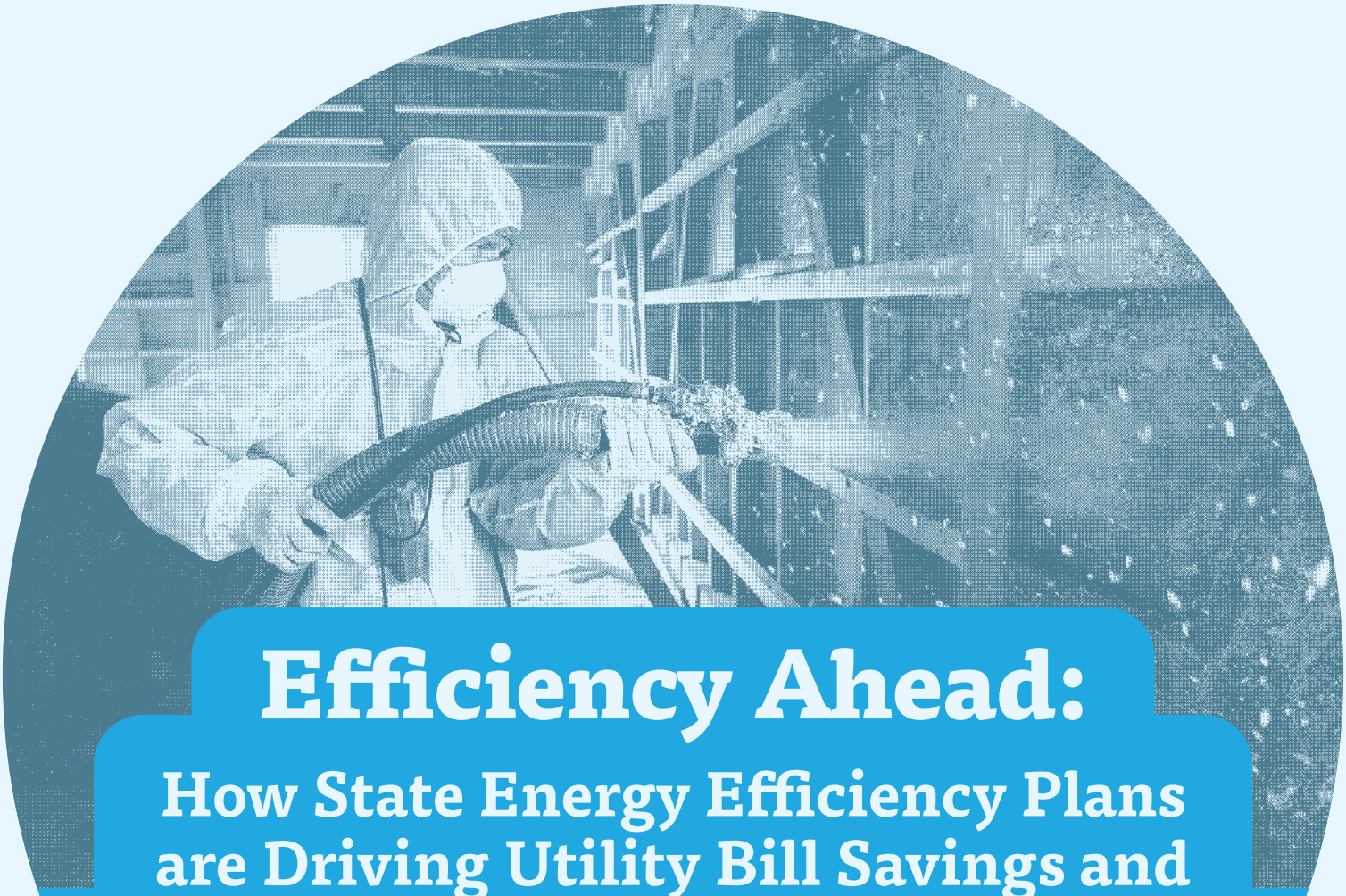

Efficiency Ahead:

How State Energy Efficiency Plans are Driving Utility Bill Savings and Benefits Across the Northeast

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Acadia Center

Executive Summary

Each state in the Northeast operates and administers energy efficiency programs funded via electricity and natural gas bills to deliver energy efficiency and electrification improvements to customers. These ratepayer-funded energy efficiency programs have been and remain the largest source of investment in efficiency and building decarbonization for the region, although they also work in tandem with other funding sources such as the Regional Greenhouse Gas Initiative (RGGI) and capacity markets. Much more than just grants and rebates, these programs are the primary pathway by which states procure and acquire cost-effective energy savings as a resource for the region's power grid—effectively serving as much as 10+% of annual consumption in New England in recent years, for example. Beneficiaries of these programs range from households and businesses to municipalities and industrial customers, in addition to broader benefits delivered to all ratepayers who contribute to program budgets. These state programs have been operating for decades and provide major overall benefits in the form of reduced overall building energy consumption, energy cost savings to residents and businesses, reduced peak demand stress on the region's electricity grid, and reductions in greenhouse gas (GHG) emissions, in addition to significant job creation and economic development increases.

State energy efficiency programs now face a pivotal juncture in their evolution, at a time when federal efficiency rebates have been cut, consumer affordability is front of mind for policymakers with rising energy prices, other energy resources are rising in cost, and yet cuts to ratepayer funded programs have been threatened and implemented by leading states. It is more important than ever for policymakers, advocates, program administrators, and consumers to understand the evolution of energy efficiency programming and to shape the future trajectories of the programs to meet the emerging needs of the region.

To guide the strategic deployment of funds feeding into these energy efficiency programs, states develop forward-looking plans (typically on a three-year cycle) that outline key parameters including overall program objectives and projected levels of investment, energy savings, GHG reductions, and cost-effectiveness—both at the individual program level and aggregated across the portfolio of programs. This report takes a closer look at the most recent energy efficiency plans developed by seven states in the northeast – the six New England states and New York.[1]

Overall, the report finds:

- **Investments and Lifetime Benefits:** The six New England states are cumulatively poised to invest $6.6 billion dollars in their energy efficient programs over the coming three-year period, generating an estimated $19.3 billion in lifetime benefits. They are also projected to avoided 25.3 million metric tons (MMT) of carbon dioxide equivalent (CO_2e) emissions. On an annualized basis, this level of investment is equivalent to approximately 7% of total regional expenditures on electricity and natural gas ($32.1 billion in 2022).[2]

- **Electricity and Fuel Savings:** Additionally, the New England state programs are projected to avoid 20.22 terawatt-hours (TWh) of electricity consumption (lifetime) and nearly 300 trillion British thermal units (TBtu) of combustible fuels (lifetime) as a result of the cumulative three-year plan investments. Electric savings will help the region continue meeting a substantial portion of annual electric load via energy efficiency (20.6 TWh saved in 2023, or almost 15% of gross load[3]). Combining both electricity and combustible fuel savings, the New England states are projected to avoided 368 TBtu of lifetime energy use, and this projected total rises to 703 TBtu with the inclusion of New York State.

- **Funding Cuts Reduce Consumer Benefits:** Recent proposed cut-backs to efficiency programs remove substantial benefits and risk increasing costs for consumers on a net basis. For example, as a result of the February 2025 decision by the Massachusetts Department of Public Utilities (DPU) ordering[4] a reduction of the 2025-2027 Three-Year Energy Efficiency Plan total budget by $500 million, the Commonwealth will lose out on $1.49 billion in lifetime benefits, 20 TBtus of energy savings, and 1.8 MMT CO_2e emissions. Notably, all the budget cuts in Massachusetts were to the residential program. Similarly, in Rhode Island, proposals **under consideration** would cut the 2026 efficiency plan's annual spending by 30%, jeopardizing $92 million in benefits and 37 to 42% of estimated net lifetime gas and electric savings.

- **Strong Cost-effectiveness Should Drive Increased Spending Levels:** Programs continue to offer strong cost-effectiveness and return on investment for ratepayers, with each dollar spent on efficiency yielding $2.93 in benefits across New England, on average. At the same time, not all achievable and cost-effective savings are being acquired that would save ratepayers additional money on energy, so more work can be done to avoid savings left on the table, and greater levels of investment would reap deeper savings for families and businesses.

- **Wide Range in Per Capita Investment Levels:** States in the region vary widely in their energy efficiency investments on a per capita basis, with program budgets ranging from $149 per capita in New York State to $631 per capita in Massachusetts. These variations reveal not only population-based differences but also differing approaches to measure mixes (i.e., what

portfolio of efficiency measures states pursue), cost-effectiveness screening (i.e., what states allow programs to "count" as claimable savings), and overall program ambition. States with lower levels of per capita spending should be reassured and emboldened about the opportunity to increase program investments and pursue greater levels of 'all cost-effective' savings in light of peers' investment levels.

- **Regional Benefits to Power Grid:** Although investments are made by ratepayers at the state level, efficiency programs deliver significant benefits at a regional level that all ratepayers in the region enjoy—for example, through reduced annual and peak demand on the regional power grid. These state contributions therefore create a regional whole that is greater than the sum of its parts with mutually reinforcing effects. Unfortunately, observing this aggregated regional impact of efficiency has been made more difficult as a result of ISO-NE's shift to an updated load forecasting methodology, which – despite other improvements – now omits reporting on annual and peak demand reductions from energy efficiency.

- **Need to Standardize Program Measurement and Reporting:** To address the longstanding 'apples-to-oranges' challenges of comparing programs across state lines, states in the region should come together to better standardize metrics utilized for program measurement, evaluation, and reporting. Major differences in reporting data persist, and the overall power and impact of energy efficiency in the northeast is limited without that alignment. With more universal reporting methodologies and benefit cost tests, programs in the region would collectively be more powerful, the ability to understand the value and design of programs would be substantially improved, and new opportunities for states to learn from one another would be unlocked.

Although all seven states examined produce forward-looking energy efficiency plans, the timing of these plans is not uniform across states, as illustrated by Figure 1 below.

Figure 1. Years Covered by Forward-Looking Energy Efficiency Plans Across 7 Northeast States[5]

State	Years Covered by Most Recent Energy Efficiency Plan				
	2024	2025	2026	2027	2028
Connecticut		2025-2027			
Maine			2026-2028		
Massachusetts		2025-2027			
New Hampshire	2024-2026				
New York			2026-2028		
Rhode Island	2024-2026				
Vermont	2024-2026				

METHODOLOGY OVERVIEW

The analysis conducted by Acadia Center in this report draws on publicly available data reported in each state's three-year energy efficiency plan, annual program reports, and related filings. In all cases, this report is focused on projected budgets, energy savings and benefits. For example, three of the state programs analyzed have three-year plans that include the year 2024, and actual budget spending and benefits data from 2024 may be available in some cases at the time this report was published. However, this report is strictly focused on projected data at the time the three-year report was published.

