Bridging the Equity Gap for Utility Energy Efficiency Programs

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Research Report

ACEEE

About ACEEE

The **American Council for an Energy-Efficient Economy** (ACEEE), a nonprofit research organization, develops policies to reduce energy waste and combat climate change. Its independent analysis advances investments, programs, and behaviors that use energy more effectively and help build an equitable clean energy future.

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Executive summary

Note: This report was updated on July 31, 2026, to reflect data from Commonwealth Edison received after publication that showed additional spending on low-income efficiency programs. Resultant updates to the analysis yielded an increase in the overall average spending (of all utilities in the sample) on low-income programs in 2024. This increased the average share of budgets dedicated to programming for low-income populations to 14.1% and reduced the average "equity gap" to 13.8%; each change was less than 1 percentage point. ComEd-specific results were updated throughout. Additionally, the per-household savings data for Baltimore Gas and Electric was corrected, and that resulted in BGE no longer being listed in the top quartile of utilities in that category.

Key findings

- Over the past decade, large utilities across the United States steadily increased the share of their energy efficiency budgets devoted to programming for low-income populations, from an average of 9% in 2015 to 14.1% in 2024.
- Despite this increase, low-income households remain underserved by utility energy efficiency programs because there remains, on average, a 13.8% "equity gap." We define this gap as the difference between utility spending on low-income programs as a percentage of the total utility energy efficiency portfolio and the percentage of the population served that is low income. When low-income households pay into utility energy efficiency programs at a higher proportion than they access targeted services through these programs, they are subsidizing energy efficiency support that goes to higher-income customers.
- Utilities in states that set targets for low-income energy efficiency programs spent an average of $53.06 per low-income customer in 2024, more than double the $18.86 average spent per low-income customer in states without low-income investment standards.
- Utilities that invest more in low-income programs tend to have more diverse program portfolios that reach customers through a range of delivery channels, specifically target and overcome participation barriers for multifamily housing, and include health and safety investments in energy efficiency programs.
- Barriers to scaling low-income program investment and impacts include lack of supportive state policies, small and unspecialized multifamily programming, and inadequate strategies for addressing underlying structural issues homes that must be resolved before energy upgrades can safely proceed.
- We present a menu of policies, programs, and practices from which state policymakers, utility administrators, and program implementers can select to overcome these barriers. These strategies include policies that set ambitious energy savings targets and require utilities to dedicate efficiency funding to low-income customers; programs that serve multifamily housing, renters, and manufactured homes; and pairing efficiency upgrades with bill assistance.

The average energy burden across low-income households in the United States is 6%, three times higher than the estimated average 2% energy burden of households with higher incomes (U.S. Department of

Energy 2024). One strategy for reducing energy burdens for low-income households is to increase the efficiency of energy consumption in their homes. Furthermore, when efficiency upgrades are paired with switching buildings to efficient electric appliances, even greater operational savings are possible, especially for customers reliant on delivered fuels or in areas of the country with relatively expensive gas costs.

This report analyzes the scale at which 48 of the largest utilities in the United States are investing in low-income energy efficiency programs and compares it with market-rate efficiency programs to identify the extent of the "equity gap." We first share utility data from 2024 (the most recent year for which complete data are available) and describe utility spending and savings trends from low-income programs relative to broader energy efficiency portfolios. Following that, we highlight common barriers to scaling low-income program participation, including policy, programmatic, and practical challenges. The final section provides a menu of strategies and best practices gathered from expert interviews, case studies, and research reports to assist policymakers, utilities, and energy efficiency program implementers in expanding and enhancing programming options for low-income populations to close their equity gaps.

For each utility analyzed, we collected quantitative spending and savings data and calculated (1) overall spending per low-income household; (2) energy savings per dollar invested in low-income programming; and (3) relative investment in low-income programming compared with market-rate efficiency programming. In 2024, 28.2% of the U.S. population fell below 200% of the federal poverty level (FPL), the level we used to benchmark qualification for low-income programming. While there is a wide range of metrics and thresholds used to identify underserved households, we relied on FPL as a consistent standard across jurisdictions. Our equity gap is the difference between low-income population contributions to utility budgets (as a proportion of households served) and the level of investment in low-income programming by those utilities.

We found that in 2024, the utilities analyzed spent an average of 14.1% of their energy efficiency program budgets on low-income energy efficiency programs. While this is an increase from previous years,[1] most utilities continue to carry an equity gap and on average, this gap is 13.8%. Additionally, we found that on average, utilities spent $42 on efficiency programs per low-income customer in 2024. No direct correlation between high spending and high savings per low-income customer was found; this is likely the result of varying utility strategies around deep retrofits and expensive pre-weatherization and health and safety investments. State policy standards around investment levels in energy efficiency overall and low-income programs specifically also drove much of the variation in investment levels across utilities: In states that mandate low-income program investments or set targets for utilities, spending was much higher per low-income household—more than twice as high, on average, than in states that did not mandate low-income energy efficiency investments by utilities.

Some of the most challenging barriers include lack of supportive state policies for investing in low-income programming, lack of cost-effectiveness accounting strategies that account for more holistic benefits, complex administrative processes for enrolling new low-income residents, and communication strategies that are not well-tailored to reaching specific vulnerable communities. Moreover, while energy affordability is a key driver of participation in energy efficiency programs, if utility rates and energy assistance programs are not well aligned with energy efficiency upgrades, low-income customers may still be energy burdened after receiving efficiency upgrades.

[1] Utilities analyzed in this report were comparable to those assessed in ACEEE utility scorecards. For more information, see: https://www.aceee.org/utility-scorecard.

To overcome these barriers through a combination of policy, program, and practice changes, we provide a menu of options to help scale the benefits of utility low-income energy efficiency programs (table 1). These strategies are detailed using examples and case studies pulled from the literature and expert interviews, and we highlight the strategies we consider to be higher priority actions here in bold.

Table 1. Summary of policies, programs, and practices to expand the impact of low-income energy efficiency programs

Policy goal	Strategy type	Target stakeholder	Strategy
Expanding efficiency program investments	Policy	Regulators, State legislators	**Set ambitious energy efficiency savings targets and low-income investment standards**
	Policy	Regulators	Create equity metrics for accountability
	Policy	Regulators	**Incorporate broader benefits in cost-effectiveness testing**
	Practices	Utility program administrators, Regulators	**Use categorical eligibility and equivalent eligibility criteria for energy assistance programs and low-income energy efficiency programs to reduce administrative burden for customers and scale participation**
Reaching target demographics	Policy	Regulators, Legislators	Convene low-income stakeholder working groups and involve them in program design and review processes
	Programs	Utility program administrators, State agencies	Develop workforce training programs with extensive curriculum and multiple wraparound services
	Programs	Utility program administrators	Include small business programs and other equitability-focused programs for the commercial and industrial sector
	Practices	Utility program administrators, State agencies	Invest in detailed geographic, demographic, and stakeholder relationship understandings to plan engagement campaigns
	Practices	Utility program administrators	**Partner with trusted community-based organizations**
Achieving deeper savings	Policy	Regulators, Utility program administrators	Tie program performance incentive metrics to equitable outcomes
	Programs	Utility program administrators	**Design one-stop-shop programs that eliminate barriers to entry**
	Programs	Utility program administrators, State agencies	Integrate health and safety upgrades into program offerings
	Programs	Utility program administrators, State agencies	Braid funding from multiple sources to support health and safety upgrades
Better serving renters, multifamily housing, and manufactured housing	Programs	Regulators, State legislators	Support demonstrations of emerging technologies to reach multifamily housing and renters
	Programs	State agencies	Overcome split incentives between tenants and landlords using local tools
	Programs	Utility program administrators	**Develop targeted programs for multifamily housing**
	Programs	Utility program administrators	Stack and braid financing and incentives to support larger and more complex multifamily projects

	Programs	Utility program administrators	Develop programs that serve manufactured housing
	Practices	Utility program implementers	Engage building owners when they are pursuing other building upgrades
	Practices	Utility program administrators	Tailor program offerings for manufactured homes and determine whether retrofits or replacements would be more cost effective
	Practices	Utility program administrators, Regulators	Invest in building data and segmentation to better target priority needs and provide technical assistance to building owners to analyze and recommend specific opportunities
Enhancing energy affordability	Policy	Utility program administrators, regulators, state agencies	Use policy tools to align utility efficiency programs with rate design and other energy assistance tools and strategies
	Programs	Utility program administrators, state agencies	Combine energy efficiency programs with bill assistance to reduce energy burdens
	Practices	Utility program administrators	Bundle electrification with efficiency upgrades
Achieving climate goals	Policy	Regulators, legislators	Evaluate low-income efficiency programs based on greenhouse gas savings and energy savings

Amid both rising energy prices and rising energy demand, investment in energy efficiency in the United States is likely to only become more valuable for both consumers and the grid. Increasing energy efficiency budgets alongside increasing energy demand will allow utilities to expand their use of relatively low-cost demand side energy resources and thereby help to reduce the need for additional grid infrastructure or new generation sources (Specian and Aquino 2026).

Introduction

Investing in utility energy efficiency programs that support low-income populations[2] is an essential strategy for delivering long-term energy affordability for all households. Ensuring that low-income households can overcome the relatively high upfront costs of retrofitting homes and replacing inefficient electric resistance and fossil fuel-powered heating and cooling equipment unlocks the ability to reduce energy consumption and costs for these homes. Because many low-income households are renters, it is also essential that energy efficiency programs have strategies for working with property owners to deliver retrofits to rental properties. In addition to directly delivering benefits to households most burdened by high energy costs, equitable delivery of energy efficiency upgrades produces broad societal benefits by reducing health-harming climate and air pollution (Fadali et al. 2024).

The impacts of rising energy prices do not fall equally across the U.S. population. Lower-income households are disproportionately burdened: In 2019, one in four low-income households experienced energy burdens where more than 15% of their total income was paid to energy bills (ACEEE 2024a). The average energy burden across low-income households is 6%, three times higher than the estimated average 2% energy burden of households with higher income (U.S. Department of Energy 2024). Households that struggle with high energy burdens are more likely to experience energy insecurity—the inability to consistently meet basic household energy needs—and this can force them to choose between spending on essential services like food and medicine and heating or cooling their homes. Indeed, in 2024, 33% of households in the United States reported experiencing at least one form of energy insecurity, and the most common form was reducing or forgoing food or medicine to pay energy costs (U.S. Energy Information Administration 2026). Energy insecure households are also more likely to engage in energy-limiting behaviors such as setting thermostats at a lower temperature in the winter than is safe (Cong et al. 2022; Hernández 2016). This can lead to harmful impacts on health, especially for medically vulnerable residents, seniors, and young children (Siegel et al. 2024). In 2024, 13% of households reported setting temperatures at unsafe levels in their homes (U.S. Energy Information Administration 2026).

In recent years, as concerns around energy affordability rise (Dixon 2025; Walton 2026), many state legislatures and regulatory commissions have established new energy affordability policies. These include low-income discount rates, arrearage management programs, and bill credits to reduce customer energy burdens (Rosenbach and Daniel 2025). Utility energy efficiency programs also deliver energy affordability to customers by enabling low-income customers to invest in energy-saving upgrades that reduce their monthly bills. Low-income efficiency programs are increasingly also including electrification measures, and these can help residents replace fossil-fuel appliances with more efficient and less-polluting electric appliances. In many cases, especially for customers who rely on delivered fuels or live in regions with relatively high gas costs, a combination of weatherization and electrification of heating systems leads to more affordable energy bills for customers (Specian 2023). For example, a recent policy scenario study in New York demonstrated that pairing heat pump installations with home weatherization and/or retrofits would expand the proportion of households that would save money on their heating bills post-heat pump from 34% of residents to 85% of residents; this more than doubled the proportion of the population that could affordably electrify (Smith et al. 2025). Furthermore, legislation recently approved in Virginia that supports installation of heat pumps in low-income homes

[2] In this report, we use “low-income” to broadly cover any income-limited programs that utilities run, which can also include “moderate” income levels.

reliant on expensive delivered fuels is projected to yield average household savings of $1,400 per winter (Johnson and Carter 2026).

This report analyzes the scale at which utilities today are investing in low-income energy efficiency programs relative to market-rate efficiency programs, and then estimates the "equity gap." The gap is the difference between utility spending on low-income programs as a percentage of the total utility energy efficiency portfolio and the percentage of the population served that is low-income. This work is intended especially for utilities, program administrators and implementers, regulators, and state policymakers. We provide information to support benchmarking of equitable investment in utility efficiency programs and a summary of program strategies, savings outcomes, metrics of success, and supportive state policies that are correlated with a reduced equity gap and a greater share of energy efficiency bill savings delivered to low-income households.

Part I. Benchmarking the equitability of utility low-income energy efficiency programs

To understand how utility investment in low-income energy efficiency programming varies nationally, we used a combination of publicly available data, data requests to utilities, and interviews with program staff to collect quantitative data and details of program activities. We focused on the major utilities included in the most recent ACEEE utility scorecard (Specian et al. 2023), and these together accounted for 58% of U.S. electricity sales in 2024. To maintain a feasible project scope and align with the electrification goals of many states, we looked at electric energy efficiency programs only; for utilities that offer both gas and electric service, we reviewed only their electric program data. The data we present here are sourced from 2024 program year reports, the most recent year for which complete data were available from most utilities included in the most recent ACEEE scorecard. We were able to collect low-income-specific data from 48 utilities.[3] For details of the utility data included in this report, including a glossary with the full names of each utility, see the Appendix A. For each utility, we collected quantitative spending and savings data that describe the following:

- Total utility investment: annual spending on energy efficiency programming for the residential sector, multifamily efficiency programming spending, low-income programming, and low-income multifamily spending.
- Annual incremental electric energy savings from energy efficiency: savings from the entire portfolio of residential energy efficiency programming and those specific to income-limited programs.
- Total retail sales and the number of residential customers served annually. Where available, we also collected the number of low-income customers served by the utility.

