NEEP 2023 Quarterly Report
Quarter 3

Building Energy Codes and Appliance Standards

The big news in the building energy codes world this quarter was the release of the Assistance for Latest and Zero Building Energy Code Adoption (Sec. 50131) for States and Territories. Funded by the Inflation Reduction Act (IRA), this is the first phase of the distribution of one billion USD for adoption of the latest building codes, currently the 2021 International Energy Conservation Code (IECC) and American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2019, as well as for adoption of zero energy codes. To reserve the formula funding, states must submit a Letter of Intent (LOI) by November 21, 2023. The U.S. Department of Energy (US DOE) has provided a simple online template for completing the LOI. NEEP has contacted all states in the region and is providing state-specific information.

Base Code Adoption

New Jersey and Connecticut are ahead of the curve and have already adopted the 2021 IECC. Due to this adoption, these states are ineligible for the adoption phase of latest building code portion of the funding. However, looking ahead, if there is an affirmative determination by US DOE that the 2024 IECC is equivalent to or more stringent than the 2021 IECC, these states may be able to claim the latest building code funding for the next cycle of adoption. There is much to do until then, and NEEP is assisting New Jersey with reserving funding and implementing compliance and workforce training for the already adopted 2021 IECC.

New York and Rhode Island have decided to skip the 2021 IECC in favor of adopting the 2024 IECC when it becomes available. Contingent upon an affirmative determination as discussed above, these states may be able to apply their formula funding to the 2024 IECC base code adoption.

Vermont's Residential and Commercial Building Energy Standards updates incorporated 2021 IECC with strengthening amendments, with an effective date in July 2024. The date of the award will determine Vermont's IRA funding options.

Maryland adopted the 2021 IECC with weakening amendments on May 29, 2023, with an effective date starting in one year of adoption. Notably, the weakening amendments make Maryland ineligible for IRA funding based on adoption of the latest building code. New Hampshire's Building Code Review Board voted to keep the 2018 IECC in place while moving to adopt the rest of the suite of 2021 I-Codes. This decision will go to the legislature for a vote in 2024. As a result, New Hampshire is also ineligible for IRA's latest building code funding. NEEP continues

to educate states on the consequences of weakening amendments regarding both energy efficiency and federal funding.

States currently moving forward to adopt the 2021 IECC and/or ASHRAE 90.1-2019 include the District of Columbia, Delaware, Maine, Massachusetts, and Pennsylvania. NEEP is working with these states to reserve funding for both the latest building code adoption and for compliance and training.

- The District of Columbia continues to actively discuss the adoption of the 2021 IECC. Additionally, the Codes Coordinating Board (CCB) reviewed and voted on two proposed amendments. The first amendment requiring an all-electric building mandate for new commercial buildings failed to pass. The second amendment proposes changes to the existing Appendix Z, which contains an alternative compliance pathway for new electric commercial construction. The proposed amendment was approved, aligning Appendix Z closely with the ASHRAE 90.1-2019 model code language.
- Delaware's Start Action Notice (SAN) on the adoption of the 2021 IECC is expected to be released in October 2023, and the state should have draft regulations published by the end of that month. The public hearing is scheduled for mid-to-late November 2023.
- Maine is continuing to focus on adopting the 2021 IECC as the base code and bypassing the 2018 IECC.
- Massachusetts is moving to adopt the 2021 IECC as part of their 10th Edition Building Code. The code is currently under internal administrative review with three public hearings expected.
- The Pennsylvania Review and Advisory Council (RAC) closed its comment period on the 2021 IECC on August 30, 2023. RAC released a code adoption timeline for reference that can be found here. The Technical Advisory Committee (TAC) review of the 2021 I-Codes is expected to be completed by December 7, 2023, at which point the final reports will be submitted to the state's Department of Labor and Industry.

Stretch Code Development and Adoption, Energy Code Collaboratives, Technical Assistance

Convening regional and state code collaboratives is an important part of NEEP's stakeholder engagement. These include the Maine Energy Code Collaborative and the Massachusetts Net Zero Building Coalition and Technical Subcommittee. NEEP is developing the New Jersey Energy Code Collaborative and an expanded New Hampshire Code Collaborative. NEEP continues to provide direct technical assistance to states throughout our region and attends code board meetings both virtually and in person.

NEEP serves on the Maine Energy Technical Advisory Group (TAG) and facilitates the Maine Energy Code Collaborative. The Energy TAG is working through residential and commercial stretch energy codes based on the 2021 IECC with proposed strengthening amendments.

NEEP facilitates the Massachusetts Net Zero Buildings Coalition (MA NZB) and its Technical Committee. Over the last months, design professionals on the Committee donated countless hours testing energy models according to the Massachusetts Department of Energy Resources (MA DOER) guidelines. With this information in hand, NEEP facilitated feedback to MA DOER this quarter to call attention to inconsistencies in the Opt-In Specialized Code.

These inconsistencies were hindering the progress of construction documents by design professionals and were a source of confusion for communities looking to adopt the Opt-In Specialized Code. The DOER followed up with the release of updated Final Stretch and Specialized Code Guidelines in September 2023.

Delaware is working on a zero-energy-code-ready initiative per the Governor's executive order, and NEEP continues to assist the state. NEEP is actively advising New Castle County on becoming net zero ready by 2025 for residential buildings and 2030 for commercial buildings, and on other technical provisions using new building codes or ordinances. This quarter, NEEP continued to work with Councilperson Durham and the Counsel to County Council on the language for the ordinance.

NEEP continues to coordinate the New Jersey Zero Energy Buildings Roadmap initiative. To date, we have prepared the NJ Zero Energy Buildings Roadmap Initiative Report, which has been submitted to the New Jersey Board of Public Utilities and Rutgers University and is currently being reviewed by the Office of Climate Action and the Green Economy. NEEP is also coordinating and aligning Roadmap efforts with the state's Clean Buildings Working Group, and their facilitator, RMI. We will convene the New Jersey Energy Code Collaborative in Q1 2024 to begin developing a timeline to complete the actions listed in the Roadmap.