Acadia Center took the data presented in individual state plans at face value.[6] True apples-to-apples comparisons across programs are challenging for a number of reasons. States utilize differing cost-benefit tests to estimate overall benefits associated with their programs, maintain different lists of eligible and ineligible measures, make different assumptions regarding lifetime of measures, and utilize different formulas for estimating energy savings and associated greenhouse gas (GHG) emission reductions. Given data availability limitations, Acadia Center did not try to translate all total benefits, energy savings, and GHG emissions avoided data reported by each of the seven states using a universal conversion methodology that would enable true apples-to-apples comparisons across all categories. In nearly all instances, this report focuses on presenting the data as it is reported by each state, using the default methodology each state chose to report total benefits, energy savings, and GHG emissions avoided.

Throughout the report, energy savings and overall benefits associated with the programs are presented in lifetime terms. In other words, these data points answer the question, what are the anticipated cumulative lifetime benefits of all measures installed during the 3-year period covered by the plan?

Below are the primary data sources used for each of the seven states included in this analysis:

- **Connecticut:** 2025-2027 Electric and Natural Gas Conservation & Load Management (C&LM) Plan
- **Maine:** Triennial Plan for Fiscal Years 2026-2028
- **Massachusetts:** 2025-2027 Energy Efficiency and Decarbonization Plan; State Table Rollup (April 2025); Compliance Filing (April 2025); Calcstack Rollup (April 2025)
- **New Hampshire:** 2024-2026 Statewide Energy Efficiency Plan
- **New York:** Public Service Commission Orders Authorizing Low- to Moderate-Income and Non-Low- to Moderate-Income Energy Efficiency and Building Electrification Portfolios for 2026-2030
- **Rhode Island:** 2024-2026 Energy Efficiency Three-Year Plan and 2024 Energy Efficiency Plan
- **Vermont:** 2024-2026 Triennial Plan and VGS Triennial Plan-2024-2026 Appendix A and Resource Acquisition Model Results for 2021-2040 Electric Demand Resources Plan and 2021-2030 TEPF Demand Resources Plan

SUMMARY FINDINGS

As the infographic on the following page highlights, collectively across the most recent forward-looking three-year planning period for each state, these programs in the New England states are projected to deliver nearly $19.3 billion in total lifetime benefits to households and businesses across the region, providing over $2.93 in lifetime benefits per every $1.00 invested in the programs. Simultaneously, the programs play an instrumental role in creating and sustaining the over ~161,000 energy efficiency industry jobs in the region that currently exist and are anticipated to reduce lifetime CO_2e emissions at levels equivalent to removing nearly 5.5 million gasoline-powered cars from the road for one year. Additionally, the programs are projected to generate significant health benefits associated with a reduction in fossil fuel combustion, improved occupancy comfort, and reduced stress on and improved reliability of the regional electric grid.[7]

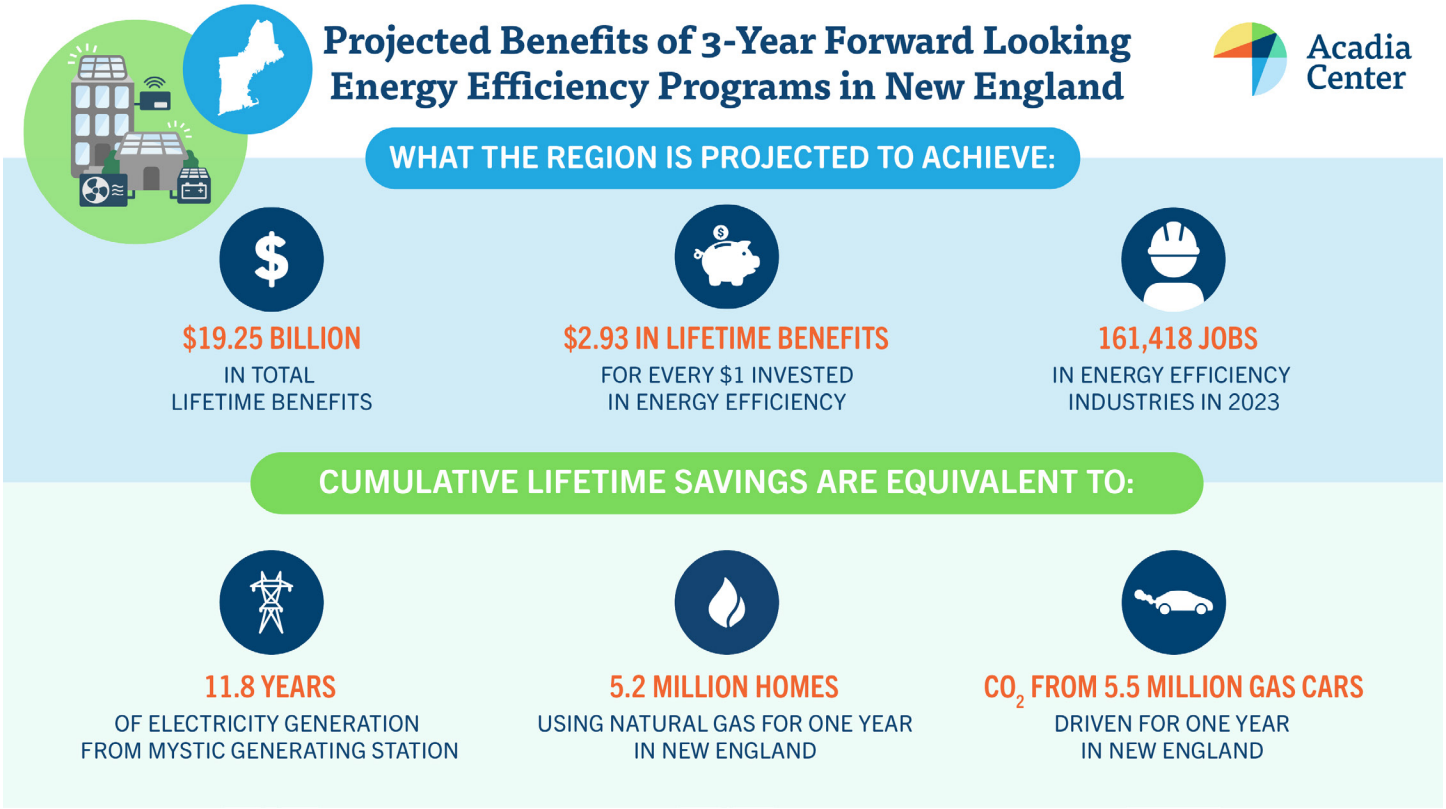


Table 1 and Table 2 below summarize the high-level findings using two distinct lenses. Table 1 focuses on the projected cumulative aggregate program budget and projected benefits anticipated to be delivered by energy efficiency programs over the three-year program cycle across the seven-state region. Table 2 displays the same data but presents the data in per capita terms based on the total population of each of the seven states.[8] As mentioned previously (footnote 1), limited data was available for New York over the 2026-2028 time period at the time of publishing this report.

Table 1. Cumulative 3-Year EE Program Budgets & Benefits by State

State	Budget & Total Benefits			Energy Savings			GHG Emissions Avoided
	Program Budget (Million$)	Lifetime Benefits (Million$)	Lifetime Benefits Per Program $ Spent ($)	Projected Lifetime Electricity Savings (TWh)	Projected Lifetime Combustible Fuel Savings (TBtu)	Projected Lifetime Energy Savings - All (TBtu)	Projected Lifetime GHG Emissions Avoided (MMTCO2e)
Massachusetts*	$4,501	$12,109	2.69	8.22	167.8	195.9	13.2
Connecticut	$721	$2,132	2.96	2.20	15.4	22.9	3.0
Maine	$529	$3,419	6.46	2.28	84.1	91.9	3.7
Rhode Island	$403	$854	2.12	2.28	10.3	18.1	1.5
New Hampshire	$234	$531	2.26	2.60	11.6	20.5	2.0
Vermont**	$190	*$209*	*1.45*	2.64	9.8	18.8	1.8
New York***	$2,960					335.3	
New England Total	**$6,578**	**$19,254**	**2.93**	**20.22**	**299.1**	**368.1**	**25.3**
7 StateTotal	**$9,537**					**703.3**	

Table 2. Per Capita: Cumulative 3-Year EE Program Budgets & Benefits by State

State	Budget & Total Benefits			Energy Savings			GHG Emissions Avoided
	Program Budget ($)	Lifetime Benefits ($)	Lifetime Benefits Per Program $ Spent ($)	Projected Lifetime Electricity Savings (MWh)	Projected Lifetime Combustible Fuel Savings (MMBtu)	Projected Lifetime Energy Savings - All (MMBtu)	Projected Lifetime GHG Emissions Avoided (MTCO2e)
Massachusetts*	$631	$1,697	2.69	1.15	23.5	27.4	1.85
Connecticut	$196	$580	2.96	0.60	4.2	6.2	0.83
Maine	$376	$2,433	6.46	1.63	59.9	65.4	2.61
Rhode Island	$362	$768	2.12	2.05	9.3	16.3	1.39
New Hampshire	$166	$377	2.26	1.84	8.2	14.5	1.42
Vermont**	$292	*$323*	*1.45*	4.07	15.1	28.9	2.84
New York***	$149					16.9	
New England Total	**$428**	**$1,251**	**2.93**	**1.31**	**19.4**	**23.9**	**1.65**
7 StateTotal	**$271**					**20.0**	

General Notes: Methodologies for estimating lifetime benefits, energy savings, and GHG emissions vary across states. The data presented here represents values reported in state reports. In the case of the $ value of benefits reported, Acadia Center utilized the results from the default or "primary" benefit cost test in each state. Electricity savings exclude increased electricity consumption from electrification in all cases.

*Throughout this report, Massachusetts energy savings, GHG reductions, and related metrics were adjusted to reflect a 10% ($500 million) reduction in the proposed program budget, including a corresponding Acadia Center estimate of 10% reduction in benefits and energy savings.

**For Vermont, all columns include data from Electric, Gas, and TEPF programs except "Lifetime Benefits" and the "Benefits/Cost" ratio, which reflect only Electric and Gas programs. Vermont does not report lifetime benefits for TEPF.

***At time of publishing, for New York programs, Acadia Center only had access to total program budget and total lifetime energy savings for all fuels combined (electricity and combustible fuels) for years 2026-2028.

