



NEEP 2021 Quarterly Report Quarter Three



Equitable Home and Building Decarbonization Leadership Network

Summit Series 2021: Resilient Low-Carbon Community Pathways

Mission: Provide a public program of opportunities and resources that inspire, inform, drive, and support community leadership and collaboration across the region to accelerate resilient, healthy, affordable, low-carbon homes and buildings that serve especially the most vulnerable.

Summit Series 2021: Resilient Low-Carbon Community Pathways Long-Term Market Transformation Goals

By 2030:

- All Northeast states adopt 2050 carbon-neutral mandates for all homes and buildings with zero energy/carbon codes for new and renovated homes and buildings to begin by 2032.
- All Northeast states engage LMI communities to implement equitable economic development programs that improve the efficiency, resiliency, health, safety, and long-term affordability of their homes and community buildings.

Project Narrative:

NEEP's annual Summit provides a public program of opportunities and resources that inspire, inform, drive, and support community leadership and collaboration across the region to accelerate resilient, healthy, affordable, low-carbon homes and buildings that serve especially the most vulnerable.

In the third quarter of 2021, NEEP successfully delivered its Summit Series to virtual attendees. At the outset of COVID-19, we made the decision to hold virtual events for 2020 and 2021, enabling us to focus solely on reimagining the content and delivery of this signature annual event. The [*Summit Series 2021: Reimagining & Rebuilding Communities*](#) highlighted climate stabilization and resiliency, affordability and equity, economic recovery and growth, and public health and wellbeing. This was especially important as NEEP celebrated 25 years of partnerships to accelerate building energy efficiency across the region.



The 2021 Summit Sessions explored the following topics:

- **Climate Stabilization and Resiliency** – Prepare homes, buildings, and institutions to reduce carbon emissions and provide public safety, protection, and essential services during and following extreme weather, flooding, and other climate-change related hazards.
- **Affordability and Equity** – Engage low-income communities and listen. Support dialogue outcomes that develop and advance affordable, low-carbon, resilient housing and building solutions with quality local jobs that reduce energy burdens and improve the quality of life for economically disadvantaged populations.
- **Economic Recovery and Growth** – Increase workforce capacities, business opportunities, and local employment to rebuild sustainable, healthy, equitable post-carbon communities across the region.
- **Public Health and Wellbeing** – Provide greater opportunities for all people to lead healthy lives by improving the condition, comfort, energy efficiency, and air quality of homes, schools, workplaces, and communities.

Supported by Barr Foundation, Mitsubishi Electric, E4theFutue, Daikin, NYSERDA, SEEL, Rhode Island Office of Energy Resources, National Grid, CT DEEP, UI, Eversource, and CPower, the event drew over 200 people for three days of virtual learning, dialogue, and idea exchange.

Within the virtual format of Summit Sessions, we implemented a slide-free format that focused on captivating themes and content, diverse perspectives, 30-60 minute sessions, and meaningful conversations. Attendees reacted well to this format, expressing appreciation for the alternative delivery of content and the flexibility of participation. One comment from an attendee noted: “the NEEP team did a great job both on the air and behind the scenes. One of the smoother zoom conferences I've attended.”

The 2021 event provided a forum for the region to explore innovative approaches to achieving long-term energy and carbon reduction goals. Attendees learned ways to accelerate progress on existing efforts, think creatively, leverage each other’s work where possible, and align efforts to catalyze regional-scale market transformation.

Progress Toward Summit Series 2021: Resilient Low-Carbon Community Pathways Outcomes	25%	50%	75%	100%
<p>Seven Northeast and Mid-Atlantic communities develop innovative strategies, such as zoning requirements or strategic electrification plans, to reduce community-wide carbon emissions 60 percent by 2030.</p> <p>Progress Toward Outcome: NEEP continued working with two towns in Rhode Island to develop energy plans for their communities. In Jamestown, R.I., the project team is</p>				



Progress Toward Summit Series 2021: Resilient Low-Carbon Community Pathways Outcomes	25%	50%	75%	100%
<p>developing a Zero Energy Plan to guide the future development of homes and buildings in the town while also providing strategies for existing buildings. This zero energy plan is currently in draft form and will be completed in early 2022. The team is documenting its process throughout so that the steps taken in Jamestown can be easily replicated and scaled up across the region.</p> <p>An ongoing partnership with the Urban Sustainability Directors Network (USDN) and Urban Land Institute (ULI) continued in Q3 to host a series of workshops for communities interested in sustainable zoning initiatives. NEEP has worked with this group to share best practices for working with zoning boards and the community and sustainable zoning measures that can be implemented to address building decarbonization at the local level. In the third quarter, NEEP presented at the first workshop in the series, and will continue to provide guidance and technical assistance to workshop participants in the next quarter.</p>				
<p>At least two more states join NY, MA, DC, and VT with laws that require carbon emission reductions aligned with IPCC climate stabilization goals to reduce carbon emissions by at least 80% by 2050.</p> <p>Progress Toward Outcome: Rhode Island signed its climate bill, The 2021 Act on Climate (SB0078/HB5445), in the first quarter of 2021. This bill will increase the state’s greenhouse gas emissions (GHG) reduction targets to reduce GHG emissions 80% by 2040 with net-zero emissions by 2050.</p>				
<p>Increased public visibility for exciting community-led initiatives that advance healthy, efficient, resilient homes and buildings – particularly for low- and moderate- income communities and households.</p> <p>Progress Toward Outcome: During the third quarter of 2021, NEEP’s work was featured in seven media stories. In addition, we saw increased activity over social media and high engagement during the conference.</p>				



Public Policy Leadership and Best Practices

Mission: Inform state and local public policy adoption, implementation, and evaluation to achieve deep building decarbonization and reduce carbon emissions at least 40 percent by 2030.