Building Performance Standards

NEEP completed its support of the Building Energy Performance Standard Regulation in Maryland. We facilitated three meetings every two weeks: two with a core leadership team, and one with a wider development group that included federal support. NEEP assisted the Maryland Department of Environment to create a draft of the regulation, facilitated private and public stakeholder engagement, and took a lead role in creating the Technical Support Manual. The manual and the regulation were submitted to the Air Quality Control Advisory Council on September 11, 2023.

Appliance Standards

NEEP's State Appliance Standard Database (SASD) is the most comprehensive appliance standards database worldwide. Massachusetts, New Jersey, New York and Rhode Island are fully utilizing SASD as of June 1, 2023, and other states (D.C., Md., Vt.) are expected to follow this year. Colorado adopted HB23-1161, which specifically references the use of SASD as an enforcement tool. NEEP is working with partners the Appliance Standards Awareness Project (ASAP) and the U.S. Environmental Protection Agency (US EPA) to develop a methodology to inform manufacturers about standards updates. Additionally, NEEP will continue to build out the SASD toolbox this year.

Resources

In the third quarter, NEEP published resources on Aligning Building Performance Standards and Energy Codes, Advancing Virtual Power Plants Through Energy Codes, Carbon Footprint in Buildings: Reducing Embodied Carbon, Electrification and Energy Codes, and Misconceptions Surrounding Building Energy Codes and Affordable Housing, and a blog post on Understanding EV-Ready Requirements in Codes for Homeowners and Builders.

NEEP continues to work on Remote Virtual Inspections (RVI) and Off-Site Construction. NEEP and the Midwest Energy Efficiency Alliance (MEEA) prepared a panel for the Midwest Building Energy Codes Conference on September 13, 2023: *The Benefits of Off-Site Construction*, with panelists Joshua Harmon, Shums Coda Associates, and Matt Belcher, Verdatek Solutions.

NEEP maintains and updates our online state code adoptions tracker as well as the building codes and standards webpages, providing interested stakeholders with more information and resources.

NEEP facilitates monthly calls with all Regional Energy Efficiency Organizations (REEOs) to share information, trends, and lessons learned across regions. An in-person meeting with US DOE, the Pacific Northwest National Laboratory (PNNL), and other REEOs is scheduled for December 13 – 14, 2023.

We participate in and contributes to monthly calls with the Responsible Energy Codes Alliance (RECA) and the National Association of State Energy Officials (NASEO), providing code updates from our region.

NEEP is committed to integrating diversity, equity, inclusion, and justice (DEIJ) in all aspects of our work, and we recognize that the work we do is more than just reducing energy consumption. Energy efficiency can serve as a foundation for a just and equitable transition to a clean energy future by reducing the energy cost burden, creating safe homes and buildings, investing in local communities, improving public health, generating sustained economic growth with good paying jobs, and creating opportunities to undo past injustices in the energy, housing, and environmental sectors. Since the 2021 IECC will provide significant savings in energy costs compared to the 2018 IECC, our efforts to advance adoption help to lessen energy burden in low-to-moderate income households. NEEP is developing resources to help state energy offices provide better access to information, public hearings, and public comment submission, and to help communities and residents participate in the code adoption process.

As we embed diversity, equity, inclusion, and justice in our core values and organizational culture, we are confident that we will generate deeper and more varied insights that we can apply to our work. We have committed to center DEIJ throughout our organization, including staff participation in an internal DEIJ working group to further embed core principles throughout our work.

Progress Toward 2023 Outcomes	% Complete at Q3
1. Five states (Delaware, District of Columbia, Maine, Massachusetts, New Jersey, New York, Rhode Island, Vermont) and two municipalities (New Castle County, DE; Montgomery County, MD) adopt beyond-base code measures. **Progress Toward Outcome:** Massachusetts updated their stretch code and developed a municipal opt-in specialized code. Maryland adopted the International Green Construction Code (IGCC) as an	60%

optional stretch code for commercial buildings. Montgomery County, Md. passed legislation requiring all electric building standards for new construction. The Maine Energy TAG is working through the residential and commercial stretch energy codes based on the 2021 IECC with proposed strengthening amendments. In New York, NYSERDA is currently working on developing the NYStretch Energy Code 2023 for both residential and commercial buildings.	
2. Five states (Connecticut, Delaware, Maine, Pennsylvania, West Virginia) improve code compliance through workforce development, specifically code official training, retention, and diversification. **Progress Toward Outcome:** NEEP submitted a regional workforce proposal in response to the Resilient and Efficient Codes Implementation (RECI) Funding Opportunity Announcement (FOA) covering seven states: Connecticut, Delaware, Maine, New Hampshire, New Jersey, Rhode Island, and West Virginia. This proposal, however, was not selected. In writing this proposal, we began the process of goal setting and collaboration with our state partners. NEEP is currently preparing for a January 1, 2024, kick-off to a project selected for funding by the Bipartisan Infrastructure Law's Resilient and Efficient Codes Implementation. This project will start with building energy code compliance studies in Pennsylvania and Delaware which will also include outreach into diverse communities to provide paid internships and job awareness. After data evaluation, NEEP will implement a workforce training program in both states through use of in-person and online trainings, and through a hotline connected to a "circuit rider" – a codes expert spanning multiple jurisdictions. Connecticut is assessing programs for continuing education "Career Development" classes for established code officials and is looking for instructors or programs relevant to the code community. NEEP provided a list of organizations that could assist the state with specifically tailored training for code officials. Connecticut has a new trainer on staff (currently in the recruitment process) that will focus on energy efficiency topics. In Maine, NEEP developed a recruitment flyer for the passivhausMAINE training program, to disseminate available training to code officials. NEEP is assisting Delaware and connecting the state with our allies to facilitate their receipt of workforce development funding through IRA.	40%