From these data, we calculated the following metrics:

[3] The majority of quantitative data used in this report was sourced from utility evaluation, measurement, and verification (EM&V) reports; annual reports from utilities that correspond to the program year being analyzed; and regulatory or financial disclosures including U.S. Securities and Exchange Commission Form 10-K filings.

- Overall spending per low-income household,[4] based on the expected proportion of low-income customers in the state where the utility operates.
- Energy savings per dollar invested in low-income programming. While most utilities reported only incremental annual savings for low-income programs, for a subset of utilities (10), we also extracted lifetime low-income program savings.
- The proportion of overall energy efficiency spending that goes to low-income programming, by comparing the investment in low-income programming with investment in market-rate energy efficiency programming.

Finally, we explored some of the external factors that are potentially driving investment trends and outcomes by focusing on state-level policy related to income-limited energy efficiency investments. We describe policy impacting the structure of income-limited programs (e.g., statewide implementation models and equitable investment goals) and spending or savings targets set legislatively, which may drive some of the investment patterns observed.

[4] Given the variability in utility estimates of low-income households in their service territory, we calculated the overall state-level percentage of the population at or below 200% of the federal poverty level (FPL) and then estimated the number of low-income households in a utility service territory based on the utility estimate of total residential households served. Some states and utilities may cap low-income programs at higher or lower levels (e.g., 300% or 150% FPL) or use area median income as a metric instead of FPL. We chose 200% FPL for measuring proportional low-income populations, as this level is also a common benchmark used to determine eligibility for energy assistance programs such as weatherization assistance programs and the federal Low-Income Home Energy Assistance Program (LIHEAP).

Defining the "equity gap"

Although an average of 28.2% of the U.S. population falls below 200% of the FPL, this varies substantially by state (figure 1). Utility energy efficiency program support for low-income households and associated health and safety repairs are essential energy affordability strategies for these homes.

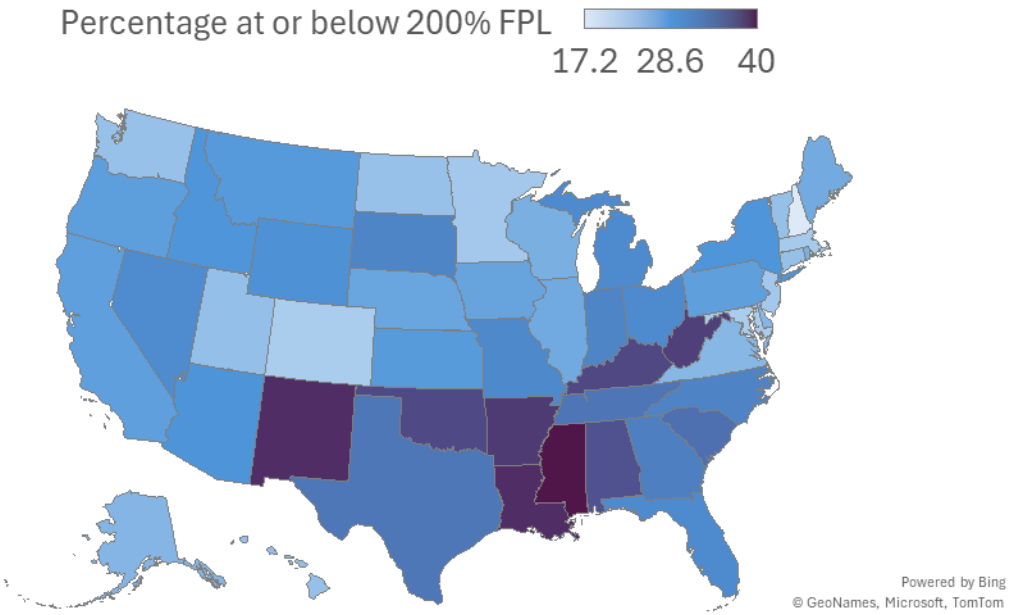

Figure 1. Percentage of the population that falls at or below 200% of the federal poverty level (FPL) by state. The FPL is the benchmark used by many utility programs and energy assistance programs to set thresholds for accessing income-limited programming. *Source*: American Community Survey 2024 data (Benson 2025).

Federal energy efficiency assistance programs that support efficiency investments and assist with bill pay, such as LIHEAP and the Weatherization Assistance Program (WAP), have been chronically underfunded and consistently lack the program dollars needed to reach all eligible households. For example, roughly 36 million households are eligible for WAP services, but only 100,000 on average are served annually (Graham 2022). When low-income households pay into utility energy efficiency programs through system benefit charges, volumetric charges, or other bill riders at a higher proportion than they receive targeted services through energy efficiency programs, these populations are subsidizing energy efficiency support to higher-income customers.

Previous research demonstrated that without specific targeting and outreach efforts to direct program benefits to low-income populations, efficiency program participation is not reflective of general population demographics. For instance, program elements such as the "buy-in cost" (e.g., the investment a household must make to be eligible for a utility appliance rebate), English-language-only program advertisement, and inaccessibility of benefits to renters can be barriers, and these can lead to untargeted utility efficiency programs in which participants are generally whiter, wealthier, and have higher educational attainment than the general population (Frank and Nowak 2016; Jacobsen 2024; Le et al. 2024).

We define the "equity gap" as the difference between low-income population contributions to utility budgets (as a proportion of households served) and the level of investment in low-income programming by those utilities. We recognize that this measure of "equity gap" only begins to meet the needs of low-

income populations, many of which live in houses and communities that have experienced many decades of disinvestment from the state and utilities that has led to overlapping and concentrated environmental burdens that are cumulative over time (Mohai and Lee 2026; Reames et al. 2019). Low-income households tend to live in older homes in greater need of retrofits and repairs (Drehobl 2020), rely on more inefficient forms of heating and cooling (Goldstein et al. 2022), and suffer from high energy burdens and risk energy insecurity as a result (Martín 2022). This can, in turn, lead to utility disconnections (Hernández and Laird 2021) or energy-limiting behavior that risks resident health and safety (Homsy and Kang 2025). To support utility administrators and policymakers in developing more equitable program portfolios, this report provides data on a minimum benchmark for low-income utility program investment.

Spending on low-income programs relative to the full energy efficiency portfolio

We surveyed 53 utilities and were able to access the desired level of low-income data for 48 of them. We found that on average, the 48 utilities spent 14.1% (median spending was 12.7%%) of their total energy efficiency portfolio on low-income energy efficiency programming in 2024. This finding continues a trend of steadily increasing proportional spending by utilities on low-income programs over the last decade (figure 2). While it is likely that low-income customers participate in other utility residential programs, utilities did not consistently collect data reflecting participation by low-income customers across programs other than explicitly income-qualified programs. We also assume that buy-in cost barriers prevent low-income residents from participating at substantial rates in market-rate programs, where participants are generally required to cover portions of efficiency upgrade costs.

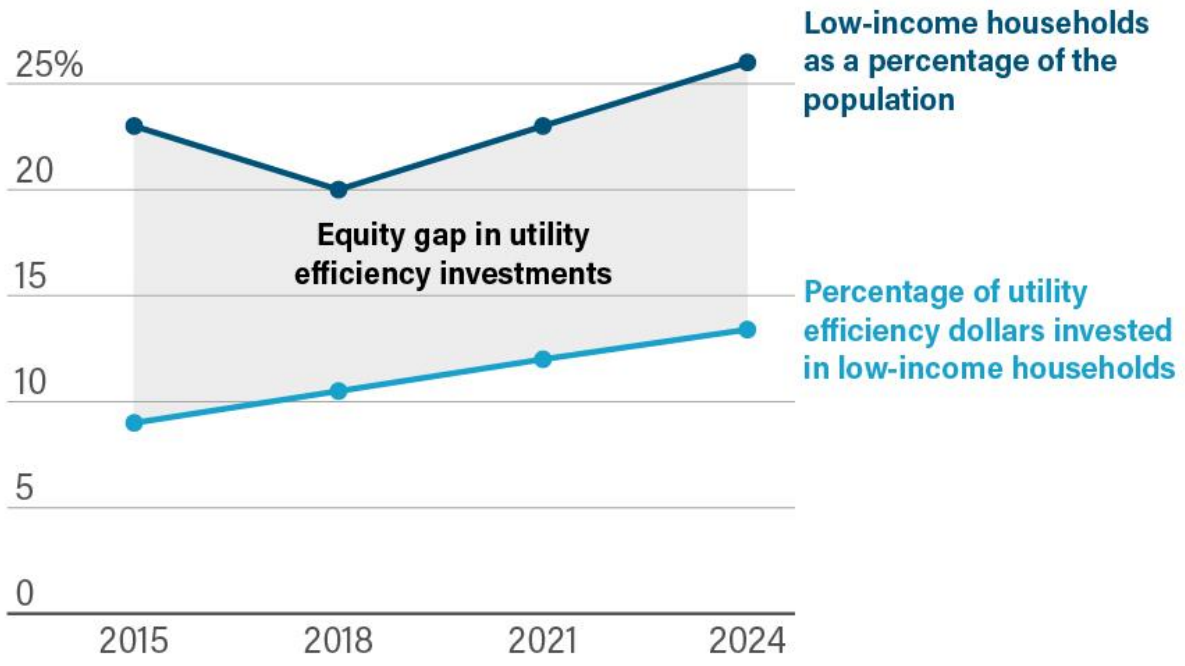

Figure 2. Results of the present analysis, for 2024, and the analysis for 2021, 2017, and 2015 from past ACEEE utility scorecards

We also found that low-income proportional spending varies with respect to total energy efficiency budgets. Much of the variation in investment levels in energy efficiency overall is likely driven by variation in state policy, which both regulates and incentivizes utility investment patterns. In table 2, we

categorize "high" low-income spending or "high" energy efficiency spending per customer as being in the top 25% across utilities surveyed. We highlight a select subset of the utilities that fell into a high spending category for either low-income programs or energy efficiency programs, overall, by dividing them into three utility spending categories:

- **Utilities leading on overall energy efficiency investment *and* low-income investment**: These utilities invested more in energy efficiency budgets relative to their overall residential customer base and invested more in low-income budgets. To enhance program equitability, these utilities should continue these investment trends while refining and improving program implementation.
- **Utilities leading on overall energy efficiency investment but lagging on low-income program investment:** These utilities have relatively high energy efficiency budgets but lower proportional investment in low-income programming. To enhance program equitability, these utilities should expand low-income program budgets relative to overall energy efficiency portfolio budgets.
- **Utilities leading on proportional low-income spending but with relatively small energy efficiency budgets:** These utilities did not have especially high energy efficiency budgets overall but invested more of those smaller budgets in low-income programming. To enhance program equitability, they should continue to invest an equitable proportion of budget into low-income programs while expanding overall energy efficiency budgets.

Table 2. Proportional investment by utilities in low-income programs versus overall energy efficiency programs

Utilities leading on overall energy efficiency investment and low-income investment
Commonwealth Edison (IL)
National Grid (MA)
Eversource (MA)
Eversource (CT)
Ameren (IL)
Utilities leading on overall energy efficiency investment but lagging on low-income investment
Los Angeles Department of Water and Power (CA)
Public Service Electric & Gas (NJ)
Xcel MN (MN)
Baltimore Gas and Electric (MD)
Puget Sound Energy (WA)
Utilities leading on proportional low-income spending that have relatively small energy efficiency budgets
Dominion (VA)
DTE Electric (MI)
We Energies (WI)
Pacific Gas & Electric (CA)

San Diego Gas & Electric (CA)
CPS Energy (TX)

Sources: ACEEE analysis of low-income program dollars spent per low-income customer within utility territory and total energy efficiency program dollars spent per utility customer, using 2024 data.

Estimating the equity gap on a per-household basis across utilities

To estimate the equity gap, we compared the percentage of low-income spending to the estimated percentage of the population that qualifies for low-income programs. Although different utilities use different standards to set qualification for their programs, we chose 200% of the FPL as our estimate, as this level is used to set qualification for federal energy assistance programs such as WAP and LIHEAP, and many utilities use eligibility for other assistance programs to categorically enroll in their energy assistance programs and low-income discount rates.

Based on this threshold, most utilities are still investing at a level lower than is equitable in their service territory (figure 3). In our assessment of utility investments, we found, on average a 13.8% gap between utility proportional investment in income-limited programming and population need. Only six of the utilities surveyed are currently investing at a level that is equal or greater to population presence.