Public Policy Leadership and Best Practices Long-Term Market Transformation Goals

By 2025:

- All Northeast States adopt mandates to reduce carbon emissions 40% by 2030 and 80% by 2050, and implement statewide plans to reduce building-sector carbon emissions.
- At least five Northeast States adopt a suite of policies and programs that effectively engage homes and buildings to serve as flexible load and avoid costly transmission and distribution (T&D) additions.
- All Northeast States adopt ratepayer-funded, demand-side resource programs to improve total building energy performance including electrification to displace direct fossil fuel use, and achieve at least 3% of prior year energy sales.

By 2030:

- All Northeast States adopt a suite of policies and programs that effectively engage homes and buildings to serve as flexible load and avoid costly T&D additions.

Project Narrative:

NEEP compiled the status of numerous bills into a [legislative web tracker](#) and continues to track the movement of regular and special legislative sessions that are still in session. The tracker is updated weekly, and highlights are shared with our [Allies network](#) via a newsletter and bi-monthly webinars. This quarter, Rhode Island passed its appliance standard bill, and New York and New Jersey both passed bills in support of the electric vehicle transition. Many others bills were introduced or moved along. We consolidated and published legislative updates in bi-monthly policy tracker blog posts ([June](#) and [August](#)). Beginning in the second quarter, the Policy and Evaluation, Measurement, and Verification (EM&V) team began publishing a blog series titled *Turning Policy into Performance*. The series examines how to use EM&V to accomplish decarbonization and equity policy goals. The blogs are released on a bi-monthly schedule ([July](#), and [September](#)).

In the third quarter, NEEP provided technical assistance to Massachusetts, New Jersey, Connecticut, and Maryland in the form of comment letters and presentations. In Massachusetts and New Jersey, NEEP commented on the installation and implementation of advanced metering infrastructure. NEEP's guidance drew from our Policy, EM&V, and Smart Energy Homes and Buildings program work. We hope that advanced metering infrastructure (AMI) can help drive clean energy transformation and empower energy consumers. We also commented on Connecticut's Non-Wires-Alternatives (NWA) proposal. The state has identified NWAs as a key part of their decarbonization effort, and has just started to draft what this program would look like and how to measure its



success; NEEP included guidance on both in comments. In Maryland, NEEP provided comments and a presentation to the EmPower Maryland Future Program Planning Group on suggestions for energy efficiency programs for the EmPower 2024 cycle. Our guidance was grounded in our expertise on heat pump market transformation practices, ensuring equitable service and access to energy efficiency programs, and EM&V practices to implement active demand reduction programs.

NEEP also sits on state working groups in Maryland, Connecticut, New York, and New Jersey. Our unique regional lens allows us to weave best practices and proven, implementable solutions into our recommendations. In Maryland, we attend meetings to aid the formulation of a cost-benefit test and portfolio design for the state's 2024 EmPower energy efficiency portfolio. In New Jersey, we provide guidance on workforce best practices for the state as it creates its first round of statewide energy efficiency programs. And in New Jersey, NEEP monitors proposals for demand response and heat pump programs.

We continued to integrate public policy and EM&V to provide practical and achievable policy and EM&V guidance via short reports and webinars. In August, NEEP finalized the second of three Policy Implementation Guides and companion webinars: [Deep Energy Efficiency Retrofits Implementation Guide](#) and [webinar](#). This guide examines how states can create statewide deep energy efficiency retrofit programs that are accessible, incorporate state energy and climate goals, and grow the clean energy workforce. The companion webinar featured the equity-focused Triangle J [Partners in Home Preservation](#) program in North Carolina and the contractor-based [Zero Energy Now](#) project in Vermont. The first implementation guide was finalized in June: [Establishing a Jurisdiction-Specific Cost-Benefit Test](#) and [webinar](#). It examined best practices and emerging policies for cost-benefit testing and energy efficiency portfolio design. The final Policy Implementation Guide, to be released in November, will explore how to equitably implement effective carbon tax, cap-and-trade, and cap-and-invest programs to achieve state climate goals.

NEEP finalized a new [Policy](#) website as a companion resource to the [EM&V Resource Center](#), which was revamped and updated in the first quarter of 2021. These two integrated web resources provide a framework of EM&V and public policy best practices that work to achieve decarbonization goals. Additionally, these webpages catalogue our expertise on the subject by linking to other relevant NEEP projects, programs, and resources.

On August 17, 2021 NEEP held a quarterly meeting of its Building Decarbonization Policy and Evaluation Working Group. This meeting updated members about legislative developments in the region and new NEEP tools and resources, including the updated [Policy](#) webpage. It also featured a presentation on the [Deep Energy Efficiency Retrofits Implementation Guide](#), including a discussion on barriers that often appear when implementing retrofit programs, and an introduction to NEEP's [Total Energy Pathways](#) program. The next working group meeting will be held in November.

NEEP also began its 2021 work on the [Regional Energy Efficiency Database \(REED\)](#), including starting the annual data collection process (collecting program year 2019 data) and completing the first-ever [REED video blog](#), which



provides an overview of the Master REED Workbook's content and functionality. REED data can be used to inform state and regional policies, state benchmarking, and for other research and analysis purposes. The updated Master REED workbook including program year 2019 data and [REED Supporting Information](#) report will be available by request in the fourth quarter.