3. Four states (Connecticut, Maryland, New Hampshire, Pennsylvania, Vermont) adopt code and appliance standards attribution initiatives. **Progress Toward Outcome:** Maryland continues to move toward their new appliance standards, which become effective January 1, 2024. The draft standards can be found here. Pennsylvania has two bills to adopt new energy standards moving through the legislature, SB422 and HB1467. Both have yet to be heard by the committee as of October 16, 2023 and this will likely be delayed until after the new year.	40%
4. Three states (Connecticut, Delaware, New Hampshire, Pennsylvania, Vermont) adopt appliance standards, four (District of Columbia, Massachusetts, New Jersey, New York, Rhode Island) implement adopted standards, and two (Connecticut, Maryland, Massachusetts, New Jersey, New York) adopt air regulations NOx for appliance standards. **Progress Toward Outcome:** Connecticut may propose a bill in the 2024 legislative session to adopt new standards pre-2020. Massachusetts, New Jersey, New York, Rhode Island, and Washington, D.C. all have implemented their adopted standards. States such as New York and New Jersey have expressed interest in adopting air regulation nitrogen oxides (NOx) standards for water heaters but, since the federal government is currently in the process of adopting an efficiency standard for water heaters, these states will wait.	40%
5. Three states (Maryland, Massachusetts, New Jersey, Rhode Island) implement Remote Virtual Inspection. **Progress Toward Outcome:** NEEP has been disseminating its RVI resources through the project Technical Advisory Group. On May 18, 2023 NEEP hosted a webinar as part of NEEP's Ready, Set, Scale series on "Expanding Building Inspections: RVI and Off-Site Construction." A resource on Jurisdictions Using RVI is expected to be published in October. In the NEEP region, the following jurisdictions using RVI are: Maryland • Prince George's County allows virtual inspections for limited projects, including residential construction projects involving electrical service upgrades, electrical reconnects, mechanical service upgrades, and follow-up inspections.	100%

New Hampshire

- Nashua allows for RVI in inspections involving replacement of mechanical equipment, gas service reconnection, plumbing repairs, sewer repair/replacement, electrical repairs and service upgrades, non-structural interior alterations/renovations, and rough electrical, plumbing, and mechanical alterations/renovations up to 1,000 square feet. There is also the possibility of considering permits/projects outside of these listed. Although the city still allows and promotes RVIs, since COVID-related restrictions were lifted, it has noticed less interest in the RVI program.

Connecticut

- West Hartford allows the use of RVI as an alternate inspection method to an in-person on-site inspection. Eligible inspections are determined by the Chief Building Official or their designee based on the type of inspection and outside factors such as the complexity of the project, construction methods, safety, weather, and/or other contributing factors. RVIs are meant to be live via audio and video, conducted at an allotted time with both inspector and permit holder, contractor, or building owner on site.
- Norwich can receive requests for either on-site or remote inspection. However, the city only uses RVIs for re-inspections to show compliance after adjustments, changes made, or for minor projects.
- Manchester allows for RVIs for some interior inspections. The program has proven effective especially in addressing staffing shortages and in facilitating inspections in challenging weather conditions.

Delaware

- New Castle County allows RVIs for inspections involving slab on grade, minor framing/installations, re-installations, heating, ventilation, and air conditioning (HVAC) and plumbing replacements, and roofing system replacements.

Grid-Interactive Homes and Buildings

Grid interactive homes and buildings are a key component to the region's decarbonization efforts, enabling broad building electrification as well as helping to manage intermittent renewable power supply. In the near term, these homes and buildings are serving to reduce the need for expensive grid/pipeline infrastructure investments and prevent expensive spikes on the grid. In the long term, these resources will be tapped like power plants, dispersing excess energy and providing it back as needed.

Team Updates

In the third quarter, two members joined the Policy and Programs and Grid-Interactive Homes and Buildings (GIHBs) Team, Yiran He and Luke Miller. Yiran and Luke started within a few weeks of one another and have been quickly learning and taking the lead on many different projects at NEEP. Yiran works on community and stakeholder engagement, workforce best practices, and ways to center equity in the energy efficiency and building decarbonization space. Luke has been focusing his efforts on braiding utility programs and IRA funds, data access, and other utility-focused energy efficiency and decarbonization policies.

Tracking and Technical Assistance

In July 2023, IRA Rebates Guidance was released. US DOE recommended, in part, that states consider ways to embrace grid flexibility and virtual power plants with the rebates. NEEP stands ready to help states with this effort and has a resource on Virtual Power Plants and IRA Rebates. We also convene state energy offices to help them identify ways to best leverage IRA funds to meet building decarbonization and grid flexibility goals.

NEEP also published a cross team resource on leveraging codes to implement virtual power plants.

Working Groups

NEEP convenes two working groups to help implement GIHBs programs throughout the region. In addition to the state energy office meeting mentioned, NEEP is also convening a group on IRA Attribution with utility energy efficiency programs. This working group will help states implement IRA rebates alongside utility programs to leverage resources and expand the reach of current programs.

Progress Toward 2023 Outcomes	% Complete at Q3
1. Two state regulatory agencies (New Jersey, New York, Vermont) modify cost-benefit analysis for energy efficiency and/or grid planning to measure the value of	25%

real-time energy generation and use, such as adopting a Total Systems Benefit metric or similar measurement. **Progress Toward Outcome:** In the second quarter of 2023, New Jersey announced modifications to its benefit-cost analysis for its second round of programs. While the state did not adopt the Total Systems Benefit metric, it will study and review the possibility of adding this metric to the next round of programs. NEEP is tracking Massachusetts, Maine, and Maryland proceedings as well.	
2. Two utilities or program administrators (New Jersey, Vermont) design incentive programs for grid-interactive appliances and equipment with specific consideration for overcoming equity barriers. **Progress Toward Outcome:** New Jersey has released the framework for program implementation for its next round of energy efficiency programs, which includes a demand response program. NEEP submitted comments on the program that highlighted ways to center equity in the design and implementation. NEEP will continue to monitor the process to set up the demand response programs and will provide technical assistance when possible. NEEP is also monitoring proceedings in New Hampshire and Rhode Island: • New Hampshire utilities have filed their 2024 – 2026 Triennial NHSaves Energy Efficiency Plan. The plans include converting pilot demand response programs into full programs. NEEP will continue to monitor the process to set up the demand response programs and will provide technical assistance when possible. • Rhode Island has initiated a new process to bid out its energy efficiency programs and will be writing the request for proposals (RFP) for the programs over the summer. This could present an opportunity to require new programs, like demand response and beneficial electrification, from the provider. NEEP will continue to monitor the process to set up the demand response programs and will provide technical assistance when possible.	25%

