sheets with key information about state-level appliance standards. We worked with stakeholders in Mass. and R.I. to determine what happened with state standards in 2018 and how to re-tool for success in 2019.

Technical Assistance and Resource Centers

- **Updated NEEP's installer and customer ASHP guides:** NEEP made progress on improvements to the best practice guides for sizing, selecting, and installing ASHPs in cold climates. The existing guides will be supplemented with a new consumer-facing two-page resource on ASHP Owner Best Practices to help ensure that ASHP owners are getting the most out of their systems. These new and updated resources will be completed and published in the fourth quarter of 2018. We also began planning for the development of video versions of the Installer Guides. The existing Installer Guide has been downloaded 1,089 times and the Sizing & Selecting Guide 1,021 times thus far in 2018.
- **Informed the development of next generation rating methods for ASHPs:** NEEP contributed to a multi-stakeholder process to develop a new rating method for ASHPs. The group is facilitated by ACEEE and includes efficiency advocates and manufacturers. NEEP contributed insights into the benefits of a new test/rating method being developed by CSA as a potential model from which to start. NEEP also brought perspective gained through management of our ccASHP specification.
- **States advanced appliance efficiency standards:** NEEP has been working with stakeholders throughout the region to advance the collective understanding of and commitment to state-level appliance standards. To support this, NEEP hosted state-specific discussions related to appliance standards efforts in R.I., Mass., Vt., N.Y., Conn., and D.C. and continued outreach to N.J.

Regional Market Transformation Strategies

- **NEEP's cold-climate Air-Source Heat Pump (ccASHP) products list continued to grow:** By the end of the third quarter of 2018, eight leading programs – including MassCEC, Efficiency Vermont, and NYSERDA – had adopted the specification and products list as part of their qualification for incentives. The specification and associated products list includes over 1,300 products and has been downloaded over 11,527 times thus far in 2018. The list is a mechanism for the market to differentiate ASHP systems that can operate efficiently in cold climates.
- **Drove market transformation through partnership with ENERGY STAR's Smart Home Energy Management Systems (SHEMS) program:** NEEP was selected to formally participate in ENERGY STAR's SHEMS program by co-chairing a workgroup focused on integration with distributed energy resources (DER) and demand response. In addition to this workgroup being directly relevant to a report that NEEP is completing this year, ENERGY STAR's SHEMS effort, prioritizing engagement with service providers such as home security, is directly picking up the strategy identified in NEEP's 2016 Smart Energy Home Market Transformation report.
- **Conducted a market assessment of VRF technology:** NEEP has been developing a Regional VRF Market Transformation Strategy Report – a document intended to bring together key VRF market information and regional strategies. After weighing in on NYSERDA's VRF Market and Technical Analysis report, NEEP contracted with the Vermont Energy Investment Corporation (VEIC) and is working with them to fill important VRF market gaps, identify key barriers and opportunities to leverage for greater VRF adoption, identify strategies to overcome barriers, and produce the Regional VRF Market Transformation Strategy Report.

Strategic Electrification

Technical Assistance and Resource Centers

- **Updated NEEP's Strategic Electrification Project Resource Catalogue:** The Resource Catalogue compiles a number of resources and proceedings relevant to strategic electrification into a single resource for stakeholders to track the latest research, analysis, and policy venues.