Progress Toward Public Policy Leadership and Best Practices Outcomes	25%	50%	75%	100%
<p>At least two more states join NY, MA, DC, and VT with laws that require carbon emission reductions aligned with IPCC climate stabilization goals to reduce carbon emissions by at least 80% by 2050.</p> <p>Progress Toward Outcome: Rhode Island signed its climate bill, The 2021 Act on Climate (SB0078/HB5445), in the first quarter of 2021. This bill will increase the state’s GHG reduction targets to reduce emissions 80% by 2040 with net-zero emissions by 2050.</p>				
<p>Program administrators in three states join MA in developing/delivering EE programs integrated with other DER (e.g. DR, storage).</p> <p>Progress Toward Outcome: In the first quarter, the New York Department of Public Service (NY DPS) issued the second ‘State of Storage’ annual report announcing progress toward reaching New York’s statewide energy storage goal of 3,000 megawatts (MW) by 2030, with an interim objective of deploying 1,500 MW by 2025. Since this, no additional states have taken formal steps to develop/deliver energy efficiency programs integrated with distributed energy resources (DERs), but NEEP is monitoring and advising the planning processes for energy efficiency programs in Maryland, Vermont, Maine, New Jersey, and Connecticut. In the third quarter, Connecticut’s Public Utility Regulatory Authority (PURA) released a straw proposal for non-wires alternatives (NWAs) in the state, on which NEEP commented.</p>				
<p>At least one other state joins NY in examining the transition from natural gas to efficient electric heating.</p> <p>Progress Toward Outcome: In February, New York issued its Staff Moratorium Management Proposal and Staff Gas System Planning Proposal. NEEP did not participate in the first round of comments but is monitoring the planning process. We hope to provide input on cost-benefit test practices and other system planning around DERs during the planning process. Additionally, the Massachusetts Department of Public Utilities (MA DPU) has opened a formal investigation into the role of natural gas</p>				



Progress Toward Public Policy Leadership and Best Practices Outcomes	25%	50%	75%	100%
in the Commonwealth's transition toward its goal of net-zero GHG emissions by 2050 (Docket DPU 20-80). The local gas distribution companies will file proposals on or before March 1, 2022.				



Efficient and Resilient Buildings & Communities

Efficient and Resilient Communities

Mission: Assist Northeast and Mid-Atlantic communities to equitably advance home and building energy efficiency to achieve local clean energy, climate resiliency, and economic development goals.

Efficient and Resilient Communities Long-Term Market Transformation Goals

By 2025:

- 60% of Northeast communities have reduced municipal building energy consumption by 20% or more.

By 2030:

- All Northeast states adopt 2050 carbon-neutral mandates for all homes and buildings with zero energy/carbon codes for new and renovated homes and buildings to begin by 2032.
- All Northeast states engage low- and moderate-income communities to implement equitable economic development programs that improve the efficiency, resiliency, health, safety, and long-term affordability of their homes and community buildings.

Project Narrative:

Directly assisting communities with energy efficiency initiatives is a key part of moving the region forward to achieve greenhouse gas emission reductions. Throughout the third quarter, NEEP responded to the needs of many communities by providing direct technical assistance while also cataloguing this information to develop online resources. We provided assistance to communities on energy planning, zero energy schools, commercial building benchmarking, and home energy labeling.

Additionally, we hosted a webinar for the Regional High Performance Communities Working Group, which included a presentation on updates to the [Northeast Collaborative for High Performance Schools \(NE-CHPS\) Criteria](#) and the zero energy schools toolkit, the [Community Commitment Tracker](#), the [Community Action Planning for Energy Efficiency \(CAPEE\)](#) tool, a preview of NEEP's new regional schools report, and a discussion around our planned work in this area for 2022.



Progress Toward Efficient and Resilient Communities Outcomes	25%	50%	75%	100%
<p>Two additional states in the region join MA, NY, PA, and CT to support community-focused initiatives with state-level resources to advance clean energy, increase equitable access to energy efficiency programs and projects, and deliver workforce development opportunities.</p> <p>Progress Toward Outcome: While there has been limited new progress related to the development of state-led community programs, NEEP has remained actively engaged with state-level stakeholders. First, we continue to facilitate the Achieving Community Efficiency (ACE) Project Advisory Committee to bring together state and regional entities to discuss how their programs support community energy actions. This group has helped share lessons learned across state boundaries and has led to the development of a shared energy manager project in Pennsylvania.</p> <p>Additionally, we drafted the Regional Zero Energy Schools Report, with publication anticipated for the final quarter of 2021. To inform the report, we conducted a survey, interviewed key stakeholders, and developed state profiles for each of the 13 states in the NEEP region. The report identifies leaders, trends, and best practices to help states grow their school construction programs and increase the emphasis on zero energy schools.</p> <p>Through these stakeholder engagement activities and development of new resources, states can learn from one another to craft policies and programs that make a real impact in our communities.</p>				
<p>Seven Northeast and Mid-Atlantic communities develop innovative strategies, such as zoning requirements or strategic electrification plans, to reduce community-wide carbon emissions 60 percent by 2030.</p> <p>Progress Toward Outcome: NEEP continued working with two towns in Rhode Island to develop energy plans for their communities. In Jamestown, R.I., we are developing a Zero Energy Plan to guide future development of homes and buildings in the town, while also providing strategies for existing buildings. The plan is currently in draft form and will be completed in early 2022. We have documented our process throughout so that the steps taken in Jamestown can be easily replicated and scaled up across the region.</p>				



Progress Toward Efficient and Resilient Communities Outcomes	25%	50%	75%	100%
<p>Additionally our ongoing partnership with USDN and ULI continued, and in the third quarter we hosted a series of workshops for communities interested in sustainable zoning initiatives. NEEP has worked with this group to share best practices for working with zoning boards and the community on sustainable zoning measures that can be implemented to address building decarbonization at the local level. NEEP presented at the first workshop in the series and will continue to provide guidance and technical assistance to workshop participants throughout the year.</p>				
<p>States and communities lead by example by increasing the number of zero energy public buildings in operation by 10 across at least 5 states.</p> <p>Progress Toward Outcome: NEEP launched the Communities Commitments Tracker, a database for the growing number of communities making clean energy commitments across the region. The data will not only be used to track progress toward goals, but also to create a network of small- to mid-sized communities that are interested in energy efficiency at the local level. We plan to utilize this network to scale up efforts in communities moving forward.</p> <p>NEEP also provided technical assistance to the city of Watertown, Massachusetts on a zero energy schools project and developed an exemplar on the city’s new Cunniff Elementary School.</p> <p>Additionally, we completed updates to the NE-CHPS Criteria and held a webinar highlighting these changes. We also made updates to the Regional Operations and Maintenance Guide, a new version of which will be published in the fourth quarter.</p> <p>This suite of resources, along with the CAPEE tool, allow NEEP to provide significant support for communities without providing direct technical assistance. However, many communities still look for customized support and we provide this as well.</p>				