3. Two state regulatory agencies (Massachusetts, New Jersey) create statewide frameworks to accelerate adoption of GIHBs technologies. **Progress Toward Outcome:** The Maryland Public Service Commission is convening a workgroup to aid the development of a Maryland-Specific Unified Benefit Cost Analysis (UBCA). The Order Establishing the Workgroup and instructions on how to join can be found here. The workgroup will create a unified benefit cost analysis for all distributed energy resources in the state, including energy efficiency programs and electric vehicles. NEEP will continue to monitor the process and provide technical assistance.	25%
4. One state (Massachusetts, New York, Rhode Island) adopts a first-of-its-kind regulatory framework to prioritize energy efficiency and other demand side resources over the expansion of pipes and wires infrastructure. **Progress Toward Outcome:** No state has adopted a framework, but several states have different policy initiatives to ensure their regulatory agencies adopt a similar program: • In Delaware, SB7, An Act To Amend Title 29 Of The Delaware Code Relating To The State Energy Office, recently passed. It seeks to amend the Delaware Energy Act by expanding upon the existing duties of the State Energy Office to ensure that planning for Delaware's energy future is prioritized and energy-related policy and programs are implemented in accordance with documents developed by the Governor's Energy Advisor Council and adopted by the State Energy Office. • In Maine, LD1724, the Beneficial Electrification Policy Act, passed both chambers on June 21, 2023. It requires the Public Utilities Commission (PUC), Efficiency Maine Trust, and other state agencies to implement policies and programs that support beneficial electrification. The PUC will study options for consumer financing of beneficial electrification products and submit those results to the legislature by December 6, 2023. • In Rhode Island, H5849, Public Utilities Commission, is a bill that was signed by the Governor on June 19, 2023. It requires electricity and gas revenues to be decoupled and allows for the adoption of performance incentives. The decoupling hopes to accomplish investments in energy efficiency, reliability, and reduce risk.	0%

Heating Electrification Market Transformation

In the third quarter, NEEP continued to foster knowledge sharing, research, and collaboration on heating electrification throughout the Northeast and Mid-Atlantic states.

As part of the nationwide PNNL air source heat pump (ASHP) Field Validation project, NEEP has taken leadership of three subcommittees that are particularly relevant to addressing barriers in our region: Utility Rates, Cost Transparency, and Cold Climate Air Source Heat Pump (ccASHP) Sizing and Selection Practices. Membership on other subcommittees and leadership of these are in alignment with NEEP's goal to equitably and affordably reduce building-sector greenhouse gas emissions.

NEEP's Cold Climate Air Source Heat Pump (ccASHP) product list and sizing tool continue to be leveraged by customers, installers and distributors, program administrators, manufacturers, service providers, and other stakeholders. Six "cold climate states" in the NEEP region use the list in programs and trainings, as well as out-of-region states and Canada. The list continues to grow, showing momentum toward an efficient electrified future, with over 134,631 users in the past year and over 117,000 qualified units.

We have implemented improvements to the ccASHP sizing tool in response to stakeholder feedback in order to help users better design, size, and install efficient heat pumps suitable for cold climates. PNNL is working with NEEP to integrate the ccASHP sizing tool into one of their digital tools to promote better sizing practices nationally.

NEEP also made progress on several collaborative research projects aimed at more accurately characterizing performance of heat pump technologies to increase confidence in cold climate heat pumps and associated test procedures. The Heat Pump Rating Representativeness Research Project conducted lab testing and analysis throughout the third quarter, with a report expected in the first quarter of 2024.

NEEP has co-developed a white paper to advance heat pump water heaters in low-income Weatherization Assistance Programs. NEEP presented this paper at the ENERGY STAR Partner Meeting in September 2023, and it is expected to be published before the end of the year.

We hosted virtual meetings for both our residential and commercial working group members, as well as an Installer Best Practices Committee meeting to gather market input on our sizing tool updates.

NEEP has also been laying the groundwork for our annual Heating Electrification Workshop (HEW), which brings stakeholders together to explore strategies for advancing heating electrification. The HEW will bring a great group

of facilitators, presenters, and participants together to tackle the latest and greatest barriers, focusing on three main topics: contractor insights, designing and implementing heat pump programs for underserved customers, and emerging heat pump categories that provide new solutions to various sectors.

Progress Toward 2023 Outcomes	% Complete at Q3
1. Five states (Delaware, District of Columbia, Maryland, Pennsylvania, New Hampshire, New Jersey) adopt workforce development programs to train existing installers and/or recruit and train new installers on installing heat pump technologies, with a focus on including candidates from historically marginalized communities. **Progress Toward Outcome:** Energize Delaware recently hosted green workforce development training on heat pump water heaters, and more trainings are planned. There is not a clear focus on inclusion of historically marginalized community members. Maine's Clean Energy Partnership - Workforce Initiative programs will support innovation of advanced technologies and services that contribute to the achievement of the state's clean energy and climate goals. Governor Mills has committed to more than doubling Maine's clean energy jobs to 30,000 by 2030 and has invested $8M in the Clean Energy Partnership. The New Jersey Triennium 2 straw proposal has put forth a new state-funded workforce development initiative in partnership with the state's Department of Labor and Workforce Development to recruit and train participants from overburdened communities. New Jersey's Clean Buildings Working Group is guiding the state's roadmap to clean buildings, which will include recommendations for workforce development strategies. The state has several current pilot projects including the New Jersey Board of Public Utilities (NJ BPU) Whole House Pilot, in collaboration with the state's Department of Labor and Workforce Development's Greener Buildings Pilot, designed to increase efficiency and advance electrification in 100 low-to-moderate income (LMI) homes in Trenton, N.J. as well as support workforce development. New York introduced S02469, which directs the public service commission to develop and issue guidelines for hiring and training employees from priority populations for energy efficiency programs. The bill was engrossed on June 1, 2023 and is at 50% progression.	60%