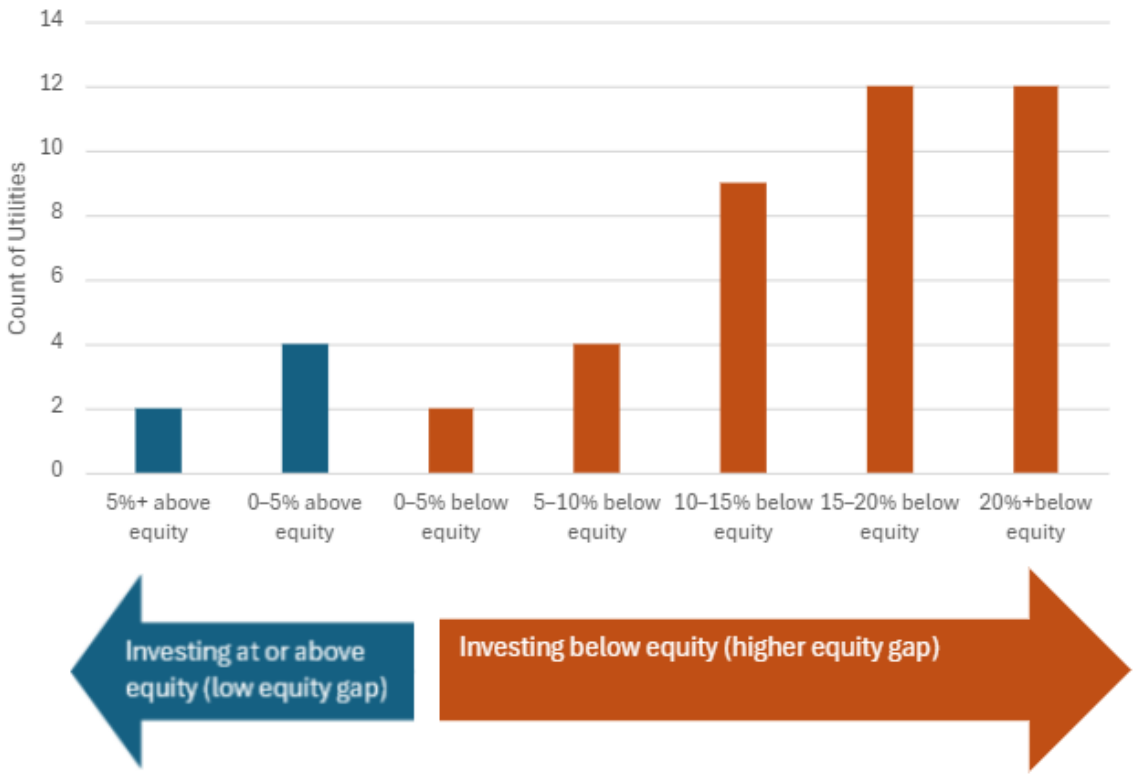

Figure 3. Our analysis shows that most utilities still have an equity gap in their investment levels in low-income programs, and the average equity gap across utilities surveyed is 13.8%

Eight utilities are investing in low-income programs at or close to an equitable rate, and of these, some are even reaching parity or investing proportionally greater funds into income-limited programming. The eight are PG&E (California), CPS (Texas), Ameren (Illinois), Commonwealth Edison (Illinois), Georgia Power, National Grid (Massachusetts), We Energies (Wisconsin), and Dominion (Virginia). Note, however, that We Energies, Dominion VA, CPS, and PG&E have relatively low overall energy efficiency budget investments when compared with the other utilities.

Variation in low-income program types and strategies

Electric utilities across the country implement a wide range of low-income energy efficiency programs. These differ not only in scale and spending, but also in how they balance accessibility, depth of savings, and long-term performance improvements. Some utilities prioritize deeper retrofits and comprehensive strategies, while others focus on low-cost, high-reach interventions that impact more customers but may not deliver the same depth of savings to individual households.

The most common low-income offerings were low-income weatherization programs (included in 20 of the analyzed utility portfolios). In some cases, the low-income weatherization program was the only program exclusively serving a utility's low-income customers. Other common low-income program offerings included low-income-specific energy efficiency marketplaces; these provide customers with the option to choose among available product rebates, lighter-touch programs such as direct-install services (e.g., relatively straightforward lighting, appliance, smart thermostat, or insulation upgrades that deliver immediate energy savings for customers), and deep or whole-home retrofits, which involve more systemic upgrades and often include energy use assessments, health and safety upgrades, and comprehensive weatherization and appliance replacements. Many utilities also operate efficiency distribution kit programs, which provide customers with sets of self-install items such as LEDs, faucet aerators, and other easy-to-install measures, often through community-based partners like food banks. Less common approaches for serving low-income customers include retail or midstream rebates, behavioral programs, targeted demand response, appliance recycling, and affordable new construction programs; these were typically layered onto core weatherization and direct-install efforts to reach customers through additional access points and delivery channels.

Low-income program types common among utilities with the highest spending and savings

Spending among the 48 utilities analyzed varies considerably. In table 3, we present the top 25% of utilities, based on low-income energy efficiency spending per low-income customer. All were well above the average of $42 (median of $19) spent annually per low-income customer.

Table 3. Utilities in the top 25% for low-income efficiency spending per customer

Utility	Low-income utility program spending per LI customer
National Grid Massachusetts	$245
San Diego Gas & Electric	$177
Eversource Massachusetts	$167
Ameren Illinois	$152
Commonwealth Edison	$127
We Energies	$83

Pacific Gas & Electric	$79
Dominion Virginia	$79
Eversource Connecticut	$77
DTE Electric	$74
Consumers Energy	$64
Baltimore Gas & Electric	$61

These top-spending utilities typically fund multiple low-income programs rather than concentrating on a single, large initiative. A consistent feature across these utilities is a direct-install component that extends beyond traditional low-income weatherization and often incorporates more advanced measures and, increasingly, multifamily-specific services. However, high spending on low-income programs does not necessarily guarantee high verified savings.

In table 4, we show the upper quartile for incremental annual savings per low-income customer, and only four of the top 12 utilities also fell into the top low-income spending per customer category. This may be because utilities that allocate a greater share of their budgets to deeper retrofits or health and safety improvements show lower immediate energy savings. However, these investments can yield more durable long-term and non-energy benefits by addressing underlying structural barriers to efficiency. For the small subset of utilities surveyed for which we were able to determine lifetime savings (see table A2 in the appendix), one utility, Consumers Energy (Michigan), was able to achieve lifetime savings at a cost comparable to broader energy efficiency program savings ($51 per MWh); in most cases, though, lifetime savings costs were well over $100 per MWh.

Table 4. Utilities in the top 25% for incremental low-income- energy efficiency savings per customer

Utility	Low-income utility incremental annual savings per LI customer (kWh)
Commonwealth Edison (ComEd)	756.16
Ameren Illinois	330.31
Consumers Energy	154.51
CPS Energy (formerly City Public Service Board of San Antonio)	98.49
DTE Electric	75.76
Ameren Missouri (Union Electric Company)	62.68
Xcel Colorado (Public Service Company of Colorado)	59.91
Duke Energy Carolinas - South Carolina (Duke SC)	55.1
PECO Energy	53.8
Tampa Electric (TECO)	51.72
Oklahoma Gas & Electric (OG&E)	48.39
National Grid Massachusetts	48.07

Notably, several of the highest-saving utilities are not among the top spenders. This underscores how effective program design and an effective delivery strategy can yield relatively strong results, even with

a more modest budget. This is especially true if these programs are able to leverage other funding sources and state partnerships and invest in deeper home retrofits while still reaching a broad range of participants (Gilleo et al. 2017). The utilities that achieved the highest total incremental energy savings typically operate portfolios that include widespread direct-install programs across both single-family and multifamily housing, retail and midstream rebate channels, and community-based distribution models that rely on local organizations to reach customers. Behavioral and educational components are also common among high-performing utilities, and these help to broaden participation and encourage sustained energy saving without high per-household incentives. Many utilities also develop partnerships with community action agencies and other community-based organizations, to support more effective program outreach and targeting.

A closer look at individual program examples helps to illustrate the diversity of approaches behind these results. Amongst higher-saving utilities, direct-install programs played a relatively large role. Commonwealth Edison, a utility achieving both high lifetime and high incremental savings in low-income programs, relies on a mix of measures and program delivery strategies to achieve cost-effective savings. LED lighting upgrades and air sealing measures, combined, delivered 60% of its first-year low-income program savings in 2024. In comparison, Commonwealth Edison's market rate residential programs used a combination of air sealing and heat pump installation to achieve roughly three-quarters of market rate residential program savings.

Utilities with higher low-income budgets but lower savings performance per customer delivered a different mix of programs. For example, National Grid and Eversource in Massachusetts focused low-income program investments primarily on weatherization, electrification of heating, and expanding equitable access to programs for renters. They also cover pre-weatherization and health and safety upgrades for both low-income and moderate-income customers that would otherwise pose a technical barrier to being able to access efficiency upgrades. Dominion Virginia, another utility with a proportionally higher low-income budget but lower per-customer savings, generated most of its savings from a mix of programs that included an income-qualified solar installation program, insulation measures, and heat pump upgrades and replacements. Additionally, over half of the program savings from weatherization and HVAC measures were generated in multifamily buildings.

While deeper retrofits can deliver greater per-household energy savings, more comprehensive programs may not be more cost effective, and there can be diminishing savings returns from deeper retrofit investments. For example, in California, utilities are piloting a more comprehensive version of their whole-home pilot program as part of their low-income serving Energy Savings Assistance program. The Pilot Plus program works toward achieving 5%–15% savings per home and the Pilot Deep program aims for 15%–50% energy savings per home. Both pilots preapprove minor home repairs to cover health and safety measures that may be necessary to move forward on efficiency upgrades or for the safety of contractors. Preliminary evaluation results show that while these projects successfully drive higher energy savings per home, they also require a much higher level of investment per home—roughly nine times the cost of a typical low-income efficiency project—and generate two-and-a-half times the energy savings (Gleicher and Reyes Lagunero 2025). Additional evaluation results are expected in the coming years, but overall, early results point toward diminishing energy savings returns for comprehensive, whole home packages. Note, though, that this is balanced out by some promising savings for investments in specific subprogram measures, like HVAC.

Overall, the data show that neither high spending alone, nor a single overarching model guarantees delivery of low-income portfolios that meet community needs while achieving utility spending, savings, and equitable delivery goals. Balancing deeper per-customer savings with broadened participation and

cost-effective savings relies on several core characteristics that distinguish the low-income portfolios of utilities that are investing more equitably:

1. **A willingness to invest in deeper measures that deliver long-term benefits.** Rather than focusing solely on quick-return savings, these utilities also allocate resources for whole-home retrofits and other comprehensive upgrades that improve comfort, reduce energy burden, and enhance building performance over time.
2. **Balanced program design that combines accessible entry points with deeper retrofit offerings.** Utilities pair easy-to-access measures like retail or community-distributed products with options for more comprehensive upgrades to achieve the best balance between program reach and lasting impact.
3. **Integration of health and safety investments in energy efficiency programs**. Some utilities record lower energy savings per customer because a portion of their spending supports critical health and safety work. However, this approach helps build the foundation for sustained improvements in comfort, resilience, and long-term improved energy performance in low-income homes.
4. **Diversified portfolios that reach customers through multiple delivery channels.** These utilities avoid relying on one dominant program type and instead offer a mix of direct-install services, retail and midstream rebates, deep or whole-home retrofits, and community-based distribution strategies that together reach a wider share of eligible customers.
5. **Targeted efforts to overcome participation barriers in multifamily housing.** High-performing utilities invest specifically in multifamily-focused programs such as direct-install initiatives, weatherization services, and affordable housing partnerships to address the structural and ownership barriers that often limit the participation of low-income renters.

State policies that impact investment in low-income utility energy efficiency programs

Policies that mandate levels of spending or savings for low-income programming

We examined state public utility commission and legislative requirements for utilities to fund or offer low-income energy efficiency programs to ratepayers. While most states have some form of requirement, the specifics vary. In some states, including Oklahoma and Iowa, utilities are simply required to offer low-income programs or allocate funds to them, and there is no mandated investment level or savings target. Other states, like Illinois, set requirements to spend a specific dollar amount or percentage of the utility's annual portfolio on low-income programs. Specific requirements are generally set based on a required dollar amount, a percentage of the budget, required energy savings or energy reduction, more specific target outcomes, or according to revenue-based requirements (table 5). These targets are sometimes informed by research that documents the distribution of energy burden, geography of disadvantaged communities, or other demographic metrics that can be used to identify the level of investment need by utilities and track outcomes and benefits by community (e.g., Efficiency Vermont 2025).

Table 5. State strategies for mandating low-income efficiency spending by utilities

Investment metric	Description	Example
Required dollar amount	Utilities must spend a minimum fixed dollar amount annually on low-income energy efficiency programs.	In Illinois, utilities must invest a minimum, legislatively mandated dollar amount annually in low-income energy efficiency programs; it is currently set at 25% of energy efficiency budgets.
Required percentage of budget	Utilities must allocate a specific percentage of their energy efficiency budget to low-income programs.	The 2008 Green Communities Act in Massachusetts set up a requirement that a minimum of 10% of electric utility program funds must be spent on low-income energy efficiency programs.
Required energy savings/energy reduction	Utilities must achieve a specific amount or percentage of energy savings from low-income programs	Pennsylvania utilities have a requirement to obtain at least 5.8% of their total energy consumption reduction target from low-income programs. In Maryland, there is an allocated portion of greenhouse gas savings that is required from low-income energy efficiency programs, to meet statewide climate goals.
Outcome targets	Utilities are required to meet specific performance targets for the reach and impact of their programs.	In Washington, utilities must design energy efficiency programs to meet at least 60% of the state's energy assistance need by 2030 and 90% by 2050. This is in addition to a general requirement that utilities offer low-income programs, though no minimum funding level is specified.
Revenue-based requirement	Utilities must spend a percentage of residential revenue on low-income energy efficiency programs.	In Minnesota, utilities are required to spend at least 0.2% of residential electric revenue and 0.4% of residential gas revenue on low-income energy efficiency programs.
Technology/program-specific requirements	Some states require utilities to allocate a set portion of their low-income budget to technologies like heat pumps or other electrification measures, or to specific delivery models like weatherization.	In New York, utilities must dedicate at least 80% of their low-income energy efficiency portfolio to whole-building weatherization programs.