Building Energy Codes and Appliance Standards

Mission: Assist states and communities to adopt and implement building energy codes, and support appliance efficiency standards aligned with public policy goals for climate stabilization and resiliency, clean affordable energy, public health and safety, and equitable economic development.



Building Energy Codes and Appliance Standards Long-Term Market Transformation Goals

By 2025:

- All Northeast states have a zero energy/carbon code adoption roadmap with timelines.
- State appliance standards are adopted or updated to obtain all cost effective energy and carbon savings.

By 2030:

- All Northeast and Mid-Atlantic states adopt 2050 carbon-neutral mandates for all homes and buildings.
- All Northeast and Mid-Atlantic states adopt zero energy/carbon codes for new and renovated homes and buildings with an effective date of 2032.

Project Narrative:***Building Energy Codes***

In the third quarter, NEEP published various print, web-based, and interactive resources related to building energy codes. Our report on [Equitable Workforce Best Practices Guidance](#) provides recommendations to states and program administrators on working with community partners to overcome barriers and expand workforce opportunities that address equitable access to green jobs and training. We also added code enforcement and compliance information to the [State Code Tracker](#), and launched a new [tracker of regional appliance standards](#) adoption to assist states in adopting and implementing appliance standards. And we convened several webinars as well as state collaboratives in Massachusetts and New Jersey.

NEEP provided code adoption and compliance technical assistance and code recommendations to Massachusetts, West Virginia, New York, Rhode Island, Delaware, New Hampshire, and Pennsylvania. Progress toward the deliverables required under our U.S. DOE Remote Virtual Inspections (RVI)/Offsite construction grant included development of a brief on RVI. A beta version of the NEEP supplemental appliance standards database was launched, as well as supporting materials for implementing and enforcing standards. We added two new members to the team to support this work – Andrea Krim and Cornelia Wu, Building Policy Managers, both residing in New York City.

DOE RVI/Offsite Grant

Prefabricated Construction: Guidance, Technical Assistance, and Virtual Inspections. The objectives of this project – supported by the U.S. DOE Office of Energy Efficiency & Renewable Energy (EERE) – include supporting increased adoption of advanced building construction practices, explicitly investigating how prefabricated construction and virtual building inspections can lead to energy and cost savings and related environmental benefits while revitalizing the industry and optimizing affordability in regional construction markets. In the third



quarter, the team completed a brief titled *Remote Virtual Inspections: Challenges and Opportunities* in partnership with the Midwest Energy Efficiency Alliance (MEEA), which explores the current use of RVI and its barriers and opportunities. It was informed by independent research, interviews with industry professionals, and a survey effort in collaboration with the ICC that generated 186 responses.

State Focus

- **Massachusetts:** NEEP convened a working group of energy efficiency organizations, municipal stakeholders, and advocates to plan and strategize around the development process for the municipal opt-in code facilitated by the Massachusetts Department of Energy Resources (MA DOER). We also provided technical assistance to the municipality of Lexington, which is pursuing building electrification initiatives and will be assisting the Rocky Mountain Institute in planning for its Building Electrification Accelerator in the final quarter of 2021.
- **New Jersey:** NEEP is working with the Rutgers Center for Green Building to convene a code collaborative of diverse stakeholders from the building and energy efficiency sectors. We utilized input from the collaborative to develop a draft roadmap to support code adoption, building decarbonization, and a path toward reaching a zero-energy base code. New Jersey is also pursuing the adoption of the IECC 2021 and considering the zero energy appendices for commercial and residential construction. The final roadmap is expected by the first quarter of 2022.
- **Rhode Island:** NEEP provided written technical assistance to support adoption of the 2018 IECC without weakening amendments.
- **Pennsylvania:** NEEP provided technical assistance toward adoption of state appliance standards to advocacy organizations assisting state legislatures sponsoring the appliance bill.
- **Connecticut:** NEEP provided guidance and comments on adopting the IECC 2021 code and discouraged the state from adopting weakening amendments.
- **Delaware:** NEEP provided technical assistance to support the state in implementing a residential code compliance field study. We shared experiences, lessons learned, and documents from the Connecticut field study coordinated by NEEP in 2019, as well as from states that participated in U.S. DOE's field study pilot.
- **New Hampshire:** NEEP provided technical assistance on several issues, including adopting the state's version of the 2018 IECC, reconvening the New Hampshire Code Collaborative, provisions of the 2021 IECC, and the state's adoption of appliance standards.

Appliance Standards

Legislative action on appliance standards bills continued in the third quarter, with the passing of bills in both Rhode Island and Maine. NEEP will continue to provide technical assistance to Rhode Island, Maine, Washington, D.C., and Massachusetts to implement their respective bills. Additionally, we supported New Jersey, New York, Connecticut, and Maryland toward adoption of appliance standards.

A beta version of NEEP's Supplemental Appliance Database was developed to assist states in enforcing appliance standards that are not addressed by, or do not meet, California water and energy efficiency standards.