2. Across the NEEP region, five states (District of Columbia, Massachusetts, New Jersey, New York, Rhode Island, Vermont) and/or energy efficiency program administrators introduce new program incentives/promotions to support emerging heat pump categories. **Progress Toward Outcome:** Regional program incentives include: • Vermont (Residential and Commercial ATW, Vertical Packaged Heat Pumps) • New York (Residential ATW, Ground-source VRF, Commercial ATW) • Massachusetts (Ground-source VRF, PTHP, RTU) • Maine (Commercial RTU) • Rhode Island (VRF) • Several programs (in Mass., Penn., Maine, and Del.) allow "custom" programs which include unspecified heat pump technologies that save energy	100%
3. Programs across nine "cold climate" states (Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont) use NEEP's ccASHP product list (as a qualified products list (QPL) and/or product selection tool). **Progress Toward Outcome:** NEEP's ccASHP resources are currently used in the following states: • Connecticut uses NEEP's product selection tool in contractor training • Maine includes NEEP's Guide to Sizing & Selecting Air-Source Heat Pumps in Cold Climates in heat pump training resources • As part of Mass Save's Heat Pump Installer Training (HPIN), Massachusetts utilizes NEEP's sizing tool. Several Municipal Light Plants and Mass DOER use NEEP's ccASHP product list. • New York's Clean Heating and Cooling program along with participating utilities use NEEP's ccASHP product list for the program's QPL and our sizing tool is used in contractor training • Rhode Island Energy uses NEEP's product list for their QPL • Several Vermont entities use the ccASHP product list for their program's QPL, including Efficiency Vermont and Burlington Electric Department	66%

4. Three state programs (District of Columbia, Maryland, Massachusetts, New York, Pennsylvania) implement heat pump and heat pump water heater program enhancements for low-to-moderate income customers. **Progress Toward Outcome:** The following states have implemented programs: • MassCEC offers income-based rebate adders for clean heating and cooling technologies. Mass Save offers increased incentives for low-income households for ASHPs and ground source heat pumps (GSHPs). • EmPower NY provides income-eligible residents with no-cost energy efficiency solutions, including the installation of clean heating and cooling heat pumps. Con Edison provides GSHP rebates up to 70% of the project to customers in disadvantaged communities. PSEG Long Island offers higher incentives for heat pump installation for income-eligible customers. • PPL of Pennsylvania offers no-cost heat pump installation for income-eligible customers • Energize Delaware offers higher incentives for heat pumps to income-eligible customers through Assisted Home Performance with ENERGY STAR • Efficiency Maine offers increased heat pump incentives to LMI residents • All New Jersey residential programs offer a $200/unit rebate adder for income-eligible customers • Clean Heat Rhode Island offers to cover 100% of the cost for air source heat pump and weatherization for income-eligible customers switching from oil, propane, or natural gas • Efficiency Vermont offers bonus rebates between $200-800 for income-eligible customers • West Virginia's Appalachian Power gives low-income customers $200 extra in rebates for air source heat pump installation	100%
5. Three states (Connecticut, Massachusetts, New Jersey, Vermont) reconsider key state policies that slow adoption of heating electrification. **Progress Toward Outcome:** Progress on state policies related to heating electrification includes:	100%

• The Massachusetts Commission on Clean Heat recently endorsed a Clean Heat Standard (CHS) to reduce building-sector emissions. The CHS includes a goal of +/- 100,000 residential heat pump installations per year from 2025-2050 and supportive policies to accelerate adoption of heating electrification. The CHS program is being designed with stakeholder engagement. • New Jersey's Gov. Phil Murphy has signed executive orders to accelerate the state's building electrification goals. The New Jersey Energy Master Plan calls for building electrification by 2050 and the state is aiming to accelerate heat pump adoption through legislative change. • The New Jersey Board of Public Utilities approved measures to encourage building owners to switch from natural gas to heat and is establishing a new Building Decarbonization Program. • Connecticut is aiming to speed heat pump adoption through the 2022-2024 Conservation and Load Management (C&LM) Plan. The plan addresses barriers to heat pump adoption, including policy barriers. • Vermont's Affordable Heat Act Bill S.5 proposes a clean heat standard to accelerate heating electrification. The Governor vetoed the bill, but both the House of Representatives and Senate voted to override the veto, enacting the bill into law, which triggered a two-year process to design the program. • New York introduced the NY Home Energy Affordable Transition Act which directs the Public Service Commission to end the mandate for ratepayer-subsidized incentives for fossil fuel infrastructure in new buildings in an equitable manner. The current bill is in Assembly Committee and passed the Senate.	

Public Policy and Programs

NEEP continued to meet with state energy offices and stakeholders across the region on implementation of the Inflation Reduction Act Rebates and Contractor Training Grants Programs (CTG). Additionally, NEEP welcomed two new members to the team and continued to convene two working groups related to this work. We also finished work on the 2021 Regional Energy Efficiency Database (REED) and continued to research and draft two reports on building decarbonization policies and implementation with Northeast States for Coordinated Air Use Management (NESCAUM).

Technical Assistance

NEEP convenes state energy offices to discuss issues around implementation of IRA Rebates and CTGs in the NEEP region. In the third quarter, IRA Guidance on Contractor Training Grants and Rebates was released. NEEP contacted state energy offices and convened meetings to provide an overview of the guidance and identify any areas for next steps or continued coordination in the region. From feedback at these meetings, NEEP has established a regular state energy office only working group that will focus on near- and long-term goals for implementation of IRA Rebates, CTG, and Climate Pollution Reduction Grants (CCPRG). We plan to host three more meetings for this working group in 2023.

NEEP also continued to convene the IRA Attribution Working Group, meeting twice in the third quarter. The first meeting focused on issues in attribution and the second meeting introduced an attribution framework for regulators to reference when braiding IRA and utility programs throughout the nation.

Deliverables

With the release of the IRA Rebates and CTG Applications, NEEP published blogs on the Rebates and CTG applications, to introduce states and other stakeholders to the requirements and recommended next steps for the region. We also updated resources on grant tracking and continued to work on resources that state energy offices indicated would be most helpful. NEEP also provided a resource on the updates to the Weatherization Enhancement and Innovation Funding.