In states that mandate low-income programs, utilities spend substantially more on low-income households than utilities in states that do not mandate these investments (figure 4). Of the states that require utilities to offer low-income programs, most also set some level of minimum investment. Only 4 of the 18 states that mandated low-income programs—Iowa, Oklahoma, South Carolina, and New Jersey—did not also set a minimum investment standard. On average, utilities in states that set low-income investment targets spent $53.06 per low-income customer, more than double the $18.86 spent per low-income customer in states without low-income investment standards.

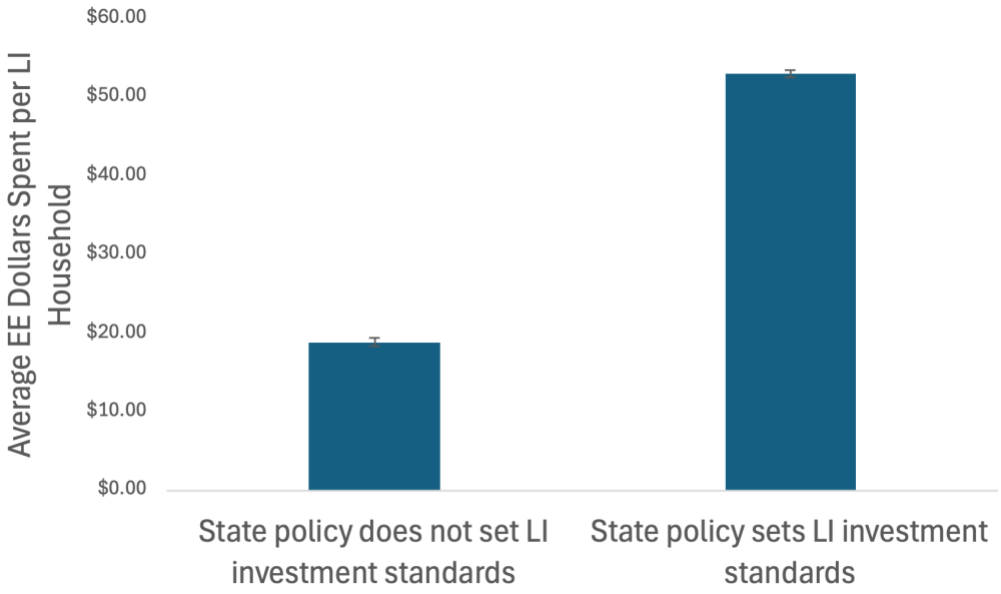

Figure 4. Comparison of investments in states that mandate utility investment in low-income programs and those that do not. Error bars represent the standard error for each group.

We also see that setting low-income investment standards is highly correlated with having established energy efficiency resource standards (EERS), a state policy tool that sets specific, long-term targets for energy savings. Of the 31 states that host utilities examined in this study, 20 had EERS in place, and of those, 15 also mandated low-income programs. The five states that have EERS in place but do not also mandate low-income programs are Arkansas, Arizona, North Carolina, Washington, and Wisconsin. Notably, three states (Iowa, Oklahoma, and South Carolina) do not have EERS in place but do mandate low-income utility programs. In many cases, utilities exceed investment minimums; for instance, National Grid in Massachusetts more than doubled the required 10% low-income energy efficiency program spending in its 2024 budget. However, in some states (e.g., Wisconsin) there are funding caps on efficiency program spending and utilities may not be able to improve performance beyond mandated levels. In such cases, legislative intervention would be needed to expand program spending.

Policies that dictate the structure of low-income energy efficiency programs in the state

In addition to policies that mandate the existence of low-income energy efficiency programs and set investment levels, there are several states that dictate the structure of their income-qualified program offerings. These often require utilities to coordinate with state agencies, contribute to centralized programs funds, and/or implement standardized program models to ensure consistency, equity, and accountability in how services are delivered. For example, in some states, utilities are required to implement specific program models or follow state-mandated structures. The New Jersey Board of Public Utilities (NJBPU) requires utilities to administer the Comfort Partners program, a fully standardized, no-cost energy efficiency program for income-eligible households. The NJBPU set statewide design, funding, and delivery protocols, and utilities coordinate program administration to provide qualifying customers with home energy assessments and upgrades including insulation, air sealing, and HVAC improvements.

Some states establish state-administered programs that are funded by utilities. In these cases, utilities pay into a centralized fund or transfer funds to a state agency that delivers the programs. For example, in Maryland, utilities fund low-income energy efficiency programs, but the state's Department of Housing and Community Development (DHCD) administers them. DHCD uses the pooled utility funds to provide income-eligible households with no-cost measures such as insulation, air sealing, appliance upgrades, and health and safety repairs.

In some regions, program structure is dictated by local policy, not state law. For example, in San Antonio, the city council governs CPS Energy's Sustainable Tomorrow Energy Plan (STEP) and sets the overall structure and funding allocations; nearly 28% of STEP's multi-million-dollar budget is dedicated to low-income programs. CPS Energy is a municipal utility, rather than an investor-owned utility (most of the regulated utilities examined in this report are investor owned), and thus it is in a different regulatory environment.

There are also states that coordinate utility program delivery with federal or state weatherization. Utilities are required to coordinate with state WAP or LIHEAP, even if they administer their own programs. For example, under Wisconsin Statute Section 16.957, investor-owned utilities collect a low-income assistance fee from customers, remit these funds to the state-administered public benefits fund, and the Wisconsin Department of Administration uses them to support the Wisconsin Home Energy Assistance Program (WHEAP) for bill payment support and the state weatherization assistance program for energy efficiency upgrades in income-eligible homes.

Part II. Barriers to scaling low-income program budgets and impacts

Absent intentional effort, efficiency upgrades tend to preferentially go to whiter and wealthier homeowners and leave lower-income renters and racial and ethnic minority-headed households underserved (Jacobsen 2024; Frank and Nowak 2016). This is due to a combination of structural obstacles, including upfront or "buy in" costs, a greater need for pre-weatherization health and safety investments in many homes, and a higher proportion of renters than higher-income populations, which leads to a struggle with landlord/tenant "split incentives." A legacy of racially discriminatory housing practices and inequitable grid infrastructure investment patterns also contributes to inequitable patterns of energy burdens. For example, a study in Kansas City, Missouri, found that census block groups with lower median incomes, higher percentages of households below the poverty level, a higher percentage of racial or ethnic minority-headed households, and a higher percentage of adults with less than a high school education were living in less efficient homes with higher energy use intensities (i.e., energy consumption normalized by building size; Reames 2016). Immigrant and non-white households are more likely to be renters; they tend to live in older, less efficient homes with higher energy use intensities; and they experience higher rates of blackouts (Goldstein et al. 2022; Sovacool et al. 2024). Furthermore, a recent study found that utility customers in primarily non-white communities paid higher energy prices but consumed less energy than those living in white communities (Kirsht et al. 2025).

The barriers to delivering low-income utility programs at a scale that overcome equity gaps are a mix of policy, programming, and practice challenges, and in this section, we identify some of the major barriers to more equitably achieving the following common utility program goals: (1) expanding efficiency program investments, including to serve low-income populations; (2) reaching target demographics and key population demographics that are currently underserved by utility efficiency programs; (3) achieving

deeper energy savings through efficiency programs, especially through well-designed comprehensive retrofit programs; (4) better serving multifamily housing and renters, groups that are less likely to be well-served by market rate efficiency programs due to unique structural and financial barriers; (5) ensuring efficiency investments enhance energy affordability, reduce grid costs, and contribute to reduced energy burdens; and (6) achieving climate goals by ensuring that low-income households have equitable access to electrification programs.

Disincentives to investing in low-income efficiency programs

Shifts in legislative or regulatory policy goals are often required to expand investment in low-income efficiency programs. Utilities are typically incentivized to deliver the greatest savings possible at the lowest price, and this does not align with the needs of low-income households that require greater financial support than market rate utility energy efficiency rebate programs provide. In states that do not set low-income program investment targets or requirements, utilities are likely to be more inconsistent in their development and delivery of low-income programs (figure 4). Many states also lack utility performance metrics that track and incentivize equitable program investment or otherwise alter the core business model that disincentivizes investment in more expensive or targeted efficiency programs. Many utilities also encounter administrative barriers to enrolling eligible low-income households in efficiency programs. Fragmented funding sources can also prevent customers from accessing funds for which they qualify, because it becomes more difficult to identify and enroll in all the relevant programs. Many states lack simplified enrollment policies or centralized delivery strategies for related energy efficiency and energy assistance programs that differ in what portion of customer projects they can cover (e.g., while some funding sources may be able to pay for health and safety investments, others may not).

Barriers to successfully reaching target demographics

There is not a single communication or outreach strategy that will reach all low-income households equally well in any given utility territory. Adequately reaching a representative portion of the population requires a mix of outreach strategies that are tailored to the unique mix of communities served by each utility. While income levels are used to determine eligibility for programs, household needs and the way they are likely to interact with utilities or program implementers will vary by a wide range of additional demographic factors. Household energy burdens are higher not just in lower-income populations, but also in racial and ethnic minorities, rural communities, for renters, in immigrant communities, for senior citizen heads of households, for households with young children, and for households with critical medical needs or disabilities (Homsy and Kang 2025; Graff et al. 2021; Drehobl et al. 2020; Scheier and Kittner 2022). Many utilities also struggle to overcome trust barriers, as customers may not believe that programs are free or reliable, or do not consider the utility a trusted messenger (Durand 2018).

Overinvestment in shallow savings measures

Cost-effectiveness tests that are inflexible or restrictive and do not incorporate non-energy benefits can prevent utilities in some states from investing in health and safety improvements or other pre-weatherization activities, even though these would enable later efficiency investments or deeper retrofits while delivering proven benefits to households outside of direct energy savings.

Additionally, there is a programming challenge around striking the right investment balance between maximizing participation and maximizing individual household savings, and many utilities concentrate funding in only one type of program. Utilities can deliver programs that are relatively low-cost but wide-reaching: Home energy report behavioral programs are cost effective and relatively easy to deliver

widely but lead to average household savings of only around 1%–2% (Sussman et al. 2025). Or, utilities can focus on maximizing individual savings through more expensive comprehensive retrofits that lead to deep savings for individual households but reach fewer households: Comprehensive weatherization can lead to 20%–25% energy savings per home, but at a much higher price tag per home (Turek-Hankins et al. 2026).

Programs that cover pre-weatherization expenses are also often limited. Older housing stock and homes that have not been consistently maintained are more likely to be deferred from energy efficiency programs due to health and safety and pre-weatherization upgrade needs that utility programs may not be funded or permitted to handle on their own. For example, a 2024 survey of federally funded Weatherization Assistance Program (WAP) grantees found that one in five homes were deferred from the program due to the need for home repairs or upgrades such as building envelope damage, unsafe electric panels or wiring, plumbing issues, and contamination by pests, mold, or asbestos (Farrell et al. 2025). Even if efficiency programs can cover the pre-weatherization and health and safety needs of a home, the additional cost per unit means that fewer homes can be served and lower energy savings will be achieved by low-income programs without budget increases or pulling from other non-ratepayer funding sources like state appropriations. Additional burden is placed on utility programs to cover pre-weatherization barriers and health and safety upgrades when federal programs are not consistently available to fill gaps. This has become more acute as a result of recent federal disruptions to energy assistance programs, which is layered on top of chronic underfunding of these programs (Drehobl 2020). High levels of deferral of homes from weatherization programs can slow the rollout of projects and may result in utility low-income programs spending less than their projected budgets (e.g., Ridlington 2023).

Workforce and supply chain challenges can also be a barrier to delivering effective utility energy efficiency programs (Hargreaves 2025; Srivastava et al. 2025). Increasing costs for materials, supplies, and labor can lead to reduced benefits from set utility budgets, and constraints on the availability of contractors can also stall program growth. In rural communities, availability of contractors and the cost to travel to more remote households can also add to program costs and limit program reach. Additionally, when contractors are not already known in the communities they serve, there can be trust barriers between residents and the utility workforce that lead to customers declining to participate in programs.

Challenges specific to renters, multifamily housing, and manufactured housing

Utilities that lack specially designed and targeted programs to serve renters, multifamily housing, and manufactured housing are unlikely to be able to meet the needs of each customer segment. While many utilities have a multifamily or renter-focused program in their portfolio, in practice, these programs are often relatively small when compared with single-family portfolios and frequently do not include comprehensive retrofit projects that can deliver deep savings to renters. Home ownership varies by income level; while most households with income of greater than $50,000 per year own their homes, less than half of households making less than $50,000 own their homes (Board of Governors of the Federal Reserve System 2025). Thus, an inability to successfully scale efficiency programs for renters and multifamily buildings disproportionately impacts low-income populations. Half of the residents of manufactured homes are low income, and they also require a careful balance of retrofits and replacement strategies; programs especially targeted to this building segment are needed (Bell-Pasht 2023a).

There are also many practical challenges related to the delivery of effective energy efficiency programs for renters and for multifamily buildings (Samarripas and York 2019). Split incentives between renters and building owners may slow the uptake of efficiency investments (Giles 2024), and outreach to building owners may be complicated by program budget requirements to engage with the low-income communities directly as opposed to landlords, or by communication approaches that do not develop targeted messaging strategies for building owners (Ross et al. 2016). The cost of large retrofit projects for multifamily buildings will often exceed utility program budgets and thus require stacking of funding sources (Sudyka and Drake 2024). Additionally, emerging efficient electric technologies that are more suitable for small apartments like window heat pump units are still mostly being deployed through small pilots in U.S. utility programs, and this limits access for renters (Takemura 2025).