Detailed Findings

COMPARING ANTICIPATED LEVELS OF PROGRAM SPENDING ACROSS STATES

As discussed in detail later in this report, some metrics for comparing energy efficiency programs across states present challenges. For example, states use differing cost-benefit tests to evaluate the cost-effectiveness of their programs and states use varying methodologies for estimating lifetime energy savings stemming from particular energy efficiency measures. However, one metric that does present a relatively straight forward apples-to-apples comparison across states is the total level of funding states choose to invest in their energy efficiency programs.

For most programs, participant incentives make up the majority of overall EE program budgets, but other costs can also make up a significant portion of the program budget as well. As one example, in the Massachusetts Draft 2025-2027 Energy Efficiency and Decarbonization Plan, by far, the two largest budget categories are Participant Incentives (66% of total budget) and Sales, Technical Assistance & Training (20% of total budget). The remaining categories of Program Planning and Administration, Marketing and Advertising, Performance Incentives, and Evaluation and Market Research make up, collectively, the remaining 14% of the total anticipated program budget.

Given the wide range in total populations among northeastern states—ranging from Vermont with approximately 650,000 residents to New York with approximately 19.9 million residents—cumulative 3-year budget totals for the programs clearly don't tell the whole story, but examining these cumulative 3-year budget totals on a per capita basis (using each state's total population) provides an interesting point of comparison. Figure 2 below presents the 3-year budget spending in two ways, showing both: 1) Cumulative total 3-year investment by state in billions of dollars (blue columns and left Y axis) and 2) Per capita 3-year investment by state (orange dots and right y axis).

Figure 2: Cumulative 3-Year Plans Total & Per Capita Budgets for Northeastern States[9]

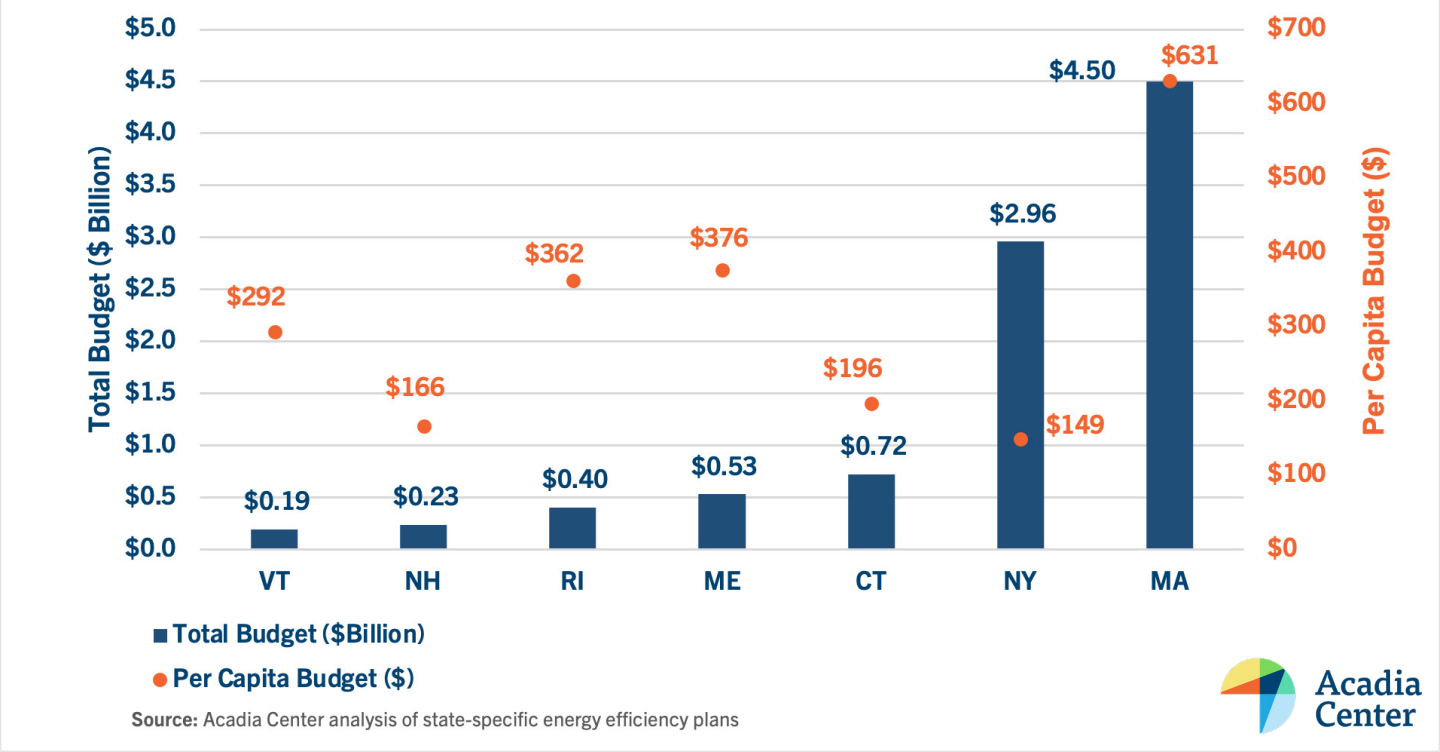


Figure 2 above demonstrates a wide range of 3-year per capita spending, ranging from a low of $149 in New York to a high of $631 in Massachusetts. It also illustrates that while some states may have significant overall levels of planned program spending, these states don't necessarily rank as high in terms of per capita spending levels. For example, New Yorks $2.96 billion 3-year overall program budget ranks 2nd highest among the seven states but ranks lowest among the seven states in per capita terms based on our analysis. And, on a similar note, Connecticut's total planned spending ranks 3rd highest but only 5th highest in per capita terms. Massachusetts stands out as having both the highest total program planned spending across the three-year period at $4.5 billion, more than 1.8x higher than state with the 2nd highest level of total spending (New York), and the highest per capita spending of $631, approximately 1.7x higher than the 2nd highest state in terms of per

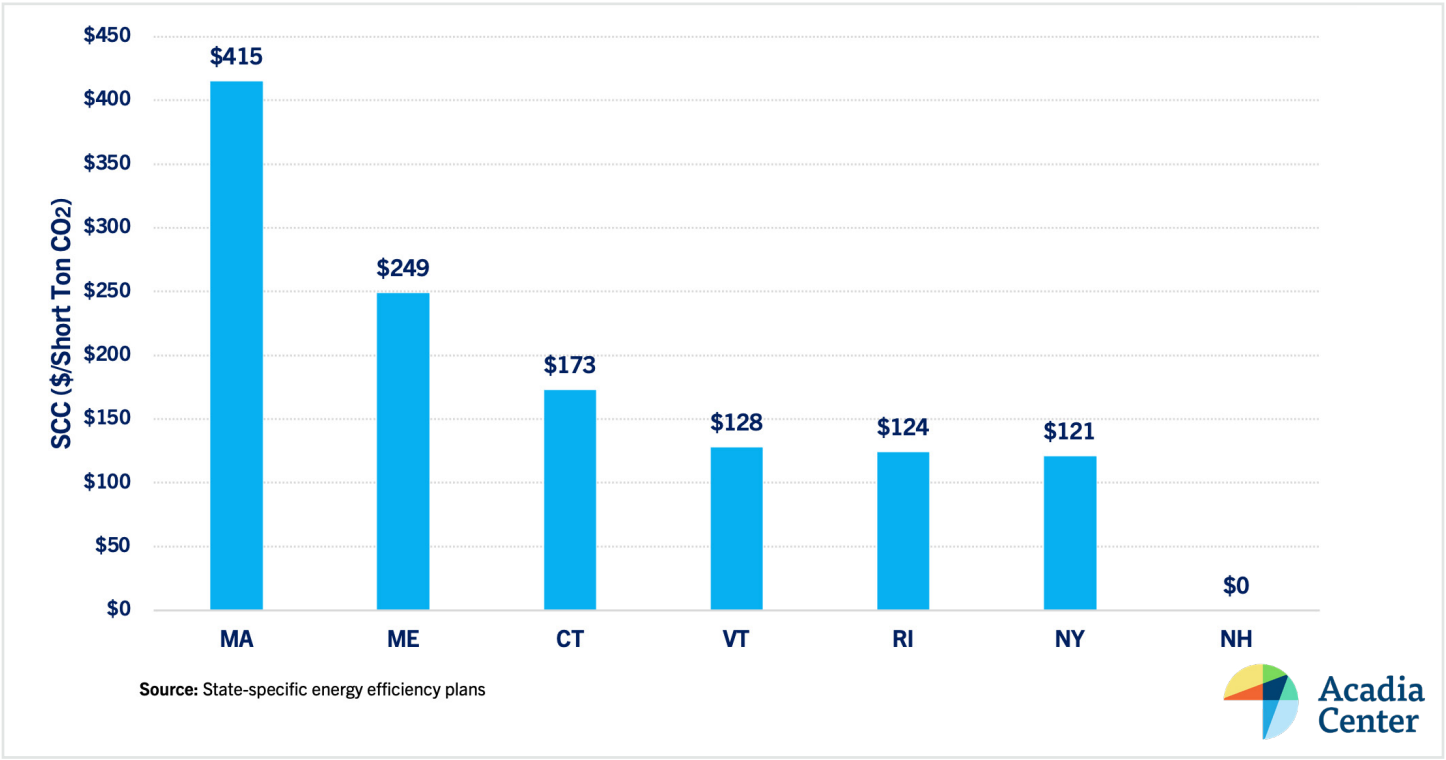
capita spending (Maine). The planned levels of program spending per capita, in particular, provide an illuminating point of comparison for state decision makers looking to assess the spending levels of their programs relative to other states in the region.

COMPARING PLANNED PROGRAM SPENDING TO PROGRAM BENEFITS (USING DEFAULT BENEFITS METHODOLOGY FOR EACH STATE)

For any program utilizing ratepayer utility bills as a funding source, cost-effectiveness is paramount. Programs calculate a benefit-cost-ratio (BCR) to ensure ratepayer funds are being used in a prudent manner. Broadly speaking, a BCR divides the total benefits of a measure or program (including avoided electric and gas system costs) over the lifetime of a proposed project by the total costs of a measure or program (including both programmatic costs and participant costs). The types of benefits included in these calculations range widely across states and within states, many of which use multiple cost-benefits tests to evaluate their program. Many states use multiple cost-effectiveness tests with one test serving as the "primary test" and other tests serving as "secondary tests".[10] Generally speaking, a BCR greater than or equal to 1.0 indicates a measure is cost effective, while a BCR of less than 1.0 indicates a measure is not cost effective.

