



# Low-Carbon Retrofit Solutions

## MISSION

*Ensuring equitable access to low carbon retrofit solutions to improve the energy efficiency of homes and buildings*

In order to achieve our decarbonization goals by 2030 and beyond, flexible and cost-effective solutions are needed to retrofit the existing building stock. Benchmarking and residential labeling provide solutions to track progress toward decarbonization goals and provide transparency to homeowners, renters, and building owners and managers. Building performance standards (BPS) actively reduces emissions from large existing buildings and are an important strategy in city and state carbon reduction goals. Policy solutions, market strategies, and programs can be developed with efficiency in mind to ensure that all homes and buildings are comfortable and healthy places to live, work and play. Increasing energy efficiency in existing buildings is a key strategy that states and local governments use to improve housing affordability, health and comfort, reduce energy use and associated air pollution, and create local job and business opportunities.

NEEP assists states, communities, and utilities in adopting and implementing low carbon retrofit solutions by engaging key stakeholders in a learning exchange about effective policies and programs, by conducting research and analyses of key trends, and by providing access to tools, training and other implementation resources. These tools include Home Energy Labeling Information eXchange (HELIX), Energy Estimator - powered by HELIX and ClearlyEnergy, Total Energy Pathways (TEP), and Building Energy Analysis Manager (BEAM). NEEP continues to support the states who use these tools by actively gathering more data and increasing their functionality.

## Regional Trends and Leaders:

Northeast states and communities are implementing residential labeling, commercial benchmarking policies, and building performance standards to help achieve climate goals. In order to successfully implement labeling and benchmarking, low carbon retrofit solutions, such as HELIX, BEAM, and Energy Estimator are needed. Six states (CT, D.C., MA, NY, RI, and VT) use HELIX to support state, utility, and local home energy labeling policies. HELIX also integrates home energy information into local real estate listings in Massachusetts, New Hampshire, Maine, and Vermont. Vermont is developing a voluntary labeling program that will be offered statewide in 2021 and piloting Total Energy Pathways, a retrofit program incorporating strategies of weatherization, solar PV, and efficient HVAC technologies. Montpelier, Vermont will launch its home energy information ordinance starting in 2021. Massachusetts and Connecticut have statewide residential labeling programs offered via utility programs. In the commercial sector, a growing number of cities are exploring building performance standards. Washington D.C. and New York City passed BPS ordinances that will drastically reduce GHG emissions and will go into effect by 2021 and 2024 respectively. Boston, Pittsburgh, Denver, CO, and Reno, NV will use BEAM in a phase one pilot project to support the implementation of benchmarking and BPS in their cities.

## 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.



### NEEP's 2021 Project Outcomes:

- 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
- 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.
- Three additional states (e.g. NJ, MD, ME) use HELIX to support home energy labeling policies and programs at the state and local level.
- Two cities adopt building performance standards as a strategy to improve energy efficiency of existing homes and buildings.
- Three states (MA, NY, RI) enact existing building retrofit initiatives to drive ongoing decarbonization of all existing homes and buildings towards growing an equitable retrofit economy.



**Stakeholder Engagement:** NEEP will continue to engage stakeholders (state agencies, real estate professionals and appraisers, gas and electric utilities, efficiency programs, building code officials) in a facilitated learning exchange to guide development of retrofit solutions for existing homes and buildings.

- NEEP's Regional Home Energy Labeling Stakeholder group to share best practices with mandatory or voluntary labeling pilots, programs, and policies
- NEEP's HELIX Solar PV Advisory Committee
- Commercial Retrofit Working Group to share best practices with mandatory or voluntary benchmarking pilots, programs, and policies
- Building Energy Analysis Manager (BEAM) advisory group
- Total Energy Pathway (TEP) Advisory Committee
- **New!** Three-part webinar series to address retrofit solutions with accompanying vlog

**Tracking and Analysis:** NEEP will track the growth and use of home energy labels across the Northeast

- **New!** Residential Labeling Interactive Dashboard
- **Update!** Interactive Benchmarking Dashboard
- **New!** Regional Snapshot of Data and Impacts of Benchmarking and Retrofit Trends
- **New!** Regional Retrofit Program Matrix

**Tools and Guidelines:** NEEP will provide tools and technical assistance to advance and support state, utility and municipal low carbon retrofit policy and program adoption and implementation including:

- Home Energy Labeling Information eXchange ( HELIX\*)
  - Energy Estimator – Powered by HELIX and ClearlyEnergy
- Building Energy Analysis Manager (BEAM)\*
- Technical assistance for communities and states
- **Update!** HELIX Online Resource Platform (Subscribers Only)
- **Update!** [Green Real Estate Resources web resource center](#)
- **New!** Total Energy Pathways Resource Center
- **New!** Total Energy Pathways Implementation Guide

**Research and Reports:** NEEP will use its data inventory to provide data analysis to partner with key stakeholders to support successful low carbon retrofit deployment throughout the Northeast. Products include:

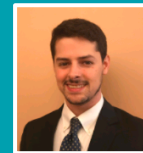
- **New!** Two Exemplars
- **New!** Equitable Access to Low Carbon Retrofit Solutions Report

**National/Regional Collaboration:** NEEP will help grow market demand for low carbon retrofit solutions through regional/national presentations and conversations and educational outreach to real estate professionals and appraisers. NEEP will:

- Monitor, communicate, present, and coordinate with national and regional organizations (e.g., NASEO and Building Performance Association)
- Disseminate U.S. DOE best practice and link states to federal programs and resources
- Engage with stakeholders to contribute to the development of national and regional programs
- Participate in DOE Workforce Development Accelerator

*\* Additional information about NEEP’s HELIX and BEAM Subscription Program Services is available upon request.*

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