Uncoordinated energy affordability strategies

While efficiency investments can lead to long-term reduction in customer energy bills, utilities are not able to reach all homes in need of efficiency upgrades. A lack of alignment between efficiency programs and other forms of energy assistance support like bill payment assistance programs can lead to customers continuing to suffer under high energy burdens, even after energy efficiency upgrades are completed.

Barriers to robust low-income electrification programming

Decarbonization goals cannot be achieved without also reducing carbon emissions from low-income households. Electrification, one of the most straightforward paths to reducing carbon emissions from buildings, delivers additional benefits to households beyond carbon and energy savings, including reduced indoor air pollution from the elimination of fossil fuel combustion sources (e.g., furnaces fueled by gas, oil, or propane or gas stoves) and improved thermal comfort. Particularly for homes that rely on delivered fuels (oil or propane) to heat their homes, winter heating costs can be reduced substantially by switching to electric heat pumps for heating. Ensuring that low-income households can overcome the upfront financial barriers to electrification ensures that the benefits from actions to achieve climate goals are distributed more equitably. A financial barrier to electrification upgrades that is often cited is the need for electric panel upgrades before adding additional electric appliances. Policy barriers to equitable achievement of climate goals include fuel-switching prohibitions that can prevent households with gas heating from being served if low-income energy efficiency programs are only offered by electric utilities. States employ a mix of fuel-switching prohibitions, incentives, or guidelines that determine when it is or is not allowed (ACEEE 2022). Additionally, when states do not incorporate non-energy benefits into cost-effectiveness testing, electrification programs are unlikely to be deemed cost effective for utilities to deliver.

Part III. Strategies for closing the equity gap

This section presents 25 best practices and associated exemplary case studies that we gathered from expert interviews, secondary data collection, and a summary of findings and case studies from previous ACEEE reports (table 6). While not exhaustive, this menu of options highlights many of the key policies, programs, and practices that we see being assembled to support scaling low-income program spending and savings.

This provides utility program administrators, regulators, and state policy leaders with an overview of the range of strategies and best practices for low-income programming that utilities engage in today. As utilities identify gaps in their own programming and seek to expand either program reach or the energy

savings achieved, we encourage them to utilize this "menu" of potential options. We also highlight state policies that can unlock greater utility opportunities, and these require legislative or regulatory action to implement.

These recommendations are sorted into three categories:

- **Policies**: steps that regulators, legislators, or state agencies can take to implement policies that are supportive of delivering impactful and equitable low-income energy efficiency programs.
- **Programs**: steps that utilities and program administrators can take to design effective and equitable programs
- **Practices**: steps that program implementers can take to ensure that programs are delivered effectively and achieve their goals.

We further group the impact of these policies, programs, and practices according to their primary relationship to the following overarching barriers and goals described in Section II:

- Expanding efficiency program investments
- Reaching target demographics
- Achieving deeper savings
- Better serving multifamily housing and renters
- Enhancing energy affordability
- Achieving climate goals equitably

Finally, each policy, program, and practice is categorized based on the primary stakeholder group that is responsible for taking action to implement it. We also highlight in **bold** a handful of strategies that we consider to be higher priority actions than others.

Table 6. Summary of policies, programs, and practices to expand the impact of low-income energy efficiency programs

Policy goal	Strategy type	Target stakeholder	Strategy
Expanding efficiency program investments	Policy	State legislators	**Set ambitious energy efficiency savings targets and low-income investment standards**
	Policy	Regulators	Create equity metrics for accountability
	Policy	Regulators	**Incorporate broader benefits in cost-effectiveness testing**
	Practices	Utility program administrators, regulators	**Use categorical eligibility and equivalent eligibility criteria for energy assistance programs and low-income energy efficiency programs to reduce administrative burden for customers and scale participation**
Reaching target demographics	Policy	Regulators, legislators	Convene low-income stakeholder working groups and involve them in program design and review processes
	Programs	Utility program administrators, state agencies	Develop workforce training programs with extensive curriculum and multiple wraparound services
	Programs	Utility program administrators	Include small business programs and other equitability-focused programs for the commercial and industrial sector

	Practices	Utility program administrators, state agencies	Invest in detailed geographic, demographic, and stakeholder relationship understandings to plan engagement campaigns
	Practices	Utility program administrators	**Partner with trusted community-based organizations**
Achieving deeper savings	Policy	Regulators, utility program administrators	Tie program performance incentive metrics to equitable outcomes
	Programs	Utility program administrators	**Design one-stop-shop programs that eliminate barriers to entry**
	Programs	Utility program administrators, state agencies	Integrate health and safety upgrades into program offerings
	Programs	Utility program administrators, state agencies	Braid funding from multiple sources to support health and safety upgrades
Better serving renters, multifamily housing, and manufactured housing	Programs	regulators, state legislators	Support demonstrations of emerging technologies to reach multifamily housing and renters
	Programs	State agencies	Overcome split incentives between tenants and landlords using local tools
	Programs	Utility program administrators	**Develop targeted programs for multifamily housing**
	Programs	Utility program administrators	Stack and braid financing and incentives to support larger and more complex multifamily projects
	Programs	Utility program administrators	Develop programs that serve manufactured housing
	Practices	Utility program implementers	Engage building owners when they are pursuing other building upgrades
	Practices	Utility program administrators	Tailor program offerings for manufactured homes and determine whether retrofits or replacements would be more cost effective
	Practices	Utility program administrators, regulators	Invest in building data and segmentation to better target priority needs and provide technical assistance to building owners to analyze and recommend specific opportunities
Enhancing energy affordability	Policy	Utility program administrators, regulators, state agencies	Use policy tools to align utility efficiency programs with other energy assistance tools and strategies
	Programs	Utility program administrators, state agencies	Combine energy efficiency programs with bill assistance to reduce energy burdens
	Practices	Utility program administrators	Bundle electrification with efficiency upgrades
Achieving climate goals equitably	Policy	Regulators, legislators	Evaluate low-income efficiency programs based on greenhouse gas savings and energy savings

Expanding efficiency program investments

Policy: Set ambitious energy efficiency savings targets *and* low-income investment standards

The most consistent policy driver of robust low-income utility energy efficiency programs is the presence of both ambitious energy efficiency savings targets and standards for low-income program investments. Over half of U.S. states set statutory EERS, and the most ambitious savings levels are over 2.5% annual incremental savings. Further, of these states, 23 also include targets for either low-income program savings or spending. On the more ambitious end, six of these states aim to have at least 25% of utility program spending serve low-income customers (Mah et al. 2025). Recall that our analysis found that utilities in states that did not set low-income program investment requirements dedicate an average of $18.86 of efficiency spending per low-income customer, while states that set low-income investment targets on average spend more than twice as much, $53.06 per low-income customer.

Policy: Create equity metrics for accountability

Utilities can demonstrate their commitment to serving vulnerable communities by establishing equity metrics. These can use either broad goals or interim targets that benchmark the extent to which utility programs and practices are resulting in more equitable distribution of benefits. Advancing equity during the planning process and during program implementation can ensure a fairer distribution of energy efficiency benefits. This can take the form of consulting with communities throughout the planning process, engaging with stakeholder advisory groups to identify and set metrics, or conducting targeted research to establish reliable benchmarking data and ensure that utilities are working to address the needs of key demographics. Metrics selected to drive accountability may include spending or savings goals for low-income programs. Metrics can also focus on impacts and outcomes of programs, and can be tied to performance incentive mechanisms, or PIMs (Yatsuhashi and Batsaikhan 2025). Some states also seek to limit energy burdens for customers and tie program goals either to the reduction of energy burdens in key demographics or to the delivery of weatherization specifically to energy burdened customers (ACEEE 2023). This ensures that services are delivered more equitably *and* contribute to improved affordability for customers.

Some states have also developed equity metrics that specifically focus attention on customer groups that are uniquely underserved by utility energy efficiency program offerings. For example, Efficiency Vermont, the statewide administrator for a utility-funded energy efficiency program, wrote an equity research report in 2022 that focused on the intersection between equity and environmental justice. Through this research process, the organization developed a detailed list of metrics meant to identify and target efficiency investments at the neighborhood-scale census block groups most vulnerable to energy insecurity, and they have set minimum performance standards based on spending and savings targets at the county level (Efficiency Vermont 2025).

Policy: Incorporate broader benefits within cost-effectiveness testing

Including the non-energy benefits of energy efficiency projects in cost-effectiveness testing can help to remove barriers to utility investment in deeper home retrofits while better reflecting the social purpose behind low-income energy efficiency programs. Without a more holistic accounting of benefits, many key low-income measures, including health and safety and pre-weatherization investments, might not meet the cost-effectiveness standards of market rate efficiency programs, which often focus only on energy savings benefits.

Beyond energy savings, efficiency interventions can also improve health in multiple ways, from reducing exposure to extreme heat and cold through air sealing to preventing trip and falls through efficient lighting installation (Hayes and Gerbode 2020). These improvements are particularly important for low-income households and communities of color, whose homes may suffer from sparse insulation, inefficient lighting, and poorly operating HVAC systems (Lewis et al. 2020). Utilities that do not account for health impacts when evaluating their programs or running cost-effectiveness tests may undervalue

their low-income energy efficiency portfolios. Indeed, quantifying these non-energy impacts provides a more balanced picture of the costs and benefits of low-income energy efficiency programs. This is important because such programs tend to be more expensive to deliver on a per-household basis, particularly those that incorporate health and safety or pre-weatherization measures (Mah and Sussman 2023).

States vary in their choice of cost-effectiveness tests and the types of non-energy impacts that they measure. While 24 states exempt or modify cost-effectiveness testing in some way for low-income programs, only eight states explicitly incorporate health and safety benefits in their primary cost-effectiveness test metric, through measure-specific rules or via adders (ACEEE 2025). For example, Delaware accounts for health and safety benefits only in its low-income weatherization programs, and it uses metrics developed by Massachusetts (Hawkins et al. 2016). While Delaware does not count the avoided death values that are part of Massachusetts' tests, Delaware includes estimated costs of avoided emergency department visits or hospitalizations from asthma, thermal stress, carbon monoxide poisoning, and home fires. They also estimate the income loss from missed days at work and rely on national weatherization program statistics to parameterize their state programs. These approaches range from exempting low-income programs from cost-effectiveness tests altogether, to excluding expenses for health and safety investments from cost calculations, or increasing the value ascribed to non-energy benefits delivered by low-income program measures. For additional cost-effectiveness testing information, the National Energy Screening Project hosts a wide variety of manuals and resources, as well as providing training and certification opportunities for stakeholders planning, assessing, or evaluating distributed energy resources, including energy efficiency programs (National Association of State Energy Officials 2025).

Accounting for the health outcomes resulting from energy upgrades in cost-effectiveness tests allows utilities to maximize the total benefits they deliver to low-income participants. For example, in Maryland, the Green & Healthy Homes Initiative's Whole House Approach offers comprehensive health and safety repairs in addition to energy efficiency improvements. The program reported notable energy savings, with $30,000 in energy cost savings between 41 households served. It also reported a 60% drop in Composite Asthma Severity Index scores 12 months after households received retrofits (ACEEE 2024d).

Practice: Use categorical eligibility and enrollment data from other energy assistance programs to reduce administrative burden for customers and scale participation

Categorical eligibility aims to increase participation in low-income energy efficiency programs by reducing administrative effort for customers. If, for example, eligible customers are automatically approved for participation in low-income energy efficiency programs if they already receive assistance from other programs, this increases program awareness and reduces friction for participants. Indeed, LIHEAP—a federal assistance program that can provide energy efficiency upgrades and direct bill assistance—has categorical eligibility options that are enabled in 20 states and three territories for 2026, based on participation in other federally funded assistance programs like the Supplemental Nutrition Assistance Program (LIHEAP Clearinghouse 2025). Maryland's Office of Home Energy Programs, part of the state agency that also runs low-income energy efficiency programs for the state, implemented categorical eligibility for its programs in 2024 and achieved a 70% increase in applications compared with the previous 10-year baseline; even after correcting for duplicate applications, 2025 remained 22% higher than the baseline (Baker 2025). In California, a recent study of state categorical eligibility practices for utility low-income programs assessed eligibility alignment across programs and highlighted the certification pathways that have been most successful for identifying eligible participants for utility

income-qualified programs (Evergreen Economics 2023); it also identified additional means-tested programs that could also be included and examined the viability of program autoenrollment.

Reaching target demographics

Policy: Convene low-income stakeholder working groups and involve them in program design and review processes

It is not enough for utilities to simply inform community members about an energy efficiency program. To meet the standards of procedural equity, impacted communities need to be involved in shaping program design as key stakeholders, ideally by having a formal role in the decision-making process. The range of perspectives that a diverse set of stakeholders bring to energy efficiency program design and delivery challenges can help to overcome or avoid barriers and improve program outcomes (U.S. Department of Energy 2016). The role of low-income stakeholder working groups can be codified through legislation and through regulatory decision-making. Some states, such as Massachusetts, set the goals and membership requirements for energy efficiency advisory councils through legislation. Other states have working groups that are convened and managed by regulators, or by the utilities themselves. Some states also provide stipends that pay for the time of stakeholders, such as community-based organizations, as this can enhance the participation rates of key members. In 2024, Massachusetts program administrators adopted over 90% of stakeholder recommendations in their 2025–2027 Energy Efficiency and Decarbonization Plan. The state's Equity Working Group, a subcommittee of the Energy Efficiency Advisory Council that works to increase program participation in energy efficiency, contributed to this feedback. Recommendations included determining criteria for designated equity communities, increasing funding for the Community First Partnership, and spending 15% of dollar volume of direct Mass Save contracts with diverse suppliers (Mass Save 2024).