Comparing any cost-effectiveness metrics of energy efficiency programs across state lines is extremely challenging given the wide differences in methodologies deployed by individual states, particularly on the benefits side of the ledger. As one example, some states incorporate a social cost of carbon (SCC)—an estimate, expressed in dollars, of the economic damages caused by emitting one additional ton of carbon dioxide into the atmosphere—into their primary cost-benefit test and others do not. Even among states that do include a social cost of carbon in their test, the assumed social cost of carbon can vary, as illustrated by Figure 3 below, significantly influencing estimated levels of benefits.

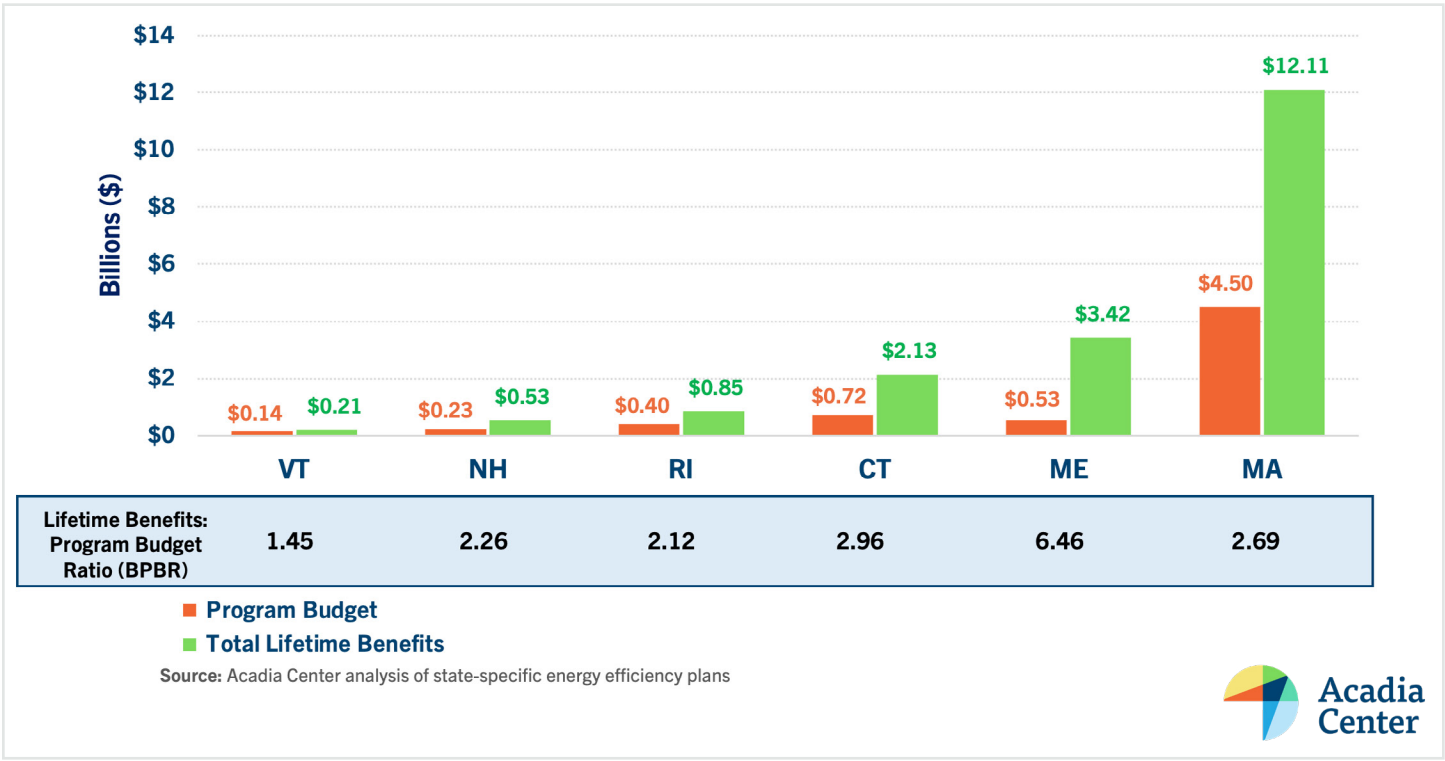
Figure 3: Social Cost of Carbon Used in Each State's Most 3-Year Plan[11]



As demonstrated by Figure 3 above, the SCC used by states in their most recent three-year plan varies tremendously, ranging from a low of $0/short ton in New Hampshire to a high of $415 in Massachusetts. It's worth noting that some of the variation in Figure 3 above can be explained by the timing of the release of the most recent 3-year plan. Many states in the region are frequently updating their SCC based on the latest research on the topic, and these updates can often result in a dramatic jump in the assumed SCC. So, for example, Rhode Island finalized their 2024-2026 plan in October of 2023, while Maine finalized their 2026-2028 plan in April 2025, a full year-and-a-half later. The level to which other "non-energy" impacts are factored into state cost-effectiveness testing also varies considerably. These non-energy impacts can include impacts such as reduced costs for operation and maintenance associated with efficient equipment or practices, reduce health costs, and reduced use of water resources.

Acknowledging the disclaimers above, it's nonetheless interesting to examine the ratio of total lifetime program benefits (as reported using each state's default methodology for calculating benefits) to overall program budgets, as Figure 4 below highlights. It's worth noting that the ratio presented in Figure 4, the Benefits to Program Budget Ratio (or "BPBR"), is distinctly different from a typical BCR because it does not include program participant costs (e.g., portion of a residential heat pump installation cost not covered by the energy efficiency program incentive/rebate). In other words, the BPBR highlighted in Figure 4 below is strictly answering the question, *"What does $1 in energy efficiency program budget generate in terms of total lifetime benefits using each individual state's definition of total benefits?"*

Figure 4: Cumulative 3-Year Plan Expected Program Budget, Lifetime Benefits Based on State's Default Benefits Reporting, and Ratio of Lifetime Benefits to Program Budget by State[12]

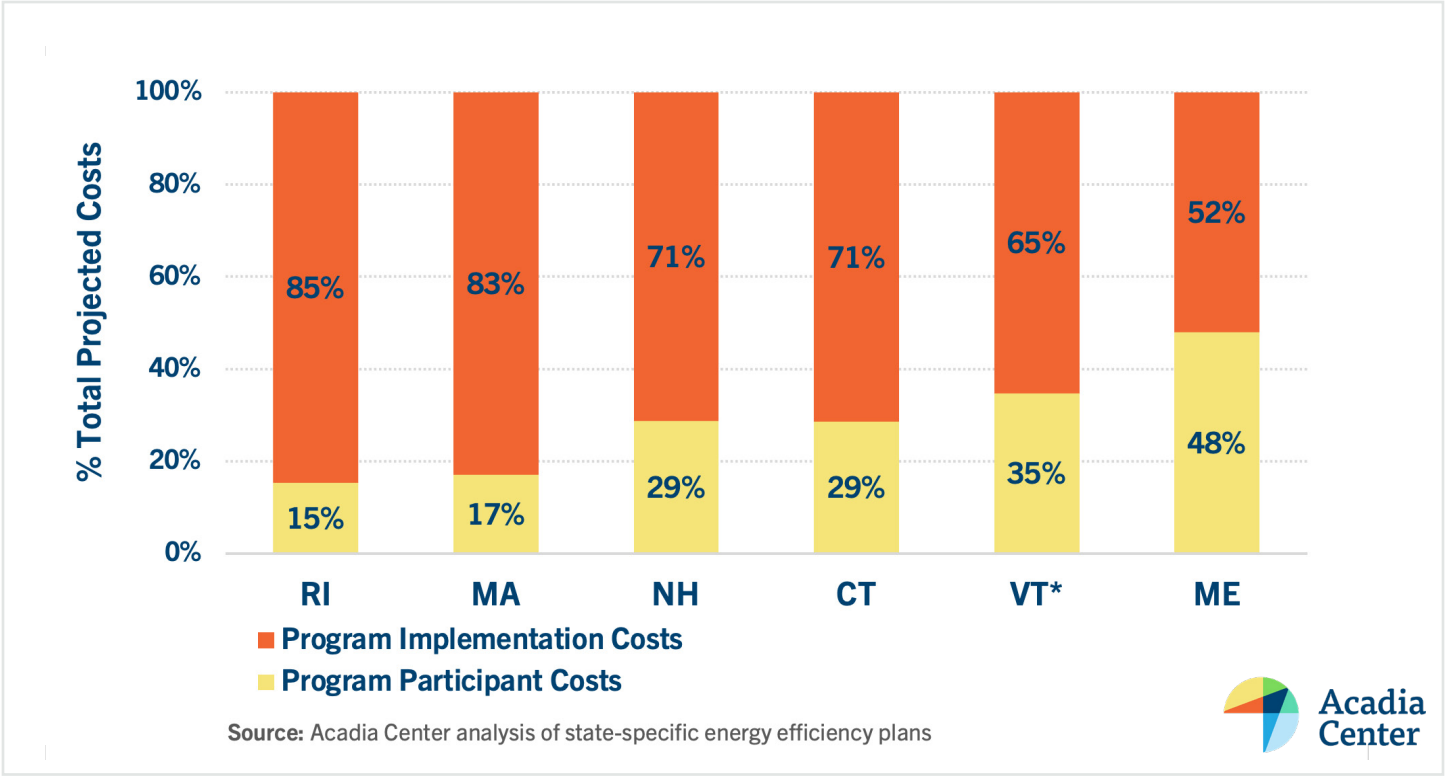


As Figure 4 illustrates, all states demonstrate a benefits/program budget ratio ("BPBR") above 1.0, indicating that $1 invested in energy efficiency programs generative more value than the initial investment (based on each state's own total benefit calculation methodology) across all six states. BPBRs range from a low of 1.45 (Vermont) to a high of 6.46 (Maine), although it is difficult to read too much into these cross-state comparisons. For example, Vermont's Total Resource Benefits calculation strictly includes the present value of energy, water, and fuel benefits, which likely encompass many—but not all—of the benefits quantified using the Total Resource Cost (TRC) test in some other northeastern states. As one example, Vermont's total benefits calculation does not assign value to a social cost of carbon as is done in other northeastern states.