In coordination with the Appliance Standards Awareness Project (ASAP), the U.S. Climate Alliance, and Environment America, NEEP hosted an annual webinar focused on appliance standards to discuss state planning for 2022 standards adoption and federal appliance standard policies. The webinar also covered challenges to adopting appliance standards and implementation strategies for states.

Lastly, NEEP participated in numerous federal standards meetings as U.S. DOE issued requests for comments of new standards and test procedures. We signed on to a letter supporting new standards and test procedures to be implemented nationally, and will continue to track federal standards and disseminate information to the states as applicable.

Progress Toward Building Energy Codes and Appliance Standards Outcomes	25%	50%	75%	100%
<p>Three additional Northeast and Mid-Atlantic States adopt zero energy stretch codes (DE, MA, NY).</p> <p>Progress Toward Outcome: In Massachusetts, the MA DOER is drafting a municipal opt-in stretch code that will include zero energy provisions. The draft has not yet been released to the public; DOER established an advisory committee to review public comments and will convene a public hearing process this fall. New York has kicked off their stretch code update with a call for proposals and committee members. Delaware is just beginning to create a code to fulfill an executive order for a zero energy building code compliance path.</p>				
<p>Four additional Northeast and Mid-Atlantic States adopt stretch codes (CT, DE, ME, NJ).</p> <p>Progress Toward Outcome: NEEP convenes a code collaborative in New Jersey to help the state with the next steps for code adoption, including adopting a stretch code. Delaware is just beginning to create a code to fulfill an executive order for a zero energy building code compliance path.</p>				
<p>Municipalities in four states (MD, WV, NH, CT) adopt zero energy building codes.</p> <p>Progress Toward Outcome: The community of Ranson, West Virginia will adopt a stretch code. Keene, New Hampshire is considering the adoption of the 2021 IECC, which includes zero energy compliance pathways. Portland, Maine has adopted the 2021 IECC as a stretch code, one of the first in the country to adopt the 2021 code.</p>				



Progress Toward Building Energy Codes and Appliance Standards Outcomes	25%	50%	75%	100%
<p>Five Northeast and Mid-Atlantic States (NH, VT, RI, PA, NJ) establish pathways to quantify statewide code compliance baseline levels to inform code compliance initiatives.</p> <p>Progress Toward Outcome: In New Jersey, NEEP is serving on a TAG for a code compliance baseline study conducted by the Rutgers Center for Green Building. New Hampshire included support for a code compliance study in its 2021-2023 EERS plan, which has yet to go into effect due to political obstacles. Pennsylvania and Rhode Island have expressed interest in conducting a new code compliance baseline study.</p>				
<p>At least seven Northeast and Mid-Atlantic States (NY, MA, RI, CT, DC, ME, PA) adopt new state appliance standards in 2021.</p> <p>Progress Toward Outcome:</p> <ul style="list-style-type: none"> • Rhode Island – Bill passed and signed by the governor. • Pennsylvania – A bipartisan bill has been introduced to the state legislature. • New Jersey – Both the Senate and Assembly passed the standards bill out of committee review; bill to be taken up in the fall lame-duck session. • New York – Introduced a standards bill in March, which failed to pass in the legislature; will be taken in by special session or rulemaking. • Connecticut – Bill did not get voted out of committee; rulemaking is possible in 2021. • Maryland - Standards bill passed out of Senate committee; did not pass legislative action and will be reintroduced in 2022. • Washington, D.C. – Passed a standards bill in January, which became effective in March. • Massachusetts – Passed a standards bill in March, which will be effective January 1, 2022. • Maine – Bill passed and signed by the governor. 				



Low-Carbon Retrofit Solutions

Mission: Ensuring equitable access to low-carbon retrofit solutions to improve the energy efficiency of homes and buildings.

Low-Carbon Retrofit Solutions Long-Term Market Transformation Goals

By 2025:

- Building energy labels or ratings are populated in all real estate listings across the Northeast.

By 2030:

- 30 percent of existing homes and building are retrofitted to reduce carbon emissions 50 percent.

Project Narrative:

To advance energy efficiency and reduce carbon emissions in public buildings, NEEP provides technical assistance, stakeholder engagement, best practice sharing, and the development of tools and resources. The work represents NEEP's building energy rating and retrofit programs including: [Home Energy Labeling Information eXchange \(HELIX\)](#), [Energy Estimator](#), [Building Energy Analysis Manager \(BEAM\)](#), and [Total Energy Pathways \(TEP\)](#). These tools target specific barriers to energy efficiency and offer flexible solutions for city planners, policy makers, and building owners. Throughout the third quarter, NEEP made great strides across the region in supporting state and community building energy rating and retrofit policies and programs.

HELIX/Energy Estimator

NEEP hosted the quarterly Regional Residential Labeling Working Group Meeting in August 2021. At the meeting, the Connecticut Department of Energy and Environmental Protection (CT DEEP) shared an update on real estate engagement and HELIX training opportunities. The New York State Energy Research and Development Authority (NYSERDA) shared on their Home Energy Score report which includes a roadmap for homeowners to embark on electrification. NYSERDA also discussed their Remote and Virtual Audit Challenge to scale up virtual audits by engaging with homeowners and contractors. NYSERDA has awarded NEEP a contract to develop a two-part solution utilizing the [Energy Estimator](#) tool and a custom iPhone application. The project team – NEEP, ClearlyEnergy, and Signetron – will begin delivering virtual audits to the pilot group in early 2022.

In addition, NEEP continued to provide technical assistance and [HELIX](#) training sessions to states and communities in Vt., N.H., Maine, Mass., Conn., Md., N.J., and S.C. We also worked with a local green real estate champion to develop materials and resources for green data fields and the Vermont Home Energy Profile in multiple listing service (MLS) listings and demonstrate the value of solar photovoltaics (PV) in the real estate market.