Program: Develop workforce training programs with extensive curriculum and multiple wraparound services

Lack of available skilled and trusted contractors to deliver energy efficiency programs can be a barrier to expanding program reach. As several factors can limit contractor participation and performance, there are multiple strategies to overcome distinct challenges. To address community trust and ensure a sufficient number of contractors are available, utility energy efficiency programs often invest in workforce training programs that prioritize hiring and training candidates from underserved communities, to ensure that the workforce represents the community it serves (He 2024). The clean energy workforce needs individuals who can meet multiple challenges (e.g., rising energy demand, extreme weather events) while deploying new technologies. At the same time, such workers need to develop soft skills like critical thinking that can prepare them for long-term careers (Srivastava et al. 2025). Contractors who work in their own neighborhoods and are familiar to residents can be more effective messengers and improve the ability for utilities to work successfully with underserved communities.

To reach and train more workers from disadvantaged communities, programs can offer wraparound services that meet individuals' needs and remove barriers to participation. A lack of reliable transportation is a common obstacle that inhibits participation. In response, the Center for Energy and Environment and Xcel Energy's Workforce Development and Education program offers weekly transportation stipends to help participants complete training. The program also partnered with Uber to provide rides for participants to access contractors' sites away from the city center. This service contributed to the program exceeding its original goal of participant internship completion (Gregory Bauhof, program coordinator, Center for Energy and Environment, pers. comm., May 6, 2024).

Another exemplary model for energy efficiency workforce training is the Emerald Cities Collaborative E-Contractor Academy workforce training program, which provides regionalized free trainings meant to build the capacity of small and disadvantaged businesses in the energy efficiency, building electrification, and renewable energy fields. Some utilities also provide direct support to local trade schools or community colleges; one example is a recent investment by Duke Energy in North Carolina to expand energy contractor pipelines to meet growing grid infrastructure needs and help students overcome financial barriers to joining energy fields (Duke Energy 2026).

Program: Include small business programs and other equitability-focused programs for the commercial and industrial sector

Some utilities have developed programs that specifically target businesses located in underserved communities. This can include focusing on small businesses that may need additional support with the administrative burden of enrolling in efficiency programs. For example, Entergy Louisiana ran an income-qualified small commercial pilot program in 2024, and it will expand in future years as a result of its initial success. ComEd, in Illinois, has offered additional incentives for energy efficiency projects in underserved communities across many of its C&I programs. The ComEd Small Business Offering has seen 30% of its savings targets from projects in underserved areas in recent years (Steven LaBarge, ComEd, pers. comm June 30, 2026).

Practice: Partner with trusted community-based organizations

Community-based organizations that work in vulnerable communities are valuable partners for both program design and implementation. Representatives of these organizations can bridge trust and communication gaps between utilities and community members, ensuring that all voices are heard. In Massachusetts, the Community First Partnership is a coalition of utilities, municipalities, and community-based organizations that work to increase participation in Mass Save's energy efficiency programs. Recruitment efforts focus on environmental justice communities, nonnative English speakers, and other underserved communities (Mass Save 2025a; Samarripas et al. 2024). The partnership reached 52 communities from 2022 to 2024, and this resulted in over 27,500 weatherization upgrades and 35,000 heating and cooling upgrades (Mass Save 2025a). Another notable partnership strategy comes from the Energy Trust of Oregon, the statewide energy efficiency administrator; the agency works directly with 34 community-based organizations through its Community Partners Funding Network and directs funding to vulnerable households and target communications most effectively to ensure that demographics such as tribal nations, senior citizens, and immigrant populations can equitably access energy efficiency services (Rubado 2025).

Practice: Invest in detailed geographic, demographic, and stakeholder relationship understandings to plan engagement campaigns

Having a clear understanding of utility territory geography, demographic trends, vulnerable populations, and effective and engaged local partners can lead to impactful and effective low-income efficiency programs. For example, Duke's utilities, mainly across the southeast, have been running the Neighborhood Energy Saver program for almost two decades. This program works in neighborhoods identified as primarily low-income—with all households in target neighborhoods, regardless of individual household income levels—and partners with local leaders to provide services such as holding community events and providing free services (U.S. Environmental Protection Agency 2017). Participating households first receive free packages of direct-install products, and that then makes them eligible for additional free deeper retrofit services if it is determined they need them (Duke Energy Corporation 2026).

Other states, including Vermont and Maryland, have conducted detailed market studies to understand patterns of energy burdens and the need for efficiency services (Efficiency Vermont 2025; Maryland Office of People's Counsel 2022). California maintains an interactive, geospatial Energy Equity Indicators' affordability tool (California Energy Commission 2025) that showcases efficiency investments and energy burden patterns across the state; this provides baseline information for monitoring the progress and equitability of state clean energy programs in low-income and disadvantaged communities.

Achieving deeper savings

Policy: Tie program performance incentive metrics to equitable outcomes by including low-income program investment goals in the metrics

Performance incentive mechanisms (PIMs) are a tool for aligning utility business models with policy goals, and they can be used to reward specific outcomes resulting from utility energy efficiency investments. Expanding the use of PIMs to incentivize investment in low-income programs and achievement of specific equity metrics is an approach that more states and utilities should adopt. While initially tied primarily to savings performance, in recent years many states and regulators have explored expanding these metrics to incentivize other key programmatic aspects, including building decarbonization and greenhouse gas savings (Gold et al. 2022). Regulators are also beginning to incorporate equity and affordability metrics into PIMs, to drive program delivery to underserved communities. According to RMI's PIMs Database (RMI 2025), only four states have equity or affordability PIMs that are currently active. For example, in Illinois, PIMs evaluate reliability and resilience within designated "equity investment eligible communities," based on avoided service interruptions. In New Jersey, there is a PIM tied to verified lifetime savings from low- and middle-income customers, and in New York, a PIM rewards utilities for increasing the number of customers enrolled in a low-income discount rate tied to energy burden levels.

Program: Design one-stop-shop programs that eliminate barriers to entry

A program that provides a single point of entry for customers to access all available services can facilitate uptake of a more comprehensive suite of programs and incentives and allow households to achieve deeper savings. Especially for administratively complex projects like large multifamily building retrofits, or for states and utilities that have not already centralized some of their programs, the effort to restructure utility programs into a one-stop-shop model may be especially beneficial (Energy Efficiency for All 2017). Some one-stop shops combine services that would otherwise be offered through multiple programs, such as home repair, energy efficiency, and electrification. A notable example is Philadelphia Energy Authority's Built to Last program, which serves low-income homeowners. Bringing together utilities, home repair organizations, and health organizations, the program provides necessary health and safety home repairs in addition to clean energy upgrades. It has become so popular that there is now a substantial waitlist for prospective participants (Philadelphia Energy Authority n.d.). Additional utility programs are now transitioning to one-stop-shop models. For example, the New Jersey Board of Public Utilities has proposed to introduce a state-developed central clean energy building website that serves as a central resource; combined with state-supported Energy Navigator positions, it could support customers directly in navigating program offerings and incentives, and would employ a call center with a range of languages available (New Jersey Board of Public Utilities 2025). Additionally, recent policy proposals in Illinois call for a new "State Navigator" program that functions as a statewide one-stop shop for coordinating access to electrification, weatherization, and health and safety upgrades across all Illinois utility customers (Shonk and Bowman 2026).

Program: Integrate health and safety upgrades into program offerings

Instead of simply deferring customers whose homes have significant health and safety hazards when they would benefit substantially from the deep savings potential delivered by more comprehensive retrofits, utilities can partner with separate home repair programs or incorporate repair services into their retrofit programs, if state and regulatory policymakers approve the use of utility funds for pre-weatherization. Weatherization readiness repairs alone (e.g., HVAC equipment replacement and envelope repairs) can save customers substantial energy. Energy modeling based on a national ACEEE survey showed that heat pump replacement combined with floor repairs could help households save between 3,500 and 11,100 kWh of electricity (Farrell et al. 2025).[5] Combining these repairs with full weatherization could help households unlock even deeper energy savings.

Some utilities offer repairs as one of several available upgrades while others can refer customers to external repair programs. The Illinois Home Energy Solutions program is a joint initiative between multiple utilities that offers home assessments, direct-install measures, and deep retrofits. The program sets aside 23% of its budget specifically for health and safety repairs, and this allows customers who would otherwise have been deferred from service to receive deep retrofits (ACEEE 2024e). External repair programs can be administered by third-party organizations or by government entities such as Virginia's Weatherization Deferral Repair program; this program targets households deferred by the federal WAP and offers repairs that specifically address causes of deferrals (Farrell et al. 2025).

Program: Braid funding from multiple sources to support health and safety upgrades

Weatherization readiness repairs can be quite expensive, with one estimate ranging from $13,649–14,091 per home (Farrell et al. 2025). To support both health and safety repairs and deeper home weatherization costs, utilities often braid (i.e., acquire funding from different sources) for a single program. This can be an impactful way to expand program reach and impact in a cost-effective manner for ratepayers. Common sources include government funds (federal, state, and local), utility funds, philanthropic funds, and even health funds like Medicaid (Hayes and Gerbode 2020). For example, the City of Detroit's Renew Detroit Home Repair program used funding from the American Rescue Plan Act and the State of Michigan (Farrell et al. 2025). The program now has a $45 million budget and will focus its efforts on roof and window replacements through 2026 (City of Detroit n.d.).

It is important to have clear savings allocation, accounting strategies, and data-sharing principles established upfront, and many strong examples arose from how states braided WAP funding to state agencies with utility low-income program funds (U.S. Department of Energy Office of State and Community Energy Programs 2024; ACEEE 2024b; Insinna-Sahondo et al. 2025). Having consistent eligibility standards, installation standards, and workforce standards across collaborating programs also enables contractors to work smoothly across funding sources with less administrative friction.

Better serving renters, multifamily housing, and manufactured homes

Program: Develop targeted programs for multifamily housing

Many energy efficiency programs are only open to homeowners, especially those who are residents of single-family homes. Residents of multifamily homes and renters (both of apartments and of single-family homes) often have more difficulty accessing energy upgrades. Because renters often have limited ability to upgrade their units but stand to reap most of the energy savings benefits, communication and programming strategies that engage renters as well as owners are necessary. Additionally, especially for large multifamily buildings, there is a need for streamlined efficiency programs that support braiding of

[5] Energy modeling measured results for a 1950s, 1,500 square-foot, colonial-style home in different climate zones.

multiple funding streams to overcome financial barriers to larger retrofits. Indeed, some utilities have chosen to group their multifamily program resources together, regardless of targeted income level, to more easily share a contractor pool and ensure that there is a single point of contact for all multifamily buildings. These types of one-stop shops specifically for multifamily buildings can reduce administrative burden for building owners and support braiding of complex sources of funding to accomplish larger projects, while ensuring that contractors are familiar with larger commercial buildings.

Having multifamily and renter-specific programs also supports the development of equitable program strategies specific to this sector; for example, to manage split incentives and prevent landlords from passing on upgrade costs to tenants in the form of substantially higher rents, some utility programs establish tenant-protection agreements in their multifamily programs. In California, utilities participating in the Statewide Energy Savings Assistance Program are provided guidance on landlord agreements around eviction and rent increase caps that are required prior to conducting work (California Public Utility Commission 2025).

Program: Overcome split incentives between tenants and landlords via programs led by local municipalities

A concern over the availability of affordable housing is driving municipalities to consider innovative new strategies to incentivize energy efficiency and overcome the split incentives between landlords and renters (U.S. Environmental Protection Agency 2018). For example, the housing authority of the city of Atlanta was funded to run an Energy Efficient Rent Boost program that is meant to preserve affordable housing while reducing renters' energy costs and improving health and safety. An expansion of their existing responsibility for housing-choice vouchers, rent-setting, and landlord incentive program, this program conducts efficiency upgrades in units and then pays building owners a "rent boost" of $50–$175 a month per unit, which helps to incentivize building owners to upgrade units. The program also helps to coordinate additional property-owner incentives, including financing for building upgrades (Amann and Saul-Rinaldi 2024).

Program: Support demonstrations of emerging technologies to reach multifamily housing and renters

Regulators in several states have implemented pilots for emerging technologies that can enable improved service for multifamily buildings and rental units. For example, Illinois' Future of Gas regulatory proceedings have recommended a series of pilots to support state decarbonization pathways that combine energy efficiency, electrification, geothermal energy, and additional emerging technologies. One of the pilots, jointly proposed by the state's regulated electric and gas utilities, is meant to test commercial and multifamily water heating alternatives to evaluate the efficacy of newer technologies; things assessed include the impact in low-income multifamily buildings, and the impacts on energy usage, customer satisfaction, cost, and greenhouse gas and pollutant reductions (Illinois Commerce Commission Staff 2025).

In New York, the state appropriated $10 million for a window heat pump demonstration program run by the New York State Energy Research and Development Authority; it includes incentives available for both market-rate and low-income buildings, and contractors and vendors can bid into directly (NYSERDA 2025). This program is meant to support market transformation and will collect performance data from deployments and identify whether these technologies should become eligible for incentives as part of future utility efficiency programs.

Program: Stack and braid financing and incentives to support larger and more complex multifamily projects

Many multifamily projects require a broader mix of funding sources than single-family projects to accomplish deeper building-wide retrofits. To address this, multifamily utility programs may need to partner with other sources of funding to braid a range of incentives together and increase participation rates. One approach that utilities have used is to partner with green banks to provide commercial financing strategies for energy efficiency retrofits and other clean energy upgrades in affordable multifamily buildings (Samarripas and York 2019; Johnsen 2023).

