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, Zero Energy Codes, and Appliance Standards offer Northeast and Mid-Atlantic States and communities major opportunities to achieve long-term, cost-effective energy savings in new, retrofitted, and existing homes and buildings and appliance purchases. NEEP's initiative provides collaboration and technical assistance to states and other stakeholders to adopt and benefits from these two foundational cost-effective energy and carbon savings strategies.

In the NEEP region, the energy savings potential from the adoption of model energy codes policies exceeds $7 billion dollars in energy cost savings and would prevent 47.63 MMT of CO_2 from being emitted by NEEP states between 2020-2030, the equivalent of what over 1 million passenger cars would emit over 10 years.[1] Adoption of advanced zero energy/carbon codes provides even greater energy, carbon and cost savings. Pathways to achieve these benefits are described in NEEP's 2017 strategy report "Building Energy Codes for a Carbon-Constrained Era."

Federal standards have the annual potential to curb 200 million metric tons of CO2 that would otherwise be emitted nationally (ASAP 2016). That is the equivalent of the annual electricity use of nearly 30 million homes.

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.

Regional Trends and Leaders:

The NEEP region is a national leader in advancing building energy code adoption, stretch code implementation, zero energy code development, home and building energy benchmarking and labeling, and state appliance standards:

- Nearly all Northeast and Mid-Atlantic states use one of the two most recent national model building energy codes (2015 or 2018 IECC),
- Within the next two building code adoption cycles, five Northeast or Mid-Atlantic States will adopt zero energy codes and eight will adopt zero energy stretch codes.
- Seven Northeast or Mid-Atlantic states have state appliance standards and eight are preparing to update or add additional product appliance standards in 2021.
- State energy and climate stabilization plans in CT, DC, MA, MD, NY, RI and VT include tightening appliance efficiency standards to provide affordable and reliable energy while reducing CO2 emissions.

[1] US DOE Impacts of Model Building Energy Codes Report

2021 Project Outcomes

NEEP's 2021 Project Outcomes:

1. Three additional Northeast and Mid-Atlantic States adopt zero energy stretch codes (DE, MA, NY)
2. Four additional Northeast and Mid-Atlantic States adopt stretch codes (CT, DE, ME, NJ)
3. Municipalities in four states (MD, WV, NH, CT) adopt zero energy building codes
4. 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.
5. At least seven Northeast and Mid-Atlantic States (NY, MA, RI, CT, DC, ME, PA) adopt new state appliance standards in 2021

2021 Strategies and Deliverables

Stakeholder Engagement: NEEP brings together key stakeholders, resources, and data to build knowledge and understanding to advance the adoption and implementation of building energy codes, zero energy codes, and appliance efficiency standard policies and programs.

- Convene and facilitate NEEP's Regional Building Energy Codes and Northeast/Mid-Atlantic Appliance Standards Working Groups to address participant needs and interests:
  - Topical webinars
  - Working Group meetings
  - Regular email updates on energy code news and appliance standards developments and opportunities
- Convene and facilitate a Massachusetts Achieving Zero Energy (MAZE) Initiative Building Energy Codes Stakeholder Group

Tracking and Analysis: NEEP will track and analyze leading efforts and progress across the region and facilitate peer exchange to inspire and transfer learning.

- **New Tracker!** Compilation of State Energy Code Enforcement Mechanisms: How states enforce/comply with/inspect energy codes, barriers and challenges, and how to improve compliance mechanisms
- Update: NEEP Web-based State by State Energy Code Tracker
- Update: NEEP Web-based Energy Code Policy Resource Center
- Update: Tracking of federal appliance standards program activity and ENERGY STAR product specifications
- Survey Industry Professionals in the Region on Prefabricated Construction and Virtual Inspection Market Barriers and Opportunities

Tools and Guidelines: NEEP's work will advance the development of strategies, tools, and best practices for state and local government leaders to adopt and effectively implement building energy codes and appliance standards.

- Maintain Online Resource center
- Update! NEEP Building Energy Code Adoption Toolkit and Compliance Toolkit
- **New!** Appliance Standards Toolkit
- **New!** 2021 IECC Adoption: Changes and Considerations one-pager (with accompanying webinar)

2021 Strategies and Deliverables Continued

Tools and Guidelines: Continued

- **New Best Practice Guidance!** Building an Equitable Energy-Efficiency Workforce in Preparation for Next-Generation Code Adoption (COVID-19, Virtual Inspections, Climate Change)
- **New Brief + Vlog!** Addressing Systemic Barriers to Code Adoption
- Topical blogs and exemplars
- Technical assistance for stakeholders

Research and Reports: NEEP will track and analyze state needs, trends, and progress to facilitate the adoption and enforcement of building codes, and beyond-base-code initiatives for new buildings.

- **New!** Codes Addressing Energy Burden and Equity for New and Existing Homes and Buildings: Patterns and Pathways Report
- **New!** Future of Anticipatory Energy Codes one-pager
- **New!** Building Energy Codes and Appliance Efficiency Standards: Embodied Carbon and Water Report
- **New!** Prefabricated Construction: Market Findings and Opportunities Brief
- **New!** Virtual Building Inspections: Market Findings and Opportunities Brief
- Coordinated comments to U.S. DOE and U.S. EPA respectively to encourage strong and timely federal standards and ENERGY STAR Specification revisions

National/Regional Collaboration: NEEP will leverage state, federal, and national resources to inform state plans and policies.

- Monitor, communicate, collaborate, present, and coordinate with national and regional organizations (e.g., Regional Energy Efficiency Organizations (REEOs), National Association of State Energy Officials (NASEO), Building Codes Assistance Project (BCAP), Appliance Standards Awareness Project (ASAP), Responsible Energy Codes Alliance (RECA), International Code Council, Inc. (ICC)), US Climate Alliance)
- Disseminate U.S. DOE and U.S. EPA best practices and link states to federal programs and resources (e.g. DOE Zero Energy Ready Homes Program)
- Coordinated comments to U.S. DOE and U.S. EPA respectively to encourage strong and timely federal standards and ENERGY STAR Specification revisions
- Contribute to the development of national building energy code initiatives (e.g., zero energy code technical workgroup; regional/national stretch code and zero energy code)

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