NEEP continued its work on the Building Decarbonization Playbook and Policy Layering Brief. The Building Decarbonization Playbook will provide near-term recommendations and no-regret actions that states can take to leverage federal funding to lay a foundation and scale up building decarbonization programs. The Policy Layering Brief will look at long-term policies such as building performance standards, emissions-based appliance standards, and clean heat standards and examine how these policies interact with one another and drive market

transformation. The Layering Brief will be ready for review at the beginning of the fourth quarter of 2023 and published before the end of the year, and the Playbook is available for review for interested stakeholders and will also be published before the end of the year. Both of the projects will be available for NEEP allies and state energy offices to review.

Additionally, NEEP continues to work with the Association of Energy Services Professionals (AESP) on a BENEFIT Grant project to develop a series of accredited online courses focusing on new grid-interactive energy technologies, also commonly referred to as demand flexible loads. NEEP's tasks for this past quarter included reviewing and providing recommendations for course outlines. NEEP also responded to requests for the REED Data Master Workbook and kicked off the next round of data collection.

Tracking Energy Efficiency and Building Decarbonization

NEEP tracks regulatory proceedings and legislation, as well as participating in state-run working groups to advance decarbonization policies throughout the region. In the third quarter, NEEP tracked and attended state-run regulatory working groups on the Massachusetts Energy Efficiency Plans and New York Cap-and-Invest Program. We also track Maryland Energy Efficiency Plans, New Jersey Energy Efficiency Plans, and implementation of Clean Heat Standards in Massachusetts and Vermont.

We track bills across the region with our legislative web tracker, which includes legislation from the past three years. The tracker is updated weekly and highlights are shared with NEEP's Allies network via the Allies newsletter. NEEP follows new bills closely to identify key target areas and trends, with an emphasis on climate goals and roadmaps, workforce development, equity, and building codes and standards. There were no legislative updates for our region in the third quarter.

Progress Toward 2023 Outcomes	% Complete at Q3
1. Four states (Maryland, New Hampshire, New York, Pennsylvania) advance legislation or regulatory initiatives that increase equitable access to benefits of energy efficiency programs statewide. **Progress Toward Outcome:** Maine passed An Act to Provide Energy Efficiency Program Outreach and Assistance to Manufactured Housing Residents. It requires the Maine State Housing Authority to participate in education and outreach services to those living in manufactured housing. This outreach must include current energy efficiency programs run by the Efficiency Maine Trust and the Maine State Housing Authority and include an application for the residents to apply. Maine also passed LD611, Establishing a Working Group to Maximize Eligibility for Energy Efficiency Programs for Low-income Homeowners. This bill was sent to the	50%

Progress Toward 2023 Outcomes	% Complete at Q3
Governor's office on June 15, 2023. It requires the Maine State Housing Authority to convene a working group to design a program that will provide financial assistance to low-income homeowners for weatherization and home energy assistance programs. Connecticut released the framework for Phase 1 of their Performance Based Rates Proceeding. During this phase, the state identified four regulatory goals for the performance-based rates: excellent operational performance, public policy achievement, customer empowerment and satisfaction, and reasonable, equitable, and affordable rates. To read more about how performance based rates can increase equitable access to programs, see NEEP's blog. A bill to create a low-income savings goal in Maryland passed both houses but was vetoed by the governor.	
2. Three states (New Jersey, New York, Vermont) take steps to align energy efficiency programs with state climate policies by incorporating climate-focused metrics. **Progress Toward Outcome:** New Jersey released its first order of the framework of the programs and adopted modifications to its benefit-cost analysis based on the recommendations from NEEP. These modifications included an increase in the non-energy impacts (NEIs) for residential and commercial HVAC programs that use efficient electric appliances to 15% and an increase in the low-income benefits adder to 15%. The state will also be studying the adoption of the Total Systems Benefit metric to measure program impacts for the next cycle. NEEP is monitoring and providing technical assistance to Maine, Maryland, and Massachusetts's energy efficiency proceedings to see if other actions are taken in the fourth quarter.	25%
3. Three state regulatory agencies (Massachusetts, New York, Vermont) advance beneficial electrification policies that regulate gas, oil, and/or propane use. **Progress Toward Outcome:** No state agency has ordered any action yet, but there are a number of proceedings we are watching: • New York has announced an economy-wide Cap-and-Invest Program for New York. The cap-and-invest program will set a declining cap on greenhouse gas	0%

Progress Toward 2023 Outcomes	% Complete at Q3
(GHG) emissions and invest in an equitable emissions reductions program. Large-scale greenhouse gas emitters and distributors of heating and transportation fuels will be required to purchase allowances for emissions associated with their activities. The proceeds will support state investments in climate mitigation, energy efficiency, clean transportation, and an annual Climate Action Rebate that will be distributed to all New Yorkers to mitigate potential consumer costs associated with the program. • Massachusetts Department of Environmental Protection (MassDEP) has initiated a stakeholder process to develop the state's clean heat standard (CHS). • Vermont passed legislation to enact a Clean Heat Standard and the Public Utilities Commission has initiated a docket to establish the standard. • New Jersey's governor signed an executive order for the Board of Public Utilities to initiate a process to create a comprehensive plan for a future less reliable on fossil fuels and setting a statewide target for installation of zero-carbon emission heating and cooling technology.	
4. Four states (Maine, Maryland, New Jersey, Pennsylvania), through legislation or regulation, invest in and implement statewide energy efficiency workforce initiatives that prioritize historically marginalized and/or undeserved communities. **Progress Toward Outcome:** The New Jersey Triennium 2 straw proposal has put forth a new state-funded workforce development initiative in partnership with the state's Department of Labor and Workforce Development to recruit and train participants from overburdened communities.	25%

Retrofit Models

NEEP's Retrofit Models project accelerates the uptake of comprehensive retrofits in both the residential and commercial sectors. We foster collaboration to explore and identify barriers, best practices, and expand upon scalable ideas. This past quarter saw the release of funding for the IRA Contractor Training Grants and the IRA HOMES and HEAR Rebates Programs. In addition to planned programs, NEEP is assessing how it can help states implement long-term retrofit models funded through IRA programs.