Some utilities offer tiered performance-based financial incentives based on the amount of energy savings a customer achieves. For example, Xcel Energy and CenterPoint Energy run a Multifamily Building Efficiency program that offers no-cost direct installation measures along with recommendations for additional energy upgrades. Financial incentives are available in performance-based tiers, and higher financial incentives correspond to higher savings) (Tanabe 2021). Thus, the model encourages building owners to pursue upgrades that achieve deeper savings.

Other utilities offer incentives for in-unit improvements if multifamily customers can achieve a certain level of overall savings. Often, building owners will begin with improvements to common areas. Georgia Power's Multifamily Home Energy Improvement Program gives rebates of $500 per unit to building owners whose properties achieve at least 15% electric savings. The program benefits building owners through greater tenant satisfaction and retention and benefits tenants through lower energy bills and better indoor comfort (Mah and Sussman 2023; Georgia Power 2026). Funding models that benefit both building owners and residents and provide a business case for both parties to engage in efficiency upgrades are imperative for overcoming the landlord-renter split incentive (Samarripas and York 2019).

Program: Develop programs that serve manufactured housing

Nationwide, manufactured housing accounted for more than 7.2 million occupied units in 2023 (U.S. Census Bureau 2023). Manufactured housing is concentrated in rural communities, and in some rural counties it makes up as much as half of total housing stock. Geographically, the southern states in the East South Central Census Division (Kentucky, Tennessee, Mississippi, and Alabama) have the highest overall proportion of manufactured housing stock, with roughly 10% of all homes falling into this category (Bell-Pasht 2023).[6] Compared with traditional, site-built housing, manufactured housing is constructed in a factory before shipping to a site. Manufactured homes typically cost less per square foot than site-built homes (Bell-Pasht 2023). While some utilities and states run programs focused on retrofitting manufactured homes, other states have established programs that replace manufactured homes that do not meet current federal energy codes. Utility programs designed to serve manufactured housing can be extremely effective at saving these households money and energy. For example, Entergy Louisiana runs a ratepayer-funded manufactured homes retrofit program that provides no-cost energy upgrades and is focused on serving groups of customers in manufactured homes parks. On average, customers served by this program were saving 6,500 kWh per year, close to $800 (Bell-Pasht 2023). Many manufactured homes rely on inefficient electric resistance heating equipment and when combined with poor building shell performance, energy bills can become extremely expensive for residents; retrofitting these homes with heat pumps can provide substantial energy savings (Manclark 2023).

Practice: For manufactured homes built prior to 1994, determine whether retrofits or replacements would be more cost effective

[6] The states in the top 10 by absolute number of manufactured homes, based on 2024 data, are (in order from highest number of manufactured homes to lowest): Florida, Texas, North Carolina, California, Georgia, South Carolina, Arizona, Alabama, Louisiana, and Tennessee (Popa 2026).

In 1994, the federal government revised the Housing and Urban Development Code that sets quality standards for manufactured housing. The new code required additional safety measures and thermal efficiency requirements (Bell-Pasht 2023b), and manufactured homes built prior to the 1994 code are often in poor condition. For energy efficiency upgrades, residents of older manufactured housing need to decide whether it is more cost effective to retrofit their existing home or replace it with a new home that is built to code.

In Minnesota, the Rehabilitation Loan Program and Emergency and Accessibility Loan Program support both energy efficiency retrofits and replacements of manufactured housing. Residents can apply for either loan if they make no more than 30% of area median income. No matter which option they choose, residents can enjoy improved housing quality and lower energy bills. Previously, Minnesota had no state-level funding to support manufactured housing replacement (Bell-Pasht 2023b).

Practice: Engage building owners when they are pursuing other building upgrades

If a building owner is already planning to renovate or refinance their property, they may be more open to adding energy efficiency measures, as they are more likely to have funding available to cover the upfront cost. Renovation projects that include energy efficiency upgrades are more common with older buildings, which are generally less energy efficient than newer buildings. From 2018–2019, 29.9% of home improvement projects included energy efficiency upgrades for buildings constructed before 1980; in comparison, only 10.0% of home improvement projects included such upgrades for buildings constructed between 2010 and 2019 (Martín 2022). Thus, utilities should target owners of older multifamily buildings and present upgrade options when building owners are considering renovations. Braiding efficiency investments with clean energy upgrades can also be a way to help building owners find creative ways to finance upgrades that cut operating costs alongside additional building renovations (Samarripas and York 2018).

Practice: Invest in building data and segmentation to better target priority needs

A common barrier to multifamily energy efficiency is lack of data on local multifamily housing stock. Multifamily residences can vary greatly by building type, ownership structure, tenant income levels, and energy-metering practices (Elevate Energy 2017). Utilities can work with local governments to obtain data on such building characteristics and then target upgrades for buildings that need them most by tailoring offerings and communications materials based on the audience and aligning investments with local needs and with policy directives. These efforts also support decarbonization and climate goals. New York and Maryland have both developed building decarbonization roadmaps that explicitly incorporate affordable multifamily housing as a focal segment (NYSERDA 2022; Maryland Commission on Climate Change 2021). There are also regional policy guides that provide guidance to states on how to develop their own roadmaps (NESCAUM 2025).

Enhancing energy affordability

Policy: Use policy tools to align utility efficiency programs with other energy assistance tools and strategies

Energy efficiency as a tool is most effective at reducing energy burdens when it is paired with other strategies such as bill assistance programs or electrification of heating for customers reliant on expensive delivered fuels or using inefficient electric resistant heating. While energy efficiency reduces home energy consumption, it often requires additional policy tools directed at making bills more affordable (e.g., percentage of income payment plans and other equitable discount rate designs) and disconnection and arrearage management strategies to ensure that customers arrive at manageable energy bills (Gold 2025). Regulators have opened rate cases, legislators have passed bills requiring

discount rates tied to energy burden levels, and state agencies have braided programs and funding from multiple sources to ensure that where efficiency interventions occur, energy affordability is also increased. For example, in Maryland, regulators opened a rate case docket to develop a model low-income discount rate, and it also led to a suite of broader, complementary recommendations for addressing energy burdens in the state more holistically; this was through a combination of energy efficiency, community solar, and other affordability-focused strategies (Baker 2025).

Program: Combine energy efficiency programs with bill assistance to reduce energy burdens

Energy efficiency can be a key strategy for reducing energy burdens in low-income households, especially when aligned with other affordability tools. For example, New York's Energy Affordability Program is available to all customers at or below 60% of state median income and requires utilities to identify and automatically enroll all eligible households in budget billing, to help reach energy burdens below 6%. The Energy Affordability Guarantee Pilot Program combines this energy-burden targeted bill assistance with low-income home electrification upgrades and uses state-appropriated funds to ensure that approximately 1,000 low-income households that electrify space and water heating through the state low-income efficiency program, Empower+, will have affordable electricity bills afterward (benchmarked for this program as customers paying no more than 6% of their annual income in electricity bills). In many states, the budget for income-qualified bill discounts can far outweigh energy efficiency program budgets. For example, the Maryland Department of Housing and Community Development (DHCD) administers both low-income energy efficiency and energy assistance programs for the state. In fiscal year 2024, a budget of roughly $71.6 million was allocated to bill assistance (for both bill payment assistance and arrearage assistance) and $37.8 million went to low-income energy efficiency programs. The broader pool of customers who participate in bill discount programs may be more likely to also participate in energy efficiency programs, and interactions with program staff of bill assistance programs can be used to share further information about efficiency opportunities.

Practice: Bundle electrification with efficiency upgrades

Energy efficiency improvements can offset the higher electric bills that can result from electrification in some parts of the country. Weatherization is vital for reducing utility bills from heating and cooling, especially after replacing a gas-powered furnace with a heat pump. However, only a quarter of surveyed electrification programs required weatherization in 2022 (Cohn and Esram 2022). Programs that pair weatherization with electrification can unlock greater energy savings, cost savings, comfort, and health benefits than would be realized when doing the upgrades separately.

In Massachusetts, the sponsors of Mass Save's Residential Electrification program offer financial incentives for electrification upgrades (e.g., heat pumps, heat pump water heaters, induction stoves) and also integrate electrification with weatherization measures like air sealing and insulation; low- and moderate-income customers are required to weatherize prior to installing heat pumps through this program (Mass Save 2025b). In 2023 alone, the program weatherized over 9,500 income-eligible homes and installed nearly 2,800 heat pumps (ACEEE 2024c). Another combined electrification and efficiency strategy that is being increasingly considered is to prioritize lower-voltage electric appliances to reduce the need for (and thus avoid the cost of) home electric panel upgrades (Walker and Less 2023). Utilities are currently running pilot and demonstration programs that test the efficacy of electric appliances that avoid panel upgrades. For example, in Wisconsin, a field study in 2024 assessed cold climate performance for 120V heat pump water heaters and found them to be both cost effective and satisfactory for meeting household water heating needs for most participants (Slipstream 2024).

Achieving climate goals equitably

Policy: Fund low-income electrification programs at the state level to help achieve climate goals

Efficiency and electrification goals often have overlapping strategies and outcomes. States with explicit climate goals are currently navigating how to best coordinate efficiency and electrification programs. Aligning building decarbonization goals with energy efficiency goals helps to ensure that low-income households are included in electrification and climate planning efforts; can access more affordable and efficient electric appliances; and are not being left behind to bear a greater share of rising gas system costs. For example, a recent modeling study predicted a 46% price increase for residential gas customers over the next 15 years, driven by locked-in costs of gas infrastructure upgrades and maintenance borne by a shrinking customer base (Garibay-Rodriguez et al. 2025). Setting equitability goals in climate and building electrification policy strategies at the state level and allocating funds to support low-income electrification progress alongside utility efficiency upgrades can help to ensure that low-income households are not left behind and that electrification results in more affordable energy for customers. For example, states have proposed legislation to fund pre-weatherization programs that target low-income households (e.g., Senate Bill S3315A in New York). States have also opted to use their allocation of federal Home Owner Managing Energy Savings Act and Home Electrification and Appliance Rebates programs to specifically electrify low- and moderate-income households (Aries-Praud 2025).

Practice: Ensure that electrification programs result in more affordable energy bills for low-income participants

To ensure that low-income electrification programs are beneficial to customers and reduce customer energy burdens, some utilities have piloted programs to assess whether electrification of space and/or water heating results in lower energy costs. One example is the Low-Income Decarbonization Pilot program deployed by the DC Sustainable Energy Utility. The pilot tracked program outcomes in detail and the participants reported improved comfort and more affordable energy bills, in addition to reduced carbon emissions (VEIC 2020). The DC Sustainable Energy Utility also runs an Affordable Home Electrification program that installs electric equipment and the Solar for All program, which installs rooftop solar. Participation in both is free for income-qualified residents. Applicants of one program are strongly encouraged to apply for the other to maximize reductions in utility bills (DCSEU 2025).

Conclusion

This analysis found that large utilities across the United States have steadily increased their investment in low-income energy efficiency programs over the last decade. Despite this trend, most are still underinvesting in low-income programs relative to the corresponding proportion of income-qualified population in their service territories. We estimated that there is, on average, a 13.8% gap between utility investment in programming for income-limited customers and the prevalence of low-income households in their customer base. Utilities that do not have an “equity gap” are primarily located in states with strong energy efficiency resource standards that are paired with statutorily set low-income investment requirements.

There are also many effective steps that utilities and regulators can take independent of new legislation. By looking at best practices and programs that have been successfully implemented in other states, we see that these states have diversified program portfolios that reach customers through a range of delivery channels; have developed targeted efforts to overcome participation barriers in multifamily housing; are willing to invest in deeper measures that deliver longer-term benefits; balance accessible

measures with deeper retrofit offerings; and integrate health and safety investments in their energy efficiency programs.

Understanding the major barriers to equitable low-income efficiency program delivery is useful to all utilities and policymakers concerned about energy affordability for households that are struggling financially. Designing effective policies, programs, and practices requires targeting efforts to specific barriers in states or utility territories. To overcome each of these challenges, we presented a menu of exemplary strategies. These strategies are themed around a set of overarching goals: expanding efficiency program investments, achieving deeper savings, reaching target demographics, enhancing energy affordability, and achieving climate goals equitably.

While these approaches all can broaden the scope and impact of utility programs, the key stakeholders who must undertake these actions vary. Policy strategies are largely driven by legislative, state agency, or regulatory actions, while utility program administrators and implementers have greater direct control over programs and practices (though they may require additional support from regulators and state agencies).

Some of the highest-priority policy actions for legislators and regulators, based on our research and consultation with experts, include:

- Setting ambitious state-level energy efficiency savings targets and low-income investment standards to drive equitable utility program investment
- Ensuring cost-effectiveness tests measure program benefits holistically, and take into consideration the health and safety benefits of energy efficiency upgrades

High-priority programming actions that utility administrators and program implementers can undertake include:

- Developing targeted programs for renters that work to overcome barriers to accomplishing deeper retrofit projects that are specific to tenants and landlords
- Designing one-stop shops, reducing customer administrative barriers, and streamlining the program delivery processes to ensure programs reach a broad range of participants while also achieving deeper project savings

High-priority practices that program implementers can undertake include:

- Partnering with trusted community-based organizations to expand reach, build trust within targeted communities, and ensure that programs are tailored appropriately to resident needs
- Employing categorical eligibility tools to reduce administrative burdens for customers and automatically enroll eligible customers in programs based on their participation in other energy, food, or medical assistance programs with similar eligibility criteria.

