



Heating Electrification Market Transformation

MISSION

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

NEEP's Heating Electrification initiative continues implementation of [our regional market transformation strategies](#) to accelerate market adoption of high performance, cold climate Air source Heat Pumps (ccASHPs) and Variable Refrigerant Flow (VRF) systems, while expanding to include a broader range of heat pump technologies. Heating electrification is essential to meet state and local climate stabilization goals by 2030 and 2050. This initiative supports that by building regional-scale momentum to adopt this innovative technology through a public-private collaboration of industry, state, community, and ratepayer-funded energy efficiency, and carbon reduction policies and programs. A variety of high-performance heat pump products provide reliable space heating and cooling, including air source, water source, ground source, reverse cycle chillers, packaged terminal heat pumps (PTHP), and rooftop units (RTU) even in states with cold winter weather. They offer households and businesses super-efficient comfort heating and cooling, and water heating solutions that replace or displace the use of less efficient, carbon-intensive space and water heating systems. The Initiative brings key market actors together with efficiency programs, state and local agencies, and consumer and clean energy advocates to develop and implement strategies to drive broad market adoption of this new generation of super-efficient heat pumps for all consumer groups and building types. Key strategy areas of focus in 2021 will be around specifications and product lists, consumer and installer education, program design best practices and in-field performance research.

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.*

Regional Trends and Leaders:

- Heating electrification is a priority for most Northeast States with growing interest in Mid-Atlantic States and beyond. MA, RI, NY, ME and CT have, or are developing, strategies to scale-up business and consumer adoption of high performance heat pumps.
- Heat pump adoption is quickly increasing in New York and New England. ASHP sales increased from ~ 50,000 units in 2013 to approximately 75,000 in 2016; a 50% percent increase in just three years.
- NEEP's [Cold-Climate ASHP Product List](#) has grown to include 8,000 products from over 90 different brands. Twenty energy efficiency programs in Northeast and Mid-Atlantic states, and beyond, use the list for their incentive programs. For 2021, NEEP is preparing a similar list for high performance VRF and PTHP products.



2021 Project Outcomes

NEEP's 2021 Project Outcomes:

1. Twenty percent increase in annual sales of high performance heat pump systems across the NEEP region.
2. Five new programs join the twenty others already using NEEP's ccASHP product list.
3. NEEP's heat pump consumer and installer guides are used or referenced by ten programs in the region.
4. Initiative participants report significant progress in implementing the Regional ASHP Market Transformation Strategy and Regional VRF Market Transformation Strategy



2021 Strategies and Deliverables

Stakeholder Engagement: NEEP will engage a diverse group of stakeholders - industry, efficiency programs, state and local government, national labs, U.S. DOE, and advocates - to develop and advance long-term regional market transformation strategies to speed the market introduction and adoption of ccASHPs and smart controls.

- ASHP Working Group*
- VRF Working Group*
- Sub-Committees*
- ccASHP Specification
- Installer Best Practices
- Program Best Practices
- Industry Advisory Committee
- **New!** Heat Pump Needs/opportunities Assessment Advisory Group
- Annual Heating Electrification Workshop
- Two topical webinars
- Invited presentations and briefings for initiative participants

Heating Electrification Initiative Subscription*

NEEP's [Heating Electrification initiative](#) is made possible through the engagement and support of key actors across the heat pump market. Current participants include regional, national, and Canadian interests spanning government, manufacturers, distributors and installers, service providers, program designers, national labs and research institutes, consultants, consumers, advocates, and other interested stakeholders.

NEEP invites interested stakeholders to join the Initiative through an annual subscription program for 2021. For more information about benefits and costs visit [NEEP's website](#).

Tracking and Analysis: NEEP will continue to expand its collaboration with states, program administrators, U.S. DOE, U.S. EPA, national labs, REEOs, and others to track, assess, and provide initiative members reported heat pump performance data and associated analyses. NEEP will also track and contribute to projects that drive the development of home heating system controls that integrate ccASHPs with other building heating systems.

- ASHP market tracking analyses in quarterly working group reports, including innovation tracking
- Progress Report: ASHP Market Transformation Strategy Implementation and Results
- Online repository of ASHP, VRF, and smart controls reports/analysis/resources
- Participation on core team conducting an Integrated Controls Demonstration project in New York, including managing technical advisory committee

Tools and Guidelines: NEEP introduced in 2019, a new format and user interface for the ccASHP Product List including user-friendly technical information. NEEP will continue to develop market and program facing tools to support the broad use of ccASHPs.

- Maintain/update NEEP's ccASHP Specifications and Product List
- **New!** Introduce NEEP's Cold climate VRF Specifications and Product List
- **New!** Introduce NEEP's Cold climate Packaged Terminal Heat Pump Specification and Product List
- **Update!** ASHP Sizing/selection and installation guides
- **New!** VRF Sizing/selection and installation guides
- **New!** Heat pump case studies (Commercial/Government/Multi-family applications)

Research and Reports: NEEP will support initiative expansion to include additional high performance heat pump technologies for space and water heating, whole house retrofit strategies and research to support updating the ccASHP specification based on latest test procedures through the following 2021 initiative participant advised research efforts:

- **New!** Needs/Opportunities Assessment for Commercial heat pump systems (i.e. RTU Heat pumps, packaged heat pumps, water source heat pumps, ground source, etc.) including cold climate specifications and program design
- **New!** Multi-partner VRF in- field performance Validation Project
- **New!** Program Guidance: Best practices for ASHP Whole House Applications

National/Regional Collaboration: NEEP will track, contribute to, and help disseminate relevant research, policies, programs and initiatives, and attend related conferences and events regionally and nationally to build market momentum to overcome identified market, technology, and policy barriers to ASHP and VRF market adoption. NEEP will actively seek to collaborate with organizations serving underrepresented communities to ensure our progress benefits a broad range of consumers.

- Collaborate with other regional organizations advancing heating electrification (i.e. Heat Pump Coalition, US EPA, US DOE, National labs, Regional Energy Efficiency Organizations, Natural Resources Canada, Rocky Mountain Institute, Green Urban council, Building electrification League, Building electrification Initiative, NY-GEO, Geo Exchange, Renewable Thermal Alliance , advocacy organizations, etc.)
- Monitor, communicate, present, and coordinate with national and regional organizations advancing high performance heat pumps.

Additional Activities Pending More Funding:

- Regional Building electrification marketing campaign: in support of building decarbonization/electrification adoption (would build off of Mass CEC's Clean Energy Lives Here Campaign)
- Strategy Development: Regional Heating Electrification workforce development strategy
- Report: Examine use cases for serving multi-family buildings with heat pumps
- Multi-party EXP07 Test Procedure and Rating method Research- Investigating representativeness

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