The Total Energy Pathways (TEP) Workforce Development project aims to grow and diversify the residential retrofit workforce. The absence of an adequate workforce was identified as a barrier to scaling whole-home energy retrofit programs such as the Zero Energy Now Pilot in Vermont, a project that has completed nearly 30 whole-home retrofits over the past couple years. NEEP has been working with the Building Performance Association (BPA), the Building Performance Institute (BPI), and Energy Futures Group (EFG) to create a new BPI Certificate of Knowledge and accompanying training materials. In the third quarter, the eight training modules were completed and compiled in ArcGIS Storymaps for public use. The pilot exam questions were reviewed, and a demographic intake survey was created to track who takes the exam. On October 2, 2023 the pilot exam was opened to the public. Marketing and outreach will commence early in the fourth quarter. NEEP published a blog about growing the clean energy workforce here.

NEEP's state energy office IRA Implementation Working Group will help states implement scalable and sustainable retrofits models with IRA Rebates and offer follow up technical assistance. NEEP began planning for a meeting focused on whole-home retrofit programs planned for October 2023. The meeting will highlight the Massachusetts Decarbonization Pathways Pilot, the Vermont Zero Energy Now Pilot, the Pennsylvania Whole Home Repair Program, and the Philadelphia Built to Last Program as models that others can learn from.

The US DOE, along with REEOs NEEP and the Northwest Energy Efficiency Alliance (NEEA), and national labs, launched the Partnership for Advanced Window Solutions (PAWS). PAWS partners with vendors of high-performance windows, utilities, trade allies, window manufacturers, glass makers, and home builders to create demand for advanced window solutions. PAWS will support utility programs and assist in developing consumer incentive programs for advanced window solutions. NEEP serves on the PAWS leadership team and participates in the Utility and Codes/Standards/Ratings working groups. In the third quarter, NEEP began leading an Equity working group for driving High Performance Window adoption through LMI programs. NEEP will work with the PAWS leadership team to create and execute this working group. NEEP continues to participate in the Commercial Windows Secondary Glazing working group and promote storm windows and insulating panels as cost effective efficiency measures. NEEP is also working with PAWS and state energy offices to add high performance windows

to Technical Reference Manuals (TRMs) in the Northeast states. States that have adopted triple panes window requirements in TRMs include Vermont, Massachusetts, and New York.

Progress Toward 2023 Outcomes	% Complete at Q3
1. Five states (Maine, Maryland, New Jersey, Rhode Island, Vermont) take regulatory or legislative steps to implement statewide programs that expand access to whole-building deep energy efficiency retrofits in underserved communities. **Progress Toward Outcome:** In July 2023, MassCEC opened the second cohort for the Decarbonization Pathways Pilot. NEEP remains engaged in the project advisory committee. Bill LD611, Resolve, establishing a Working Group to Maximize Eligibility for Energy Efficiency Programs for Low-income Homeowners, was sent to the Governor's office on June 15, 2023. It requires the Maine State Housing Authority to convene a working group to design a program that will provide financial assistance to low-income homeowners for weatherization and home energy assistance programs. Bill LD815, An Act to Provide Energy Efficiency Program Outreach and Assistance to Manufactured Housing Residents, passed both chambers on June 7, 2023. It requires the Maine State Housing Authority to participate in education and outreach services to those living in manufactured housing. This outreach must include current energy efficiency programs run by the Efficiency Maine Trust and the Maine State Housing Authority and provide a mechanism for the residents to apply to participate in their programs. The Pennsylvania Whole Home Repairs Program took additional steps toward implementation in early 2023 by seeking county-level organizations to be program administrators. The list of community action agencies can be found on the participating agency list. Homeowners and landlords are now able to apply for funding by sending an email to their local agency.	60%
2. Two states (Connecticut, New York) standardize definitions for weatherization. **Progress Toward Outcome:** There is nothing new to report on this outcome at this time.	33%

Progress Toward 2023 Outcomes	% Complete at Q3
3. Three state or municipal whole-building retrofit programs (Connecticut, New Jersey, New York) include training opportunities focused on expanding access to workforce opportunities for historically marginalized communities. **Progress Toward Outcome:** States throughout the region are eligible to receive formula funding through US DOE's State-Based Home Energy Efficiency Contractor Training Grants. NEEP is engaging with state energy offices and preparing to provide technical assistance to help implement equitable training opportunities.	50%
4. Three energy efficiency program implementers (New Jersey, New York, Rhode Island) modify programs to expand delivery of deep energy efficiency retrofits over direct install measures. **Progress Toward Outcome:** New Jersey initiated the stakeholder process to plan for the state's next round of energy efficiency funding. The proposed framework includes a statewide building decarbonization program focused on converting customers from oil and propane to electric services. In the first Order Approving the framework for the NJ Triennium 2 Energy Efficiency Programs for the state, it requires that utilities design incentives for whole home energy efficiency and electrification solutions, including solutions that generate deep, long-lasting, and cost-effective energy strategies. Utilities will also be submitting plans for Building Decarbonization (fuel switching measures) as part of this Triennium. Plans are expected to be filed by December 2023.	33%
5. Three energy efficiency programs (Massachusetts, New York, Vermont) increase the number of measures included in their whole-building retrofit programs. **Progress Toward Outcome:** There is nothing new to report on this outcome at this time.	0%

Solutions for Low-Carbon States and Communities

NEEP's Solutions for Low-Carbon States & Communities project facilitates the development and implementation of various building decarbonization initiatives with state and local governments. Work is conducted through stakeholder engagement, facilitation of topical working groups and cohorts, research, resource development, and by aiding in the creation of flexible software tools that enable jurisdictions to meet their climate goals. NEEP's work continues to focus on supporting communities in considering and applying for federal funding opportunities.

Federal Funding

NEEP continued to deepen its understanding of federal funding opportunities from the Bipartisan Infrastructure Law (BIL) and Inflation Reduction Act (IRA) that pertain to local governments. In the third quarter, we pivoted our approach with the Community Federal Funding Working Group to provide more focused technical assistance on the Energy Future Grants opportunity. We met with many different stakeholders to discuss the program, including state agencies, municipal energy managers, non-profits, and regional planning commissions. NEEP hosted virtual meetings of the R.I. Community Energy Network and the Community Federal Funding Working Group in August 2023, discussing the Energy Future Grants FOA, sharing potential application concepts, and hosting breakout groups for people to discuss teaming up. We helped identify at least three joint proposals from around the region.