Maine's BPBR of 6.46 highlighted in Figure 4 above jumps off the page relative to the other states in the region. Although Acadia Center did not do an exhaustive deep dive to understand all the potential drivers behind Maine's high BPBR, a couple items stand out. Firstly, the "Beneficial Electrification" programs in Maine appear to be driving the exceptionally high BPBRs reported by the state. For example, for plan year 2026, the combined projected program budget for the "Commercial and Industrial Prescriptive Initiatives Beneficial Electrification Measures" program and the "Home Energy Savings Program Beneficial Electrification Measures" is $44.6 million with a combined lifetime benefits projection of $532.4 million (a BPBR of 11.9 for those two programs alone). Those two beneficial electrification programs account for 28% of the projected overall 2026 program budget and 51% of the projected lifetime benefits generated by the program in 2026. The BCRs for those two programs are lower than the BPBRs—4.78 and 4.65, respectively—since they also factor in participant cost, but are still high relative to overall portfolio BCRs in other New England states.

Another factor potentially influencing the high BPBRs reported by the Maine program is that total projected costs reported by the program, which include both program budget and participant costs, show a fairly even split between program costs (52%) and participant costs (48%) as highlighted in Figure 5 below. In the five other New England states, the percent of total costs attributed to participants is much lower, ranging from 15% (Rhode Island) to 35% (Vermont). In other words, Maine projects their program will "generate" about $0.92 of participant investment per $1.00 of program investment, while Rhode Island projects their program to generate about $0.18 of participant investment per $1.00 of program investment.

Figure 5: Cumulative 3-Year Plan Breakdown of Expected Total Costs: Percent of Total Costs Attributable to Program Costs vs. Participant Costs by State[13]



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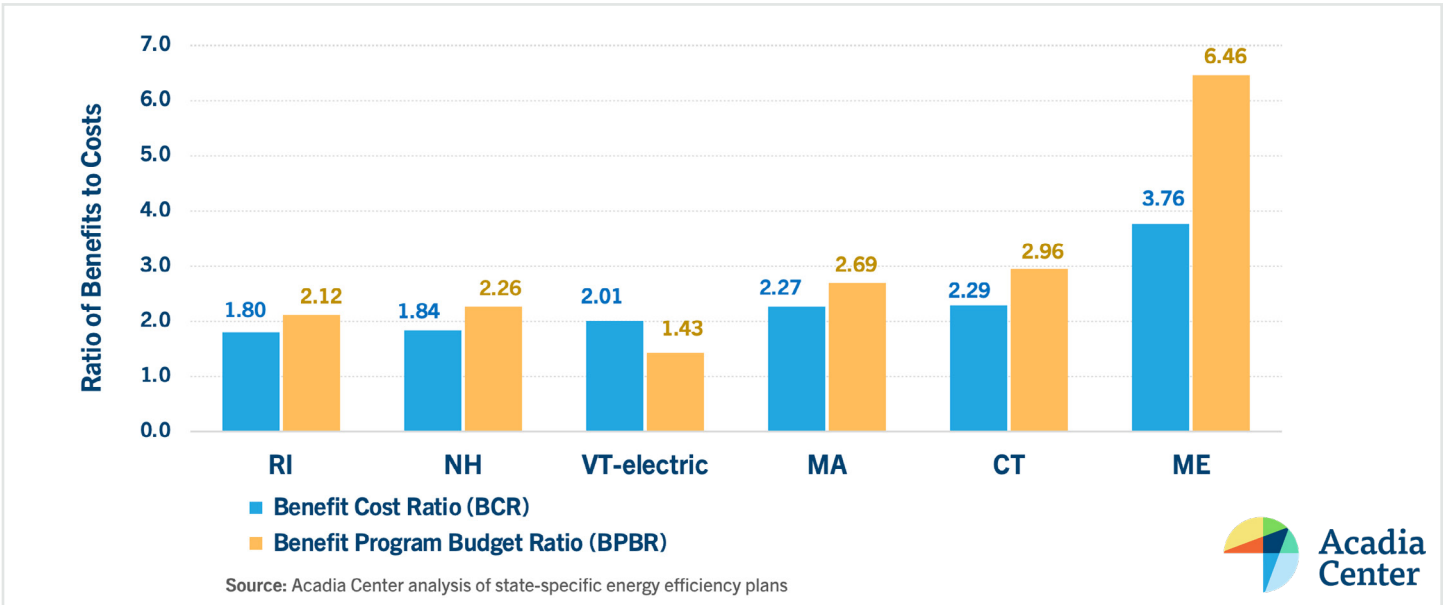
As highlighted in Figure 6 below, the benefit cost ratio (BCR) reported by programs can differ significantly from the BPBR presented by Acadia Center in Figure 4 above. Most notably, the BCR reported by states factors in participant costs to the "total costs" denominator of the BCR ratio, thus generally making the BCR lower than the BPBR.

Figure 6: Cumulative 3-Year Plan Expected Benefit-Cost Ratio Based on Default BCR Reported by Each State (Including Customer Costs) vs. Lifetime Benefits Per Dollar in Program Budget[14,15]



Maine again stands out as an outlier, with a wide gap between the BCR (3.76) and BPBR (6.46) – potentially mainly explained by the relatively even ratio between program budget and participant costs as highlighted in Figure 5 above. Vermont is an outlier in the sense that the BPBR presented above (1.43) is lower than the BCR presented above (2.01). Vermont uses the Societal Cost Test as the primary test to calculate their BCR, but Acadia Center was not able to isolate the total benefits of Vermont's primary test (as was done with all other states above to inform the BPBR calculation). Instead, Vermont's BPBR was calculated using their report Total Resource Benefits (TRB) associated with their electric efficiency program. The TRB focuses strictly on the present value of energy and water savings and is less expansive in its definition of "benefits". It, for example, it doesn't include externality benefits, like avoided carbon emissions, that are captured in the Societal Cost Test.

Figure 7 below breaks out state program budget and lifetime benefits in per capita terms based on total state population.

Figure 7: Cumulative 3-Year Plan Expected Benefit-Cost Ratio Based on Default BCR Reported by Each State (Including Customer Costs) vs. Lifetime Benefits Per Dollar in Program Budget[16,17]