BEAM

The [BEAM](#) project team kicked off phase two of the project. NEEP’s core role in this project includes assisting with policy development in interested communities, developing best practice resources for the new resource library (the Center for Building Performance Standards), and helping recruit and onboard new communities. NEEP finalized a BEAM user guide for communities and held a [webinar on performance standards](#). By participating in the BEAM project, NEEP is able to be on the cutting-edge of this emerging policy trend in the energy efficiency industry and can share key lessons learned with others moving forward.

TEP

To build off of the success of the Zero Energy Now program in Vermont, NEEP is working to adopt the [TEP model](#) beyond Vermont in states like New York and Massachusetts. NYSERDA reached out to NEEP to champion a newly developed Stacked Energy Efficiency Pilot (SEEP) working group. The purpose of the group is to build off of the TEP model and develop a framework for a pilot program highlighting comprehensive, bundled approaches to home energy retrofits. The group will meet on a monthly basis to complete the pilot framework on how to scale the TEP model in New York. Additionally, NEEP provides technical assistance to the Delaware Sustainable Energy Utility (DESEU) and the Philadelphia Energy Authority who have shown interest in the TEP model. We also serve as an advisor on the Massachusetts Clean Energy Center (MassCEC) Decarbonization Pathways review committee.

Progress Toward Low-Carbon Retrofit Solutions Outcomes	25%	50%	75	100%
<p>Thirty Vermont homes enroll in the Zero Energy Now/Total Energy Pathways program and undergo comprehensive energy retrofits to reduce energy use by >60 percent.</p> <p>Progress Toward Outcome: While efforts are underway to expand the TEP model in New York through NYSERDA’s SEEP Working Group, program and incentive requirements for the custom and prescriptive pathways in Vermont have been fully implemented.</p>				
<p>Two Northeast states and two cities adopt and implement policies to use home energy labeling and/or benchmarking as a strategy to improve energy efficiency of existing homes and buildings.</p> <p>Progress Toward Outcome: Montpelier, Vermont passed its Home Energy Information Ordinance and the state of Vermont approved a voluntary statewide labeling program earlier in the year. NEEP provides technical assistance and support to the state by developing resources and guides, holding trainings for realtors and residents, and compiling research on home energy labels and solar PV value in the real</p>				



Progress Toward Low-Carbon Retrofit Solutions Outcomes	25%	50%	75	100%
<p>estate market and the process in the New England Real Estate Network (NEREN) MLS system.</p> <p>Regarding commercial buildings, NEEP worked with the city of Charleston, West Virginia to successfully develop and adopt a benchmarking policy for city-owned buildings. The policy was formally adopted by the City Council in August and is the first of its kind at the city level in West Virginia. NEEP and local partners are now seeking to engage with city staff to ensure the successful rollout of this program. This policy is already being discussed by others around the state and should serve as a model for the future.</p>				
<p>Three additional states (e.g. NJ, MD, ME) use HELIX to support home energy labeling policies and programs at the state and local level.</p> <p>Progress Toward Outcome: NEEP continued discussions with several other states and communities on home energy labeling policies including N.H., Maine, Mass., Conn., Md., N.J., and S.C. In recent discussions with South Carolina, the state showed interest in HELIX to support a labeling program. Additionally, we were selected to be a Community Action Partner (CAP) for a Harvard Business School project that will help NEEP to identify funding and marketing pathways for HELIX. And lastly, MA DOER provided grant funding to three audit software providers to integrate scorecards in their audit software through the Mass Save program. HELIX will be used to store the generated scorecards.</p>				
<p>Two cities adopt building performance standards as a strategy to improve energy efficiency of existing homes and buildings.</p> <p>Progress Toward Outcome: The City of Boston officially passed a building energy performance standard as an amendment to their building energy rating and disclosure ordinance in September. Boston joins Washington, D.C., New York City, and Philadelphia as leaders on the topic of building performance standards in the region.</p> <p>NEEP produced an exemplar of Washington D.C.'s program to highlight key elements and important considerations for others as they seek to implement performance standards. We are also engaged with several cities in the region and beyond on building performance standards through the BEAM project. The project team successfully onboarded the first city, Washington, D.C., to use the tool and will seek to bring on others later in 2021.</p>				



Progress Toward Low-Carbon Retrofit Solutions Outcomes	25%	50%	75	100%
<p>Three states (MA, NY, RI) enact existing building retrofit initiatives to drive ongoing decarbonization of all existing homes and buildings toward growing an equitable retrofit economy.</p> <p>Progress Toward Outcome: NYSERDA selected NEEP to champion a working group tasked with creating an off-the-shelf program framework for a comprehensive, bundled energy retrofit project. The working group will use other regional models such as the ZEN/TEP model.</p> <p>The Massachusetts Joint Committee on Telecommunications, Utilities and Energy held a hearing for a number of energy related bills, including companion bills H.3366/S.2232: The Better Buildings Act, which would establish a statewide building energy performance standard. NEEP helped the Better Buildings Coalition develop talking points, and the bill received many supportive comments.</p>				

Heating Electrification Market Transformation

Mission: Accelerating market adoption of high performance heat pumps for residential and commercial space heating and cooling.

**Heating Electrification Market Transformation
Long-Term Market Transformation Goals**

By 2025:

- 10 percent of Northeast homes and buildings use high performance heat pumps for space and water heating.

By 2030:

- 40 percent of Northeast homes and buildings use high performance heat pumps for space and water heating.

Project Narrative:

NEEP’s Heating Electrification initiative serves as a key platform for regional stakeholders to collaborate on market development activities for air source heat pumps (ASHPs) and variable refrigerant flow (VRF) systems. NEEP convened both the ASHP and VRF working groups in the third quarter to discuss market development strategies and progress.