Electrification Cohort

Increasingly, states and communities are interested in local electrification initiatives as strategies to reduce energy consumption and greenhouse gas emissions from their buildings. Experiences from partner organizations such as MassCEC, the New York State Energy Research and Development Authority (NYSERDA), Abode Energy and others have shown that neighbor-to-neighbor coaching models are effective. In the third quarter, NEEP developed a short resource on how to design a community electrification program or campaign and shared it broadly with municipal government stakeholders.

Benchmarking and Building Performance Standards

NEEP continues to provide support to states and communities on the development of benchmarking and building performance standards (BPS). While BPS can play a key role in helping meet climate goals, they are still a relatively new concept with unproven real-world results. In the third quarter, NEEP and ClearlyEnergy developed a report analyzing the carbon impact of BPS on jurisdictional climate targets. The report is based on data from eight existing BPS policies from across the country including five from the NEEP region. The report will be published in the fourth quarter and shared through a public-facing webinar. NEEP's work on federal funding, and specifically on the

Energy Future Grants, resulted in a presentation to the NYSERDA Clean Energy Coordinators and follow-up conversations with multiple N.Y.-based partners interested in pursuing grant opportunities. The Hudson Valley Regional Council (HVRC) is developing a proposal to establish a regional benchmarking/BPS initiative for at least three municipalities in their region. Other engagement included a discussion with the city of Providence, R.I. to evaluate a benchmarking ordinance before being introduced. Lastly related to benchmarking and BPS, NEEP worked with the Maryland Department of the Environment to finalize the draft BPS regulations and completed the technical support manual to the Air Quality Control Advisory Committee.

Workforce Development

ReMaine

NEEP continued work on the ReMaine Clean Energy Internship Program, placing a total of 26 candidates by the end of year one. Internships ranged from weatherization technicians to roles in engineering, marketing, community solar sales, and more. Year one of the project ended on September 30, 2023, and the team secured a second year of funding to place 16 more interns by September 30, 2024. By the end of year one, six interns that completed the program were offered full time jobs with their employers. NEEP will continue working with the state to develop a sustainable business model for the program in the future and to extract lessons learned from Maine to bring elsewhere.

BPA

NEEP continued supporting the Building Performance Association (BPA) in their Maine workforce development program, helping to plan contractor meetings, queue up marketing materials, and identify pathways for employers and job seekers to advance. The overall intention of this project is to develop a more coordinated pipeline of home performance contractors in Maine to deliver on the state's clean energy goals and economy.

CT DEEP Geothermal Project

NEEP began working with the Connecticut Department of Energy and Environmental Protection (CT DEEP), University of Connecticut, and the Wallingford Housing Authority on a US DOE-funded networked geothermal feasibility project. NEEP created an introductory flyer to be distributed at the housing complex, began researching for and planning the geothermal workforce needs assessment, and communicated with the Project Advisory Committee. The project involves designing a geothermal heating and cooling system for an affordable housing community and will serve as a model for other jurisdictions.

Remotely

NEEP and ClearlyEnergy continued to do outreach to increase the awareness of Remotely, the virtual home energy audit tool. NEEP and ClearlyEnergy spoke with the Mayor of Syracuse, among other prominent stakeholders, about how the tool could best be utilized. The total uses of the app in New York reached 94. Additional audits were done outside the state of N.Y., with interest growing across the region and country. Remote or virtual energy

assessments present a significant opportunity for homeowners and contractors to speed up the home retrofit process and decarbonize more homes.

Progress Toward 2023 Outcomes	% Complete at Q3
1. Four states (Connecticut, Massachusetts, New York, Rhode Island) pass or implement building decarbonization strategies. **Progress Toward Outcome:** In July 2023, the state of Maine received approval for $4.4 million Grid Resilience State and Tribal Formula Grant from US DOE to increase resilience of the electric grid and Maine communities, while increasing clean energy workforce opportunities. Massachusetts introduced legislation (SB2178/HB3213) that would establish building performance standards for buildings greater than 20,000 square feet. These bills are building off the benchmarking legislation that passed last year. A second hearing is scheduled for October 31, 2023.	100%
2. Six states, utilities, or program administrators increase support of and direct new resources towards community-level decarbonization initiatives while specifically addressing equity in disadvantaged communities through these programs. **Progress Toward Outcome:** In July 2023, Maryland Governor Wes Moore announced $4 million in grants going through a pilot program for six jurisdictions to do energy efficient retrofits on nearly 300 homes. The Vermont Department of Buildings and General Services committed to cover the cost of five municipal building energy audits for the town of Rutland, as well as up to $500,000 for identified upgrades. About half of the town of Rutland is defined as a disadvantaged community in the Climate and Economic Justice Screening Tool. States in the region have submitted plans to US DOE for how they will disburse at least 60 percent of their Energy Efficiency and Conservation Block Grant (EECBG) allocation to municipalities that are ineligible for a formula grant of their own.	80%
3. Fifteen jurisdictions pass or implement innovative decarbonization policies/programs targeting existing or new buildings. **Progress Toward Outcome:**	65%

Progress Toward 2023 Outcomes	% Complete at Q3
Cambridge, Mass. passed an amendment to their Building Energy Use Disclosure Ordinance (BEUDO) in July 2023 that requires non-residential buildings over 100,000 sq. ft. to reach net-zero emissions by 2035 or pay a compliance fee. This was the third component of their "Green New Deal" policy package – in March 2023 they passed an ordinance establishing green job training programs and a zoning petition introducing new emissions accounting requirement. Providence, R.I. has been working on a benchmarking ordinance, which committee members plan to introduce to the City Council later in 2023. New Haven, Conn. began working with a legal intern with the Sabin Center for Climate Change Law in September 2023 to learn more about possible legal avenues for pursuing building energy benchmarking and home energy labeling policies. Four school districts in the NEEP region were awarded grants from US DOE's Renew America's Schools Grants program, which prioritizes high-need school communities – Baltimore County Public Schools in Md., Bridgeport Public Schools in Conn., Natick Public Schools in Mass., and William Penn School District in Penn. Brookline, Mass. began an Electrify Brookline campaign with how-to guides for residents, run by residents.	