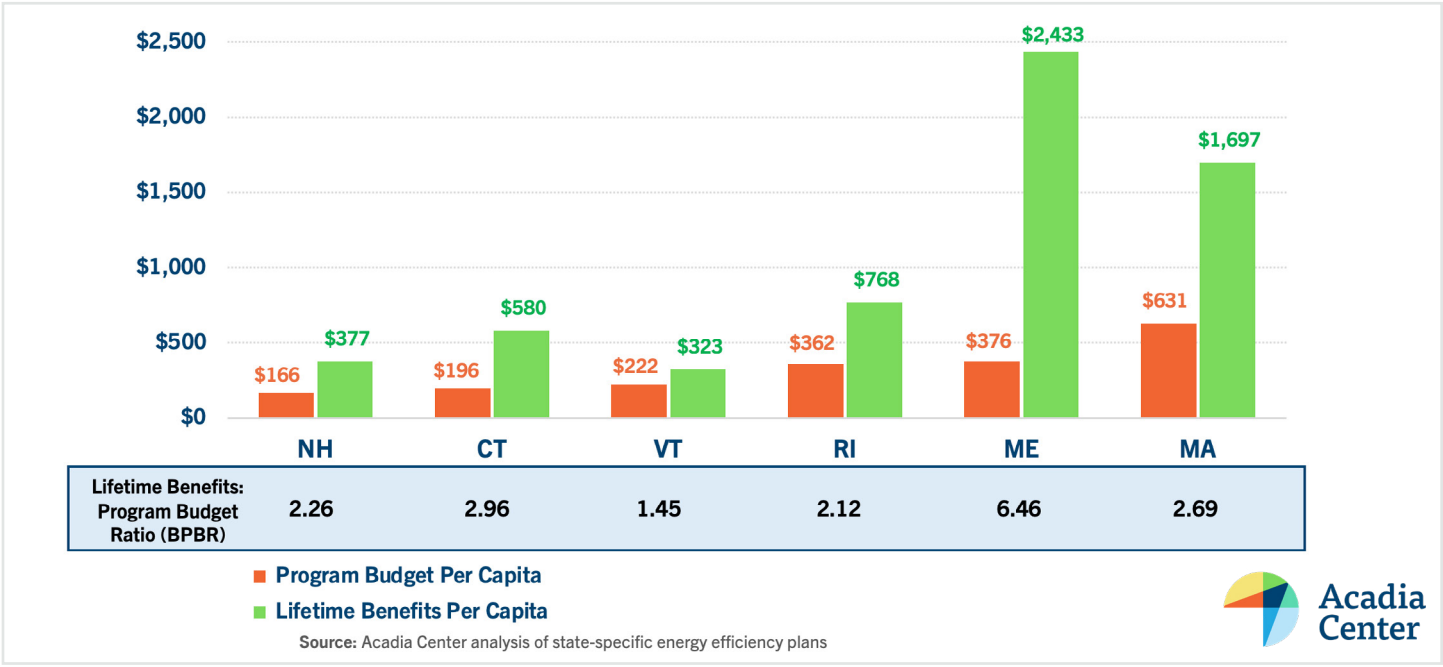


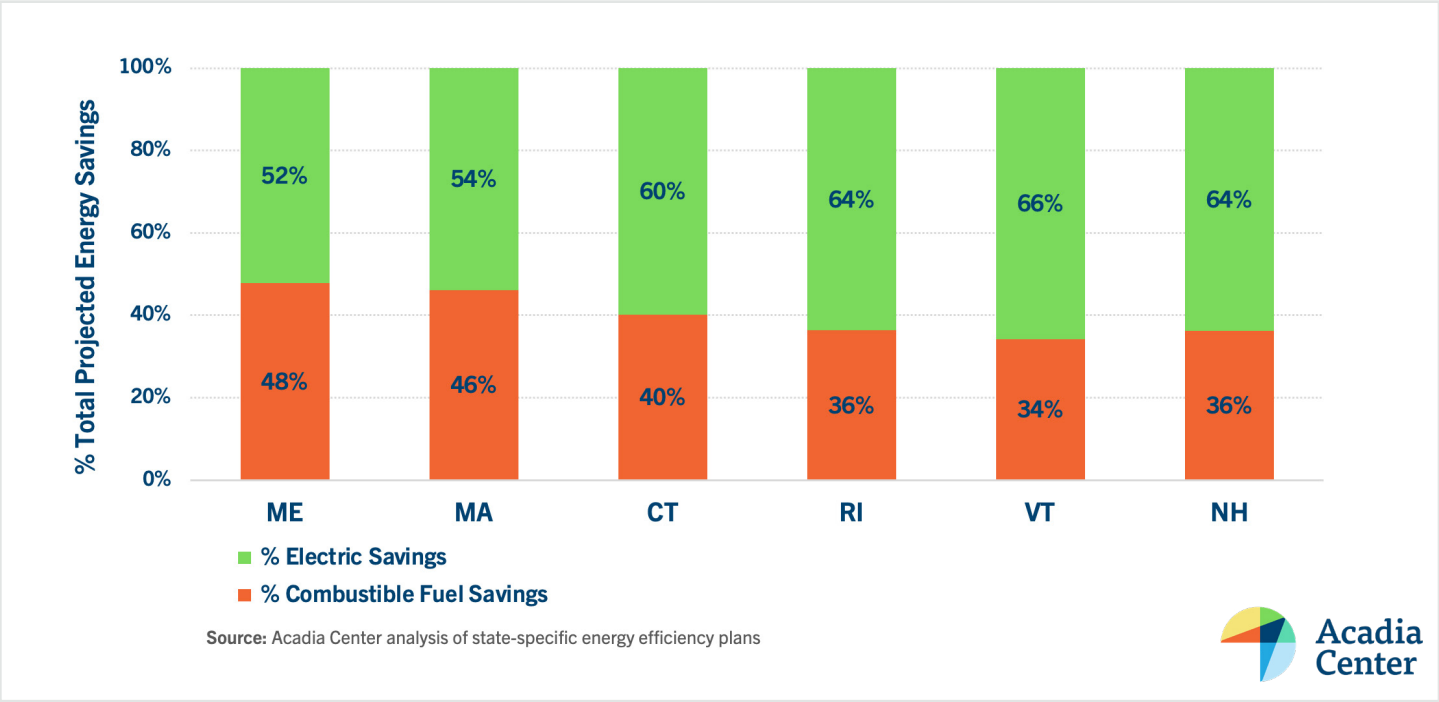
Figure 7 above highlights that projected per capita benefits over the 3-year period far outpace per capita program budgets. Cumulative per capita budgets over the 3-year planning period in the New England states range from a low of $166 (New Hampshire) to a high of $631 (Massachusetts), but projected lifetime benefits accrued on a per capita basis over the same 3-year planning period range from a low of $377 (New Hampshire) to a high of $2,433 (Maine).

PROJECTED PROGRAM ENERGY SAVINGS BY FUEL TYPE: ELECTRICITY VS. COMBUSTIBLE FUELS

Acadia Center analyzed state energy efficiency planning documents over the three-year period to better understand the projected levels of lifetime energy savings by fuel type for each state. Figure 8 below highlights projected lifetime energy savings from measures projected to be installed over the 3-year period and breaks these savings into two categories: 1) Savings from reduced electricity use and 2) Savings from reduced use of combustible fuels including natural gas, heating oil, and propane. Figure 8 highlights the wide range in the percent of total lifetime energy savings anticipated to come from reduction of on-site combustion of fuels—ranging from a high of 92% (Maine) to a low of 52% (Vermont). It's important to note that **Figure 8 below *does not include* negative electricity savings from beneficial electrification measures,** as many states exclude these negative savings from their reporting and Acadia Center is aiming to facilitate apples-to-apples comparisons across programs to the greatest extent possible. See further details on this topic below.

Program Accounting Practices for "Negative" Electricity Savings from Electrification Measures: One important note is that accounting for anticipated electricity savings has become more complex since the introduction of electrification measures to energy efficiency programs. States that include electrification measures now have both "traditional" energy efficiency measures that will reduce electricity consumption (e.g., conversion from an electric resistance water heater to heat pump water heater) and beneficial electrification measures that will increase electricity consumption (e.g., conversion from gas furnace to heat pump). Some states in the region (MA, NY, VT), exclude additional load from electrification measures in their top-line reporting on annual and lifetime electricity savings, while others (ME, CT) include it. In either case, states typically do include the data both ways, so (with some effort) one can consider program electricity savings with or without the additional electricity consumption from beneficial electrification. Other states (RI, NH) do not currently include electrification measures in their 3-year plans so the distinction is not relevant.

Figure 8: Cumulative 3-Year Plan Percent of Projected Total Lifetime Energy Savings from Electricity vs. Combustible Fuels[18]



There's no simple "one size fits all" universal explanation for why some states are projected to see a significantly larger share of total lifetime energy savings come from reductions in on-site combustion of fuel, while other states are projecting the inverse. However, Figure 8 above does clearly illustrate that some states are prioritizing reduction in combustible fuels over "traditional" electric energy efficiency (again, Figure 8 excludes increased load from beneficial electrification programs). Acadia Center did not conduct extensive research to uncover the key drivers, but several variables could be at play including the extent to which programs still capture significant electricity savings from LED lighting projects and still incentivize efficient gas heating equipment. Additionally, the speed and scale at which the programs are shifting towards greater emphasis on beneficial electrification measures could be a key factor.

In some states—like Maine—the net result is that the 3-year plan is actually anticipated to increase electricity consumption due to the anticipated level of electrification measures installed. Maine's total 3-year lifetime electricity savings including increased load from electrification is -3.8 million MWh, while, conversely, the 3-year lifetime electricity savings excluding increase load from electrification is 2.28 million MWh.

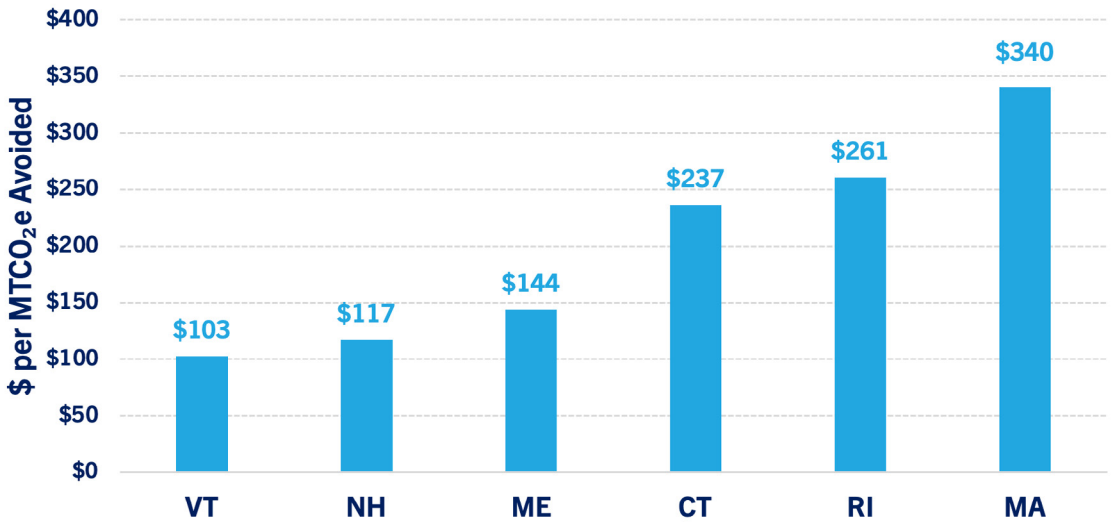
PROJECTED PROGRAM BUDGET PER MT CO_2e EMISSIONS AVOIDED

Particularly as some states in the region shift their energy efficiency programs to place a greater emphasis on electrification and reduction of GHG emissions to support state targets related to decarbonization of the building sector, it's worth comparing how program investments are translating into reduced GHG emissions on a dollar of program investment per MT CO_2e avoided basis, as shown in Figure 9 below.

Figure 9 shows a wide range in program investment per MT CO_2e avoided, ranging from a low of $103/MT CO_2e (Vermont) to a high of $340/MT CO_2e (Massachusetts). It's challenging to provide a detailed narrative explaining this wide difference seen across states, but several variables could be at play. For example, states could be using differing methodologies for calculating lifetime energy savings by measure and associated emission reductions—there is no universal methodology states are required to use. Even within states, the dollars of program investment expected to generate one MT CO_2ereduction varies considerably across programs. For example, in Maine, the "C&I Custom Program" accounts for 16% of anticipated total program GHG reduction and is anticipated to reduce 1 MT of CO_2e per $27 of program investment. In contrast, the "Income Eligible Home Initiatives" accounts for 19% of anticipated total program GHG reductions and is expected to reduce 1 MT of CO_2e per $154 of program investment. This serves as one example highlighting how the mix of measures and budget allocations by program can have a profound impact on the program spending per MT of CO_2e avoided metric.

Another potential variable to consider is specific measures that are or aren't deemed eligible within state programs. For example, historically, LED lighting has been a relatively low cost means for programs to achieve both electricity savings and associated GHG reductions. However, some states, including Massachusetts, have discontinued incentives for "non-controlled" (e.g., lacking occupancy sensors) lighting products through the large commercial lighting initiative.[19] These types

Figure 9: Cumulative 3-Year Plan Expected Program Budget Per Lifetime MT CO_2e Avoided by State



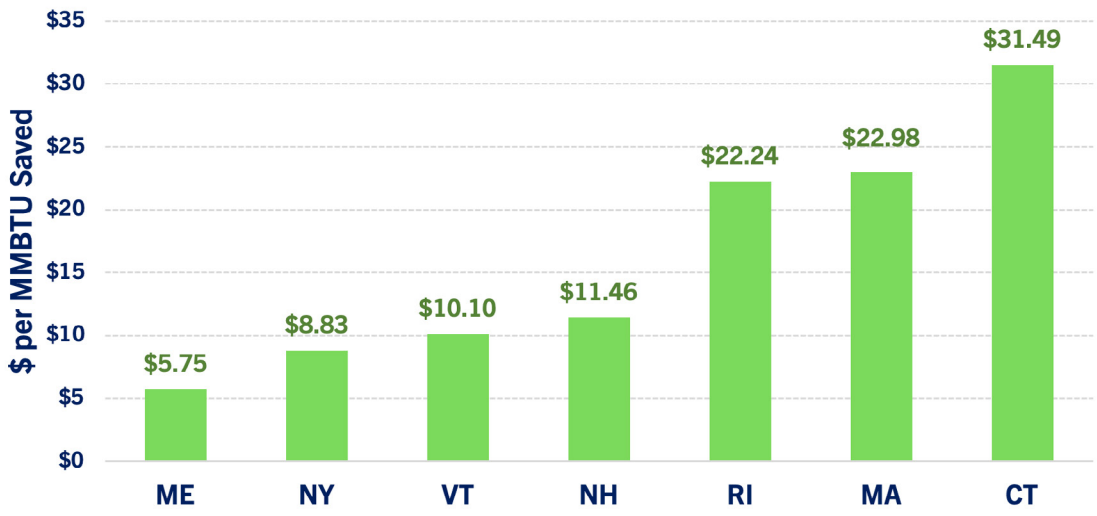
Source: Acadia Center analysis of state-specific energy efficiency plans

of measure eligibility decisions are made on a state-by-state basis, and thus make pure apples-to-apples comparison of metrics across programs challenging.

