

Next Generation Energy Efficiency

Pivoting Energy Efficiency to Address Climate Change, Environmental Justice, and Underserved Consumers



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Overview

The Northeast is a national leader in prioritizing energy efficiency. Efficiency programs in the Northeast make the highest per capita investments and achieve the most ambitious energy savings goals in the country. Energy efficiency is the region's cheapest and cleanest "fuel": over 14% of New England's electricity mix comes from energy efficiency – the highest in the country.¹ Millions of homes and businesses have received efficiency services, improving comfort and indoor air quality, reducing consumer energy bills, and avoiding billions of dollars in more expensive energy infrastructure. It is time to build from this strong platform and refocus efficiency programs so that they 1) directly improve poorer quality housing that disproportionately burdens lower income residents and communities of color; 2) embrace clean electrification technologies for heating and cooling; and 3) do more to attain ambitious reductions in greenhouse gases and local air pollution.

Efficiency in the Northeast

SINCE 2010 ...

-  The Northeast has invested \$22 billion in energy efficiency, and consumers have realized \$49 billion in economic benefits
-  The region has saved 270 million megawatt hours of electricity - as much as the region's largest nuclear power plant generates in 14 years

IN 2019 ...

-  289,550 full-time jobs were directly related to the states' energy efficiency programs
-  Energy Efficiency investments have avoided 129 million metric tons of CO₂ - equivalent to Massachusetts, Maine and Connecticut's state-wide combined emissions
-  Over 703 million MMBtu of fossil fuels have been avoided - equivalent to two years of regional electric generation
-  4.8 million homes and businesses began taking control of their energy use by participating in states' energy efficiency programs



¹ ISO New England 2020 CELT Report. Energy efficiency accounted for 11% and 15% of peak summer and winter load, respectively, in 2019.

Building from a Strong Foundation

Over the past decade, Northeast states dramatically increased investments in energy efficiency. Policies that require utilities to acquire “all cost-effective” energy efficiency resources before purchasing more expensive and more polluting power plant contracts have shifted billions of dollars of investment from unnecessary energy infrastructure projects towards improvements for the buildings in which we live and work. By making our homes and businesses more efficient, fewer fossil fuels are used and more consumer dollars are invested in local communities – not sent away to pay for natural gas and oil. Consumers enjoy lower energy bills and better indoor air quality. Energy efficiency investments create jobs in weatherization and equipment installations. And greenhouse gases are reduced.

Acadia Center is proud of the role it has played in advancing energy efficiency in the region – promoting the creation of stakeholder boards to guide efficiency programs and advancing policies that have dramatically increased efficiency budgets and goals. But far more must be done to improve the efficiency of our homes and businesses and to ensure that all communities reap the full benefits of energy efficiency. Next Generation Energy Efficiency will improve public health, reduce our energy burden, and provide numerous consumer, climate, and economic benefits.

Do More and Do Better

Efficiency programs must pivot to address three critical challenges while sustaining its role as the “first fuel” of choice for our energy system.

- **Improve Housing Quality.** Efficiency programs have not delivered benefits equitably across all communities and income levels. Underserved groups, including renters, low- and-moderate income communities, and non-English speakers, often face the worst impacts of climate change and poor housing quality but have been unable to access the benefits of efficiency programs. Both poor insulation and emissions from heating and cooling systems negatively impact indoor air quality, exposing residents, especially in poorly ventilated buildings, to toxic pollutants.
- **Reduce Climate Pollution.** Energy efficiency programs have been a leading tool to reduce climate pollution. However, because program investments are screened through outdated cost-effectiveness tests that only measure certain benefits and costs, the ability of efficiency investments to reduce climate pollution has been constrained. It is time to update this approach so that emissions, equity, and public health benefits are fully valued.
- **Embrace Electrification.** Efficiency programs must be better aligned with opportunities to electrify buildings – a key strategy for accelerating the deployment of clean energy resources and transitioning away from fossil fuels. Under existing program requirements that focus on near-term reductions in energy demand, actions such as replacing gas furnaces with more efficient air source heat pumps are penalized, even if the heat pump could reduce overall emissions.

How is energy efficiency beneficial?