Building off a revitalized effort earlier in 2021 to ensure quality installation of ASHP and VRF systems, NEEP advanced a project to develop and implement a new Sizing Visualization Tool to be built into the current [NEEP ccASHP Product List](#) website platform. The new tool will be implemented by the end of the year.

Promotion of high performance systems, able to deliver efficiency in cold climates like the Northeast, is crucial to building consumer confidence in air source heat pump technology. NEEP’s cold climate ASHP Specification and product list are maintained to identify the highest performing systems. New programs inside and outside the region have adopted the NEEP [ccASHP Specification](#) and [Product List](#) which has increased substantially to now house over 25,000 cold-climate systems from over 90 industry-leading brands. NEEP also made significant strides to develop new specifications for VRF systems as well as packaged terminal heat pumps (PTHPs).

NEEP published the [ASHP and VRF Market Transformation Progress Report](#), an important tool for assessing evolutions to our Heating Electrification initiative heading into 2022.

Progress Toward Heating Electrification Market Transformation Outcomes	25%	50%	75%	100%
<p>Twenty percent increase in annual sales of high performance heat pump systems across the NEEP region.</p> <p>Progress Toward Outcome: Public policy developments reflect an increase in frequency of ambitious heat pump installation targets in the region. Massachusetts and Maine have near-term targets for deployment of heat pump systems in buildings. When available, NEEP intends to have a final determination of 2020 sales through data to use in tracking 2021 adoption numbers. Final determination will not be done until the end of 2021.</p>				
<p>Five new programs join the twenty others already using NEEP’s ccASHP product list.</p> <p>Progress Toward Outcome: Twenty-five programs inside and outside of the region now reference the ccASHP specification/product list – MassCEC, Mass. Alternative Energy Portfolio Standard, Efficiency Vermont, National Grid-Rhode Island, PSEG Long Island, Con Edison, Central Hudson, Orange & Rockland, NYSEG, Rochester G&E, National Grid-New York, the Minnesota ASHP Collaborative, Holy Cross Energy, Northwest Energy Efficiency Alliance, Efficiency Nova Scotia, Energy Transition Québec, Hydro Quebec, efficiencyPEI, Wabash Valley Power Alliance (Power Moves), Central Iowa Power Cooperative, ENERGY STAR, Xcel Energy Colorado, Natural Resources Canada, the Government of Yukon, and Upper Peninsula Power Company (UPPCO). UPPCO was a new addition in the third quarter.</p>				



Progress Toward Heating Electrification Market Transformation Outcomes	25%	50%	75%	100%
<p>NEEP’s heat pump consumer and installer guides are used or referenced by ten programs in the region.</p> <p>Progress Toward Outcome: Content from NEEP’s ASHP Buying Guide is being leveraged by MassCEC’s Clean Energy Lives Here campaign, the CT Green Bank’s Smart-E Loan heat pump webpage, PSEG Long Island’s heat pump marketing materials, NYSERDA, and the Rocky Mountain Institute. The breadth of heat pump information in the consumer buying guide has proved relevant to groups in different regions.</p> <p>NYSERDA uses NEEP’s installer guides for their in-field monitoring pilot, in addition to MassCEC, Mass Save, Efficiency Vermont, and Xcel Energy, who link to the guides on their websites. Furthermore, Northwest Energy Efficiency Alliance and the Minnesota Air Source Heat Pump Collaborative have leveraged content from NEEP’s installer guides to produce training modules and guides tailored to their own jurisdictions. Xcel Energy Colorado has also utilized content from NEEP’s installer guides for their program brochures.</p>				
<p>Initiative participants report significant progress in implementing the Regional ASHP Market Transformation Strategy and Regional VRF Market Transformation Strategy.</p> <p>Progress Toward Outcome: NEEP’s ASHP and VRF Market Transformation Progress Report reflects noticeable to meaningful progress across seven main market strategy areas.</p>				



Smart Energy Homes and Buildings

Mission: Enabling building-sector decarbonization by transforming homes and buildings to be efficient and flexible grid assets.

Smart Energy Homes and Buildings Long-Term Market Transformation Goals

By 2025:

- 50 percent of Northeast homes and buildings are “energy smart” with either two “energy smart” systems or smart building management systems able to respond to grid service needs.

By 2030:

- 90 percent of Northeast homes and buildings are “energy smart” (as defined above).

Project Narrative:

NEEP hosted the [Smart Energy Homes and Buildings 2021 Workshop](#), an all-day virtual event that featured expert speakers covering current policies, programs, and technologies that are successfully supporting the advancement of smart energy homes and buildings.

NEEP hosted the quarterly Home Energy Management Systems (HEMS) Working Group. These meetings provide a platform for HEMS stakeholders to share technology, policy, and program updates, and to allow the opportunity for stakeholders to provide short presentations that display their work in this space. The most recent HEMS Working Group meeting featured a BPA policy update from Congress and what it could mean for residential efficiency and HEMS. The meeting also featured two smart home spotlight presentations from the U.S. Environmental Protection Agency (U.S. EPA) on outstanding issues and challenges meeting ENERGY STAR SHERMS criteria, and from BPA on a forthcoming report on innovation in home performance. Encouraging interoperability amongst different smart home technologies and focusing more on load management will continue to be an important focus of NEEP’s work in this space.

Lastly, NEEP updated the Smart Energy Homes and Buildings [Program](#) and [Policy](#) trackers. These include legislation, regulation, climate plans, and residential and commercial programs that guide and enable grid modernization, demand response, advanced metering infrastructure (AMI), rate design, decarbonization, and electrification. The trackers can also be used to identify gaps and barriers that restrict this development. And in collaboration with our Policy and EM&V team, comments were submitted on Massachusetts’s AMI and Connecticut’s Non-Wires Alternatives regulatory filings, each of which have implications for Smart Energy Homes and Grid Connected Solutions.