PROJECTED PROGRAM BUDGET PER LIFETIME ENERGY SAVINGS ACHIEVED

The ability to cost-effectively reduce energy consumption is at the core of energy efficiency programs. Thus, investigating program budget dollars spent per lifetime energy unit savings provides an interesting point of comparison across states. Figure 10 divides projected cumulative program budgets over the 3-year period by total cumulative lifetime energy savings across all fuels (electricity and combustible fuels) to determine an overarching $/lifetime MMBtu avoided metric.It's important to note that **Figure 10 below *does not include* negative electricity savings from beneficial electrification measures,** as many states exclude these negative savings from their reporting and Acadia Center is aiming to facilitate apples-to-apples comparisons across programs to the greatest extent possible.

Figure 10: Cumulative 3-Year Plan Expected Program Budget Per Lifetime Energy Savings (Electricity and Combustible Fuels Combined) by State

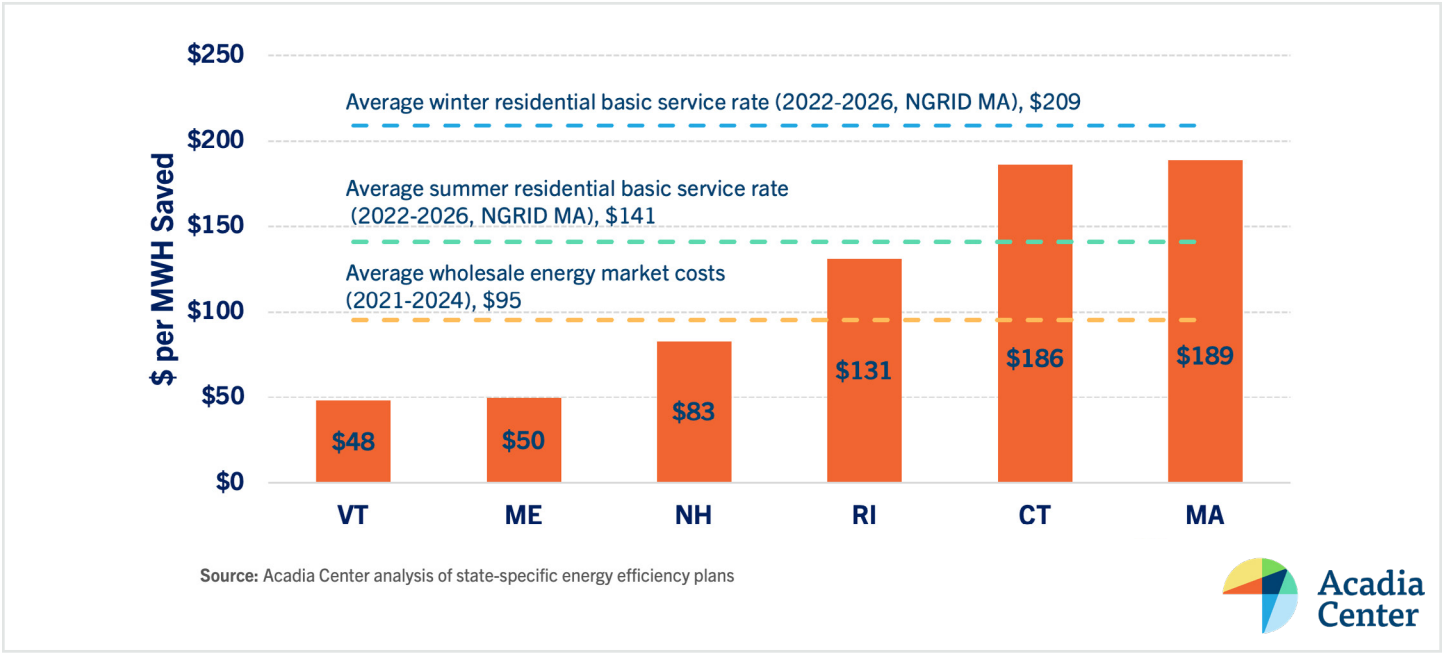


Source: Acadia Center analysis of state-specific energy efficiency plans

Figure 10 above highlights a wide range of program dollars per lifetime MMBtu avoided, ranging from a low of $5.75/MMBtu (Maine) to a high of $31.49/MMBtu (Connecticut). Determining the specific underlying drivers explaining the wide range in this metric is beyond the scope of this analysis but could potentially be linked to factors discussed previously in this report including lifetime energy savings methodology differences and key differences in the mix of measures/programs incentivized by the respective programs.

On the electric side, Figure 11 below highlights a wide range of per-MWh costs for each of the six New England state programs (beneficial electrification measures have been removed to focus on the cost of saving/avoiding a MWh of load).

Figure 11: Cumulative 3-Year Plan Expected Program Budget Per Lifetime Electricity Savings by State, Excluding Beneficial Electrification Measures[20]



As noted above, these differences are driven by a variety of factors, including each state's respective mix of efficiency measures, its allocation between different customer segments (residential, income-eligible, commercial, industrial), and cost-effectiveness rules around what can and cannot be claimed as efficiency savings (e.g., for LED lighting). Nonetheless, these figures offer insights into the states' respective willingness to pay for energy savings, and it is possible to compare these levels to other known electricity cost benchmarks in the region. For example, Vermont, Maine, and New Hampshire's program costs are all substantially lower than wholesale energy and transmission costs, which have ranged from $78 to $130/MWh in the last four years.[21] While Rhode Island, Massachusetts, and Connecticut program costs have been higher, they are still roughly in the same range as retail basic service/supply rates have been in recent years (e.g., ranging seasonally between roughly $100 and $200/MWh in some states in the region)—and are comparable to some of the expected price points from recent offshore wind procurements (e.g., roughly $150/MWh). The trajectory of these program costs as measure mixes evolve in the coming years will be a key determinant on how much energy efficiency can be acquired cost effectively, especially in an era of overall rising energy costs.

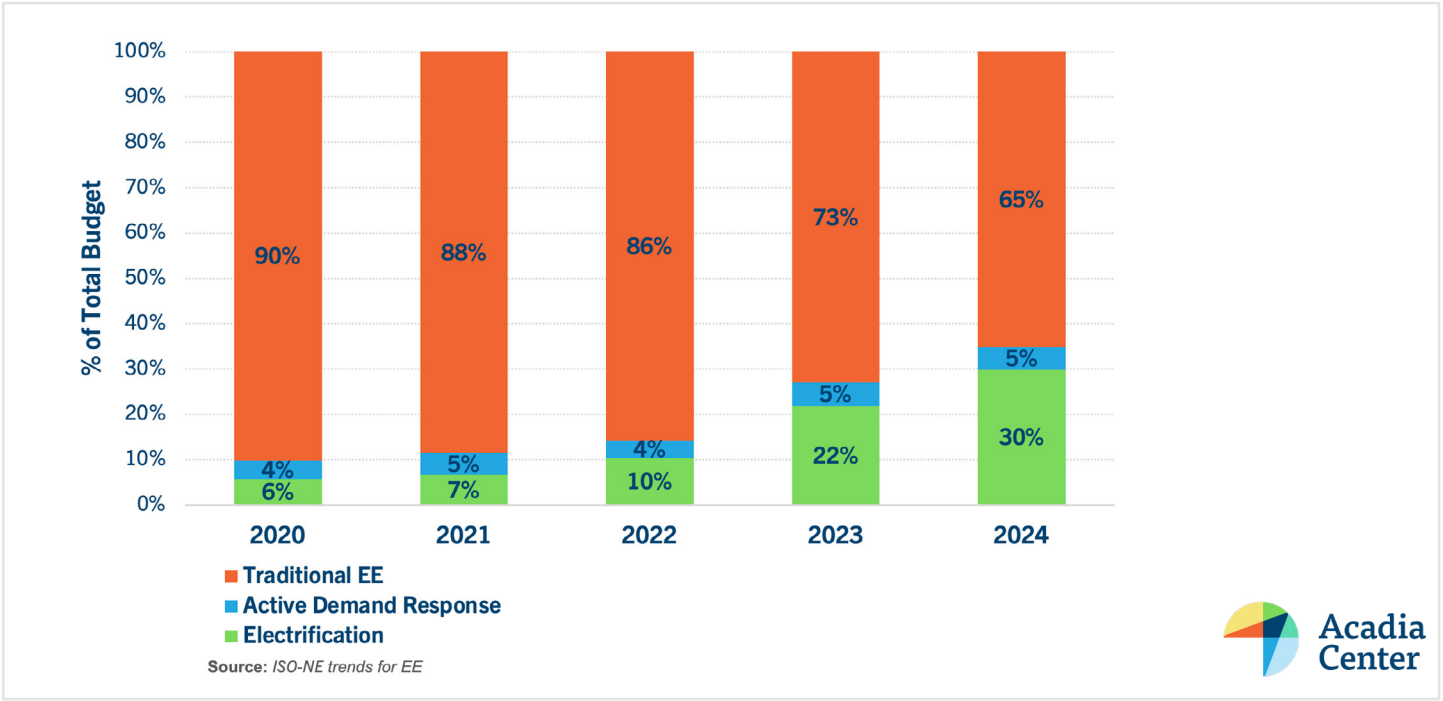
SHIFT IN PRIORITIES: THE RISE OF ELECTRIFICATION IN NEW ENGLAND

Over the past few years, New England's EE programs have transformed by prioritizing investments in electrification initiatives. As shown in the graph below based on ISO-NE's data, while traditional EE measures continue to dominate total budget allocations, their share has declined since 2020. Meanwhile, funding for electrification has grown more than 6x over the same period. At the same time, Automated Demand Response (ADR) budgets have remained relatively stable.

Although the level to which individual states have shifted towards placing a greater emphasis on electrification within the programs has varied significantly, Figure 12 above highlights the 2020-2024 trend at a regional level in New England as reported by ISO-NE, with the percent of aggregated program budget across the six New England states has made a staggering jump from approximately 4% in 2020 to approximately 30% in 2024.

The rapid growth reflects a broader shift in strategic priorities in the region. Electrification, particularly in residential and commercial heating and transportation sectors, is increasingly recognized as an essential tool in decarbonization efforts.

Figure 12: New England EE Budget Allocation according to ISO-NE[22]



By replacing fossil-fueled-powered equipment with electric alternatives and coupling them with a cleaner grid, states can achieve deeper emissions reductions than traditional EE programs alone can offer. Together, these shifts highlight a regional pivot: New England is not just seeking to reduce energy use, but also to change the kind of energy its residents and businesses consume.