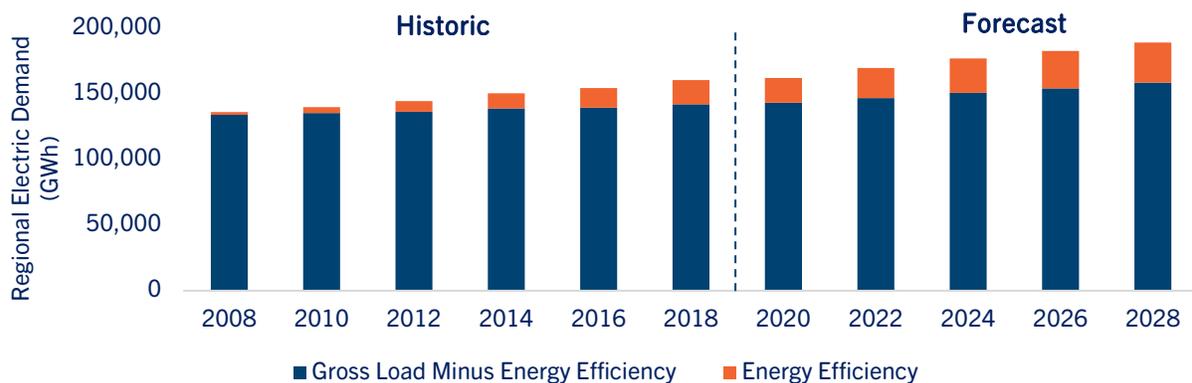
Energy efficiency services, which range from home insulation improvements to replacing appliances with more efficient alternatives, can improve comfort, reduce exposure to pollutants, and save consumers money. Energy efficiency is also the most cost-effective way to reduce greenhouse gas emissions. It has played a major role in helping to lower emissions in the Northeast, where building heating, cooling, lighting, and operations are responsible for over a third of the overall emissions that contribute to climate change.

Acadia Center's Next Generation Energy Efficiency initiative addresses these challenges through a new approach to energy efficiency – one that continues to value saving energy as a core consumer and energy system resource, but is also centered around meeting climate, environmental justice, and electrification goals.

Next Generation Energy Efficiency Requires Updating the Approach to All Cost-Effective Efficiency

Over the past decade and a half, All Cost-Effective (ACE) efficiency has successfully shifted utility and grid system investments into energy efficiency. In the mid-to-late 2000s, Acadia Center was a leader in advancing an All Cost-Effective efficiency mandates for electric and gas utilities and efficiency providers. Instead of a legislature determining the rate for efficiency funding, ACE efficiency required procuring as much energy efficiency as was cost-effective based on consumer and utility costs. Acadia Center has been at the forefront of this work, deeply engaged in advocating for the creation of stakeholder boards that conduct studies to determine all cost-effective efficiency potential and that help design the efficiency programs.

Energy Efficiency Meets a Significant Portion of Regional Energy Needs



Source: ISO-NE 2020 Annual Demand Forecast



As a result of ACE policies, efficiency program resources soared across the states. In Massachusetts, for example, annual efficiency revenues rose from \$125 million in 2006 to \$540 million in 2009; Rhode Island's skyrocketed from \$16 million to over \$100 million. Overall, efficiency spending in New England states now approaches \$2 billion annually, saving billions of dollars for consumers.

However, by screening investment only for nearer-term savings, the existing approach to cost-effectiveness limits treatment of older buildings that are more expensive to retrofit. ACE efficiency must evolve to address deep building retrofits and to fully account for benefits including thermal comfort, health, safety, and emissions, in addition to bill savings. By doing so, efficiency programs can better address buildings in communities that have been underserved to date.

ACE efficiency has valued reductions in energy demand far more than reductions in greenhouse gas emissions, even when greenhouse gases are valued. Ambitious electrification goals such as Maine's and Massachusetts' commitments to deploy hundreds of thousands of heat pumps in the next five years could increase electric demand and cannot succeed within the efficiency programs without reforming ACE provisions.

Next Generation Energy Efficiency is the next major phase for energy efficiency in the Northeast. Now is the time to evaluate how laws, rules, and stakeholder systems should evolve to prioritize housing quality improvements in underserved communities; embrace climate mitigation; shift to whole-house electrification; and continue to grow efficiency as a regional energy resource. **Below, Acadia Center outlines its strategic priorities and action steps to address the four components of Next Generation Energy Efficiency.**

Prioritize Housing Quality Improvements

Energy efficiency must be at the center of addressing the region's old housing stock. The most underserved populations (including low and moderate income, renters, and non-English speaking) tend to live in poorer quality housing with pre-weatherization barriers (such as mold or asbestos) or absentee landlords, preventing them from being treated by efficiency programs. These communities are most affected by long-standing environmental justice issues, and the buildings they inhabit damage their health and waste money.