Progress Toward Smart Energy Homes and Buildings Outcomes	25%	50%	75%	100%
<p>Utilities in five states in the region design or launch demonstration pilots that explore the abilities of homes and buildings to serve as flexible grid resources.</p> <p>Progress Toward Outcome: Three states in the region have launched demonstration pilots. In New York, NYPA announced in April the signing of an agreement for their new battery storage pilot. This will allow for the demonstration of a 100kW/1MWh Zinc-Air Battery Energy Storage System in Buffalo to facilitate the wider use of renewable resources. Maine announced in June a 15MW pilot program to put storage into critical care facilities. Lastly, Connecticut established a nine-year statewide Electric Storage Program for residential, commercial, and industrial customers.</p>				
<p>Six states in the region enact policies or programs that support the deployment, or engagement, of smart energy homes to provide grid services.</p> <p>Progress Toward Outcome: A number of bills were developed that support the installation of electric vehicle charging stations in residential, commercial, and public buildings: Maine and New Hampshire passed bills (LD1733 and SB131) and New York introduced one (A03179). According to a resolution from the Massachusetts Energy Efficiency Advisory Council (MA EEAC), the new draft of Massachusetts’ three-year energy efficiency plan must make greater progress to accelerate the deployment of renewable space and water heating systems such as heat pumps. The plan will be released and finalized early in the fourth quarter. Along with these developments, earlier this year Rhode Island and Massachusetts passed large climate bills that support the deployment of Smart Energy Homes and Buildings Grid Services (R.I. bill S0078 and Mass. bill S9).</p>				
<p>Six utilities/energy efficiency programs in the region identify the highest priority grid services to be enabled by smart energy homes and buildings (i.e., demand response, responsiveness to time-of-use signals, load shifting, off peak usage, frequency regulation, etc.).</p> <p>Progress Toward Outcome: All utilities and energy efficiency programs in the region have deployed grid interactive services. Based on information collected in NEEP’s Smart Energy Homes and Buildings Program Tracker, services like demand response, rate design, and smart thermostats seem to be high priority. New Hampshire bill SB131, which expands EV charging infrastructure, also provides guidelines from which the Public Utilities Commission can design special EV charging rates. Even more</p>				



Progress Toward Smart Energy Homes and Buildings Outcomes	25%	50%	75%	100%
notably, in New Hampshire, bill HB376 was introduced which would establish a committee to study the application of micro grids within the state.				

Strategic Energy Management

Mission: Accelerating adoption of Strategic Energy Management to continuously improve building and industrial facility energy efficiency, productivity, health, comfort and safety, while reducing costs and carbon emissions.

**Strategic Energy Management
Long-Term Market Transformation Goals**

By 2025:

- All Northeast states have policies and programs to support adoption of SEM in the commercial and industrial sectors.

By 2030:

- All Northeast states adopt 2050 carbon neutral mandates for all homes and buildings with zero energy/carbon codes for new and renovated homes and buildings to begin by 2032.

Project Narrative:

NEEP encourages strategic energy management (SEM) program adoption by the industrial, commercial, and municipal sectors in the Northeast. In the third quarter, we re-engaged with key partners to discuss priorities and barriers to SEM adoption. Due to staffing changes, we did not host the Q3 Northeast SEM Collaborative meeting, but will hold a longer meeting in the fourth quarter.

NEEP began development of a brief that will explore six strategies to scale up the adoption of SEM in the region. The strategies were developed earlier in the year through discussions with the Regional SEM Market Transformation Research and Strategy Advisory Committee and explore ideas other than the traditional utility delivery model. A [blog](#) was published to summarize the brief in anticipation of the final release. We also hosted a public webinar that featured SEM as a companion program to building performance standards, one of the six strategies included in the brief.

An additional resource produced was the [Gifford Medical Center case study](#). This study explored the experience of a rural Vermont hospital participating in Efficiency Vermont’s SEM program. The case study demonstrates the effectiveness of SEM in changing the hospital’s culture, reducing energy usage, and creating a healthier



environment. Additionally, NEEP keeps up-to-date with new SEM strategies, tools, and technical assistance programs that advance the market adoption of SEM, and shares related resources on our [SEM webpage](#).

Progress Toward Strategic Energy Management Outcomes	25%	50%	75%	100%
<p>All active SEM programs report increased customer participation in their SEM offerings compared to 2020.</p> <p>Progress Toward Outcome: SEM programs have been reporting increased customer participation since pivoting to online SEM offerings (which many term SEM Lite), while others have been returning to business-as-usual since the onset of COVID-19. A program evaluator from Connecticut recently completed a best practices study and an SEM evaluation, and many of the recommendations are being incorporated into the state’s programs. Vermont reported that they are developing an SEM "Direct" service for direct engagement with individual customers uninterested or unable to participate in a cohort model. The program seeks to identify ways to help prepare customers for 50001 Ready energy management systems. In New York, their SEM On Demand Program has seen increased program activity; eight applications have been received and more are expected. Connecticut recently secured a U.S DOE grant to conduct an ISO 50001 Ready Navigator Cohort. They are currently in the process of prospecting manufacturers to participate.</p>				
<p>At least two additional energy efficiency program administrators offer Strategic Energy Management in their program offerings.</p> <p>Progress Toward Outcome: After last quarter’s great news that District of Columbia Sustainable Energy Utility (DC SEU) launched two SEM cohorts, we were pleased to hear that Pennsylvania secured a U.S. DOE grant to conduct an ISO 50001 Ready Navigator Cohort. The state is currently in the process of prospecting manufacturers to participate.</p>				
<p>A state or utility adopts one of the recommendations in the Regional Market Transformation Strategy for SEM.</p> <p>Progress Toward Outcome: Key strategies for the Regional Market Transformation Strategy Report have been identified and development is in progress. NEEP aims to publish the report in the fourth quarter.</p>				