This evolution has been in large part driven by the ambitious economy-wide decarbonization targets established by many of these northeastern states. For example, as displayed in Table 3 below, six of the seven northeastern states examined in this report—with the lone exception of New Hampshire—have an economy-wide GHG reduction targets of at least 80% by 2050.

Table 3: Economy-Wide GHG Reduction Targets Adopted in Law for Seven Northeastern States[23]

State	Economy-Wide GHG Reduction Target	GHG Reduction Target Year
Connecticut	80%	2050
Maine	80%	2050
Massachusetts	Net Zero	2050
New Hampshire	N/A	N/A
New York	Net Zero	2050
Rhode Island	Net Zero	2050
Vermont	80%	2050

In order to achieve these levels of economy-wide emissions reductions over the next 25 years, these states will need to rapidly shift away building heating away from fossil fuel combustion and towards efficient electric heating technologies (e.g., heat pumps) paired with significant envelope improvements to reduce overall heating demand in buildings. High-level decarbonization planning documents have highlighted this point—for example, two key benchmarks established in the Massachusetts 2050 Clean Energy and Climate Plan (CECP) are 1) 80% of homes heated by electric heat pumps by 2050 and 2) Nearly half of homes receiving an energy efficiency envelope improvement (insulation and air sealing) by 2050.[24]

These target levels of building electrification highlight the need for the programs to incentivize electrification measures if the programs are to serve as one of the core policy or programmatic drivers of the building decarbonization transition.

Many "traditional" energy efficiency measures historically viewed as cost-effectives, for example incentivizing the replacement of an inefficient gas furnace with a marginally more efficient gas furnace, are no longer compatible with state climate targets —as evidenced by the Massachusetts EE program's decision in 2024 to discontinue rebates and incentives for natural gas, oil, and propane heating equipment in nearly all buildings types.[25]

Conclusion

As illustrated by the findings in this report, state energy efficiency programs are well positioned in the coming years to reduce overall building energy consumption, deliver energy cost savings to residents and businesses, reduce peak demand stress on the region's electricity grid, and deliver reductions in greenhouse gas (GHG) emissions—all despite the changing overall landscape for efficiency investments and available funding sources. These programs will simultaneously generate significant health benefits associated with a reduction in fossil fuel combustion, improved occupancy comfort, and reduced stress on and improved reliability of the regional electric grid. While the benefits delivered by these programs are impressive, state program data were not easy to compile, and cross-state comparisons, as illustrated in this report, are made quite challenging by significant variations in reporting methodologies and data formatting across states. Cross-state collaboration to enable more uniform reporting would enable stakeholders to better communicate the significant positive benefits these programs are having on a regional scale. Looking ahead, as states in the region look to make greater in-roads toward the acquisition of all achievable and cost-effective efficiency savings, more focused attention will need to be paid toward how programs are funded, how ambition can be increased cost-effectively, who pays, and over what time-period are costs incurred. New funding concepts and reforms in this arena will ensure that ratepayers continue to benefit greatly from efficiency as an energy resource while perhaps bearing less of a direct responsibility to invest in program budgets exclusively through electric and gas rates.

End Notes

1 At the time of publication, Acadia Center only had access to data on projected budget and total energy savings for New York's EE program for years 2026-2030, but did have data on energy savings by fuel type, $ benefits, or GHG emissions avoided. Thus, some figures in this report exclude New York.

2 Based on latest available data from U.S. Energy Information Administration (EIA): https://www.eia.gov/state/seds/seds-data-complete.php.

3 2024 CELT Report, ISO-NE: https://www.iso-ne.com/system-planning/system-plans-studies/celt.

4 Massachusetts Department of Public Utilities Press Release, "DPU Reduces Mass Save Plan by $500 Million and Approves Proposals to Reduce Residential Gas Bills": https://www.mass.gov/news/dpu-reduces-mass-save-plan-by-500-million-and-approves-proposals-to-reduce-residential-gas-bills

5 Unlike other states in the northeast region, New York's forward-looking energy efficiency plans cover a 5-year planning horizon (e.g., 2026-2030). To enable cross-state comparisons, this report focuses on the first three years (2026-2028) of those plans.

6 In limited instances, Acadia Center did fill in data gaps with reasonable assumptions to better facilitate some apples-to-apples comparisons across states. For example, the Vermont Triennial Plan only provided annual energy savings projections for the Thermal Energy and Process Fuels (TEPF) program and Acadia Center estimated lifetime energy savings from the TEPF program using data on the ratio of TEPF lifetime to annual energy savings reported in the Efficiency Vermont Savings Claim Summary 2024 report. Similarly, the Maine Triennial Plan only provided data on annualized CO_2e reductions and Acadia Center estimated lifetime CO_2e reductions based on the ratio of lifetime to annual energy savings reported in the plan.

7 Forward-looking energy efficiency savings are based on the most recent electric and gas savings projections from each New England state's three-year energy efficiency or conservation plan (e.g., 2024–2026 or 2025–2027), compiled and aggregated by Acadia Center. Figures presented above do not reflect any intra-plan modifications states may have proposed/be considering subsequent to the filing of the three-year plan (including proposed reductions in Rhode Island). Regional impact equivalents, such as avoided home gas use, power plant generation, and vehicle emissions, are calculated using standardized national metrics: average residential natural gas consumption from EIA RECS 2020; average annual generation from Mystic Generating Station based on EIA Form 923 (2019–2022 average annual generation of 1,719 GWh); tailpipe emissions from a typical passenger vehicle from EPA (4.6 metric tons CO_2/year); and energy efficiency jobs data from DOE's Energy Employment by State 2024 report.

8 State population estimates are based on U.S. Census Bureau 2024 data, available at: https://www.census.gov/data/tables/time-series/demo/popest/2020s-state-total.html#v2024

9 Acadia Center also investigated energy efficiency program spending levels per unit of total state-level building energy consumption (combined residential and commercial) to compare it to the per capita metric under the assumption that it may yield significantly different results for states (e.g., New York) that see large volumes of daily commuters from neighboring states. However, this per unit of total building energy consumption analysis yielded strikingly similar results to the per capita analysis.

10 Although not the primary focus of this report, this March 20, 2024 presentation from the Massachusetts Energy Efficiency Advisory Council titled "Cost-Effectiveness Screening and Bill Impacts" provides one example of the variety of cost-effectiveness tests utilized by one state in the region and the various cost and benefit inputs considered in the state's primary test, the Total Resource Cost (TRC) Test: https://ma-eeac.org/wp-content/uploads/Cost-Effectiveness-and-Bill-Impacts-3.13.24.pdf

11 All states in the northeast participate in RGGI and thus have a small "embedded" social cost of carbon in their energy efficiency programs as a result. This figure is focused on the "non-embedded" social cost of carbon assumed on top of that embedded cost. Additionally, based on Acadia Center review, it was not clear the assumed social cost of carbon in New York's Energy Efficiency and Building Electrification Portfolios for 2026-2030, but the New York Department of Environmental Conservation's "Establishing a Value of Carbon: Guidelines for Use by State Agencies" (2023) document suggests a "central value" of $121 per ton of CO_2 https://extapps.dec.ny.gov/docs/administration_pdf/vocguide23final.pdf

12 New York was excluded from Figure 3 because Acadia Center does not yet have access to the total benefits ($ values) or BCR data associated with the 2026-2028 NYSERDA and individual utility EE plans.

13 Acadia Center was unable to find data breaking down projected program vs. customer costs for either the Vermont 2024-2026 Triennial Plan or the VGS Triennial Plan 2024-2026. However, this breakdown was available for the year 2024 in the Vermont 2024 Annual Energy Report. The 2024 ratio of program costs vs. customer cost was used as a proxy for Figure 5. https://publicservice.vermont.gov/sites/dps/files/documents/2024%20AER%20FINAL.pdf

14 For both ratios presented in Figure 5, the benefits are calculated using the default "primary" benefits methodology of each state. Individual benefits methodologies vary across states. The calculated benefits are not generated using a universal equation across states. Additionally,

15 The Vermont BCR vs. BPBR comparison is limited to the Electric program's cost-effectiveness results and excludes both the TEPF and Gas programs. The Electric program is the only program for which Acadia Center was able to locate both BCR data and total resource benefits data.

16 For lifetime benefits per capita presented in Figure 7, the benefits are calculated using the default "primary" benefits methodology of each state. Individual benefits methodologies vary across states. The calculated benefits are not generated using a universal equation across states.

17 Vermont data in Figure 7 includes the Electric and Gas programs but excludes the TEPF program because lifetime benefits data was not available for the TEPF program.

18 For the purposes of Figure 8, all energy savings (both electricity and combustible fuels) were considered in terms of MMBtu units.

19 MassSave, "Upgrade Existing Lighting": https://www.masssave.com/business/rebates-and-incentives/lighting-and-controls/upgrade-existing-lighting

20 For Massachusetts, it was challenging to isolate the total electric program budget excluding beneficial electrification measures. The electric program planned 3-year incentive budget excluding electrification is $1.19 billion and Acadia Center estimated an overall electric budget (excluding electrification) of $1.55 billion based on an overall budget-to-incentive ratio of 1.3 in the 3-year plan.

21 ISO New England (ISO-NE), Consumer Liaison Group update presentation, March 2025: https://www.iso-ne.com/static-assets/documents/100021/clg_meeting_george_iso_new_england_update_presentation_3_27_25.pdf.

22 Figure 12 was created by Acadia Center based on a figure presented by ISO-NE in a 2024 presentation. The original graph developed by ISO-NE did not provide the underlying data or precise graph labels, so Acadia Center made precise measurements to estimate the underlying data and recreate an approximation of the original figure. https://www.iso-ne.com/static-assets/documents/100009/ne_ee_trends.pdf

23 Data on state-level GHG reduction goals compiled by Acadia Center based on state law mandating clean energy or economy-wide GHG reduction targets achieved by a specific year. Center for Climate and Energy Solutions (C2ES) maintains interactive maps that summarize state-level GHG reduction targets. https://www.c2es.org/content/state-climate-policy/

24 Massachusetts 2050 Clean Energy and Climate Plan, "Building Sector Overview", page 23 https://www.mass.gov/doc/2050-clean-energy-and-climate-plan/download

25 MassSave, "2024 Discontinuation of Rebates and Incentives for Natural Gas, Oil, and Propane Heating" https://www.masssave.com/blog/residential/discontinuation-of-rebates-and-incentives-natural-gas-oil-propane-heating-equipment