To ensure that all communities reap the benefits of efficiency programs, existing benefit-cost methodologies, which determine how efficiency programs are implemented, must incorporate climate, equity, and health benefits from building retrofits. **Acadia Center will work with environmental and consumer advocates, environmental justice leaders, business interests, and efficiency vendors to develop policy recommendations that identify reforms needed to fully account for all the health, safety, and equity benefits that energy efficiency improvements deliver.**

Acadia Center is actively engaged in efficiency stakeholder councils to push for more comprehensive inclusion of energy efficiency benefits in program design. It is also conducting analysis on reforming cost-benefit test methodologies to ensure that all health, safety, and equity benefits are appropriately valued.

Ensure Alignment with Climate Mitigation

Every kilowatt-hour of electricity that does not need to be produced because of energy efficiency means less fossil fuel use. Efficiency programs can achieve deeper emissions savings if they are refocused with a greater emphasis on climate mitigation. **Acadia Center will press to:**

- **Update efficiency statutes and regulations, including the way programs are screened through benefit-cost tests, to emphasize reductions in emissions in addition to energy savings.**
- **Make certain that Public Utilities Commissions (PUCs) consider climate and health impacts when evaluating efficiency programs.**
- **Ensure that laws, regulations, and planning processes support efforts to transition from fossil fuels to clean electrification.**

Acadia Center is raising awareness about the need to reform PUC and other state agencies' statutory mandates to include climate responsibilities. Acadia Center is also performing analysis on opportunities to update benefit-cost tests and is pushing efficiency stakeholder boards to include Next Generation Energy Efficiency priorities.

Embrace Clean Heating and Whole-House Electrification

If deployed together, energy efficiency and electrification can deliver greater emissions reductions while improving indoor air quality. To better align efficiency programs and electrification, **Acadia Center will push for greater incentives for clean heating and weatherization, as well as for changes in how efficiency programs**

are administered to ensure co-delivery of building upgrades that are currently delivered in silos. Acadia Center will publish state-specific reports on the value of electrification and flexible demand and will push states to include electrification retrofit pathways in their efficiency plans.

Acadia Center is engaged in state energy efficiency program design to include electrification retrofit pathways and fuel-neutral incentives for clean heating and electrification. Acadia Center is strengthening its data capacity on buildings with PowerHouse, a model that can produce cost and savings information on the value of electrifying new construction, retrofits, and multifamily housing.

Sustain Investments in Efficiency as the Leading Energy Resource

Northeast states must expand efficiency investment levels and energy savings goals to ensure deeper savings and benefits for all. Acadia Center will work with partners and in coalition to ensure that decision-makers in the Northeast – including the regional grid operator, ISO-New England – recognize the value and necessity of efficiency to spur large savings in public health and economic benefits. Through its membership on efficiency boards and through PUC intervention related to efficiency plans, Acadia Center will advocate for increased budgets and the maximum possible savings goals, provide expert commentary on state energy issues, and offer data and recommendations to strengthen regulatory decisions.

Acadia Center is preparing an energy efficiency data dashboard, which it will publish as a publicly available resource on its website. Acadia Center is also leading a public engagement effort to highlight the benefits of energy efficiency and the need for Next Generation Energy Efficiency reforms.

Next Steps

Next Generation Energy Efficiency provides a framework for how states can elevate the role of energy efficiency as a tool to improve housing quality, address climate change, and deliver a range of public health, economic, and consumer benefits. While the Northeast has led the nation in energy efficiency programs for decades, we must refine our approach to ensure that efficiency programs deliver the maximum possible benefits. This transition will require significant stakeholder engagement and input. To push this initiative forward, Acadia Center will:

- **Seek implementation of Next Generation Energy Efficiency priorities in upcoming state three-year energy efficiency plans with a near term focus on Connecticut, Maine, and Massachusetts.**
- **Distribute and raise awareness of Acadia Center’s cost-effectiveness analysis proposal.** Acadia Center is preparing a straw proposal for consideration with colleagues, coalitions, and decision-makers on ways current cost-effective screening for efficiency programs should be modified to: 1) account for the value of reducing carbon in efficiency programs, 2) support whole-home building electrification, 3) expand efficiency program delivery to consumers and communities that have been underserved to date, and 4) the effect of shifting programs entirely to an avoided carbon metric.
- **Conduct informational and educational meetings** with key stakeholder groups, decision-makers, and media to socialize and seek input on Next Generation Energy Efficiency ideas and to identify opportunities for reform.
- **Prepare educational materials** for coalitions, networks, thought leaders, media, and others to raise awareness of the proposed reforms with the Next Generation Energy Efficiency initiative.

For more information:

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