In today's context of both rising energy prices and rising energy demand, the value of investment in energy efficiency for both consumers and for the grid is likely only to increase. For utilities and the grid, energy efficiency continues to be a valuable resource for reducing the need for additional supply-side generation. For households, energy efficiency upgrades enable immediate and long-lasting bill savings, improve the comfort, health, and safety of their homes, and can set the stage for more affordable electrification. Low-income households are, however, less likely to be able to afford the upfront costs of energy efficiency upgrades without programs specifically designed for them and support from utilities and state agencies. As more utilities provide bill pay assistance programs to reduce arrearages and

customer energy burdens, energy efficiency interventions, especially in homes with very high energy consumption, also reduce the program cost of these rate reform and bill assistance programs. Utility energy efficiency programs aided by supportive state policy and strategically designed programs and practices are an essential tool for ensuring that all households have access to affordable energy and live in safe, healthy, and efficient buildings.

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Appendix

Raw data containing information used to conduct analyses in Part I of this report. Collected from publicly available utility demand-side management annual reports for 2024, unless noted otherwise.

Table A1. Summary of utilities surveyed for report

Utility short name	Utility full name	State	Retail electric sales (MWh)	Total customers (EIA 861 2024)	Electric residential customers served
AEP TC	AEP Texas Central (AEP TC)	TX	32,900,000	1,511,454	910,075
Ameren IL	Ameren Illinois	IL	33,911,000	1224108	1,200,000
Ameren MO	Ameren Missouri (Union Electric Company)	MO	34,833,000	1,244,264	1,300,000
APS	Arizona Public Service (APS)	AZ	33,701,404	1,400,037	1,256,120
BGE	Baltimore Gas & Electric (BGE)	MD	27,807,000	1,342,757	1,207,932
CenterPoint	CenterPoint	TX	103,862,000	2,651,169	2,509,929
ComEd	Commonwealth Edison (ComEd)	IL	84,333,000	4,130,749	3,727,097
ConEd	Consolidated Edison (ConEd)	NY	22,272,000	3,646,787	3,700,000
Consumers	Consumers Energy	MI	36,574,812	1,894,492	1,652,141
CPS	CPS Energy (formerly City Public Service Board of San Antonio)	TX	31,600,000	962,272	950,129
Dominion SC	Dominion Energy South Carolina	SC	22,000,000	806,434	800,000

Utility short name	Utility full name	State	Retail electric sales (MWh)	Total customers (EIA 861 2024)	Electric residential customers served
Dominion VA	Dominion Virginia (Virginia Electric & Power Company)	VA	94,500,000	2,655,130	2800000
DTE	DTE Electric	MI	46,779,561	2,283,306	2,055,911
Duke FL	Duke Energy Florida	FL	43,846,000	2,009,464	2,000,000
Duke IN	Duke Energy Indiana	IN	30,219,000	909,011	810,000
Duke Progress	Duke Energy Progress - North Carolina (Duke Progress)	NC	62,398,056	1,576,769	1,700,000
Duke SC	Duke Energy Carolinas - South Carolina (Duke SC)	SC	22,127,908	674,022	680,000
Entergy AR	Entergy Arkansas	AR	23,423,314	732,664	608,362
Entergy LA	Entergy Louisiana	LA	60,495,853	1,109,156	957,522
Entergy TX	Entergy Texas	TX	21,269,743	519,216	457,369
Eversource CT	Eversource CT Data from CT Energy Dashboard	CT	20,151,000	1,290,878	1,300,000
Eversource MA	Eversource Massachusetts (NSTAR Electric Company)	MA	23,365,000	1,475,929	1,580,000
FP&L	Florida Power & Light (FP&L)	FL	-	5,905,174	6,000,000
GA Power	Georgia Power	GA	193,400,000	2,804,103	2,329,000
JCP&L	Jersey Central Power & Light (JCP&L)	NJ	10,400,000	1,171,837	1,200,000
LADWP	Los Angeles Department of Water and Power (LADWP)	CA	20,935,284	1,510,995	4,000,000

Utility short name	Utility full name	State	Retail electric sales (MWh)	Total customers (EIA 861 2024)	Electric residential customers served
LIPA	Long Island Power Authority (LIPA)	NY	8,625,000	1,161,788	1,200,000
MidAm. IA	MidAmerican Energy - Iowa (MidAm IA)	IA	42,264,712	738,335	624,956
Nevada Power	Nevada Power	NV	25,498,000	1,035,139	916,000
NG MA	National Grid Massachusetts (Massachusetts Electric Company)	MA	4,604,781	1,373,756	1,400,000
NG NY	National Grid New York (Niagara Mohawk Power)	NY		1,718,921	NA
OG&E	Oklahoma Gas & Electric (OG&E)	OK	30,500,000	832,721	762,433
Oncor	Oncor	TX	-	3,765,464	3800000
PacifiCorp UT	PacifiCorp - Utah	UT	60,755,000	1,056,003	1,838,000
PECO	PECO Energy	PA	36,764,000	1,706,299	1,525,635
PG&E	Pacific Gas & Electric (PG&E)	CA	78,588,000	5,725,404	5,562,223
PGE	Portland General Electric (PGE)	OR	21,697,000	942,880	829,721
PPL	PPL Electric Utilities	PA	66,103,000	1,487,347	1,500,000
PSE	Puget Sound Energy (PSE)	WA	21,172,462	1,238,151	1,077,406
PSE&G	Public Service Electric & Gas (PSE&G)	NJ	40,651,000	2,389,765	2,400,000
SDG&E	San Diego Gas & Electric (SDG&E)	CA	16,691,000	1,525,968	285,881

Utility short name	Utility full name	State	Retail electric sales (MWh)	Total customers (EIA 861 2024)	Electric residential customers served
SRP	Salt River Project (SRP)	AZ	43,999,000	1,166,094	1,183,163
TECO	Tampa Electric (TECO)	FL	20,791,000	849,876	840,000
We Energies	We Energies (Wisconsin Electric Power)	WI	28,772,900	1,170,318	1,052,000
West Penn	West Penn Power	PA	142,648,000	733,761	739,000
Xcel CO	Xcel Colorado (Public Service Company of Colorado)	CO	34,579,000	1,589,710	1,500,000
Xcel MN	Xcel Minnesota (Northern States Power Company - Minnesota)	MN	112,273,000 MWh (all of Xcel)	1,375,256	1600000

Table A2. Energy efficiency spending and savings

Utility short name	Incremental electric savings (MWh)	Residential electric savings (MWh)	Annual low-income savings (MWh)	Lifetime low-income savings (MWh)	Total electric EE spending ($)	Residential EE spending ($)	Total low-income program spending ($)
AEP TC	64,572	28,177	5,031	NA	$18,503,080	$10,047,200.00	$3,841,130
Ameren IL	438,825	144,199	102,263	281,690	$155,416,341	$59,438,489	$47,175,532
Ameren MO	139,819	65,315	24,199	NA	$55,340,497	$22,562,145	$10,815,154
APS	318,192	141,473	3,752	67,540	$46,226,973	$24,724,575	$7,001,573
BGE	735,758	NA	8,035	NA	$189,573,846	$70,087,034	$15,603,257
CenterPoint	228,949	119,323	14,147	NA	$45,225,370	$24,422,704	$7,343,912
ComEd	1,944,945	997,000	727,115	NA	$435,117,927	$162,478,943	$121,965,255

Utility short name	Incremental electric savings (MWh)	Residential electric savings (MWh)	Annual low-income savings (MWh)	Lifetime low-income savings (MWh)	Total electric EE spending ($)	Residential EE spending ($)	Total low-income program spending ($)
ConEd	293,620	115,437	19,493	NA	$91,224,000	$23,033,799	$7,424,000
Consumers	664,676	167,471	75,306	609,077	$199,500,829	$63,565,996	$31,288,921
CPS	159,127	63,595	29,291	NA	$44,260,077	$31,882,235	$16,608,517
Dominion SC	77,791	49,073	9,581	NA	$26,089,302	$14,726,191	$4,269,310
Dominion VA	359,228	359,228	11,976	155,089	$244,000,000	$152,000,000	$53,000,000
DTE	919,000	174,610	45,950	285,247	$196,000,000	$72,520,000.00	$45,080,000
Duke FL	55,724	46,332	20,182	NA	$109,160,000	$48,650,000	$8,310,000
Duke IN	170,233	102,566	516	NA	$28,189,865	$16,741,249	$1,227,196
Duke Progress	305,745	241,841	939.455	NA	$63,788,871	$47,590,490	$1,869,792
Duke SC	683,333	481,147	11,847	NA	$27,329,430	$13,882,849	$4,733,077
Entergy AR	248,169	104,528.00	7,675	141,044	$47,353,000	$26,108,000	$3,691,225
Entergy LA	77,453	44,900	9,859	156,227	$17,864,155	$9,816,966	$3,423,550
Entergy TX	46,249	14,034	3,321.13	58,937	$8,025,680	$5,142,875	$1,485,035
Eversource CT	131,285	7,583	3,526	50,425	$170,756,281	$81,679,594	$22,773,416
Eversource MA	103,897	5,931	8,896	59,760	$549,403,776	$226,190,442	$56,610,978
FP&L	90,447	54,070	27,650	NA	$100,380,000	$50,520,000	$4,651,000
GA Power	425,662	117,894	30,656.56	NA	$67,087,709	$32,743,897	$21,810,022
JCP&L	132,795	38,719	1,028	NA	$86,416,000	$23,152,000	$4,718,000
LADWP	323,580	10,142	5,306.65	NA	$352,837,000	$42,690,567	$13,662,049

Utility short name	Incremental electric savings (MWh)	Residential electric savings (MWh)	Annual low-income savings (MWh)	Lifetime low-income savings (MWh)	Total electric EE spending ($)	Residential EE spending ($)	Total low-income program spending ($)
LIPA	186,337	167,822	2,088	NA	$120,068,000	$82,266,000	$2,409,000
MidAm. IA	161,650	36,052	957.186	NA	$43,977,916	$11,991,558	$3,321,286
Nevada Power	233,247	67,248	430.394	NA	$45,703,895	$27,283,204	$2,242,067
NG MA	153,701	64,914	14,468	186,874	$335,168,555	$253,543,122	$73,798,303
NG NY	348,846	185,011	4,020	NA	$48,600,000	$13,770,000	$2,360,000
OG&E	179,122	51,464	13,023.46	NA	$38,762,900	$18,357,944	$6,249,419
Oncor	232,967	149,077	24,319.47	NA	$53,014,140	$33,782,023	$11,392,934
PacifiCorp UT	326,351	155,577	10,892.96	NA	$64,442,944	$25,249,054	$7,567,837
PECO	301,855	109,104	22,408	NA	$82,299,000	$56,508,000	$7,513,000
PG&E	383,500	299,244	28,695	NA	$302,800,000	$185,900,000	$119,876,124
PGE	331128	NA	NA	NA	$136,479,573	NA	$5,737,763
PPL	136,337	42,825	14,062	NA	$57,198,000	$20,835,000	$7,971,000
PSE	258,198	82,548	1,457	NA	$120,779,370	$43,077,919	$7,493,690
PSE&G	643,785	176,570	21,325	34,954	$515,338,000	$230,704,000	$22,658,000
SDG&E	383,470	27,610	740.021	NA	$74,200,000	$20,900,000	$13,751,896
SRP	626,020	442,293	12,860	NA	$55,200,000	$15,975,582	$2,498,665
TECO	108,700	22,200	12,816.89	NA	$46,761,898	$10,767,200	$2,281,000
We Energies	364,383	38,968	NA	NA	$89,492,530	$34,821,978	$19,794,370
West Penn	83,528	20,272	7,676	NA	$37,949,000	$14,616,000	$4,585,000
Xcel CO	466,830	91,968,143	18,962	NA	$115,393,142	$26,462,069	$4,665,641

Utility short name	Incremental electric savings (MWh)	Residential electric savings (MWh)	Annual low-income savings (MWh)	Lifetime low-income savings (MWh)	Total electric EE spending ($)	Residential EE spending ($)	Total low-income program spending ($)
Xcel MN	516,355	123,424	3,599	NA	$135,650,728	$33,859,109	$6,559,879

Table A3. Cost of savings and savings per household

Utility short name	Residential EE cost ($/MWh)	Cost of lifetime LI savings ($/MWh)	Annual LI savings (kWh) per LI household	Lifetime LI savings (kWh) per LI household
AEP TC	$357	NA	17.66	NA
Ameren IL	$412	$167	330.31	909.85
Ameren MO	$345	NA	62.68	NA
APS	$175	$104	9.34	168.09
BGE	NA	NA	31.53	NA
CenterPoint	$205	NA	18.41	NA
ComEd	NA	$3,001	756.16	NA
ConEd	$200	NA	18.42	NA
Consumers	$380	$51	154.51	1249.69
CPS	$501	NA	98.497	NA
Dominion SC	$300	NA	37.54	NA
Dominion VA	$423	$342	17.75	229.83
DTE	$415	$158	75.76	470.32
Duke FL	$1,050	NA	34.21	NA
Duke IN	$163	NA	2.12	NA
Duke Progress	$197	NA	1.99	NA

Utility short name	Residential EE cost ($/MWh)	Cost of lifetime LI savings ($/MWh)	Annual LI savings (kWh) per LI household	Lifetime LI savings (kWh) per LI household
Duke SC	$29	NA	55.10	NA
Entergy AR	$250	$26	28.45	522.88
Entergy LA	$219	$22	23.65	374.73
Entergy TX	$366	$25	20.72	367.77
Eversource CT	$10,771	$452	11.93	170.58
Eversource MA	$38,137	$947	26.19	175.92
FP&L	$934	NA	15.62	NA
GA Power	$278	NA	43.02	NA
JCP&L	NA	NA	3.95	NA
LADWP	$4,209	NA	4.88	NA
LIPA	NA	NA	6.08	NA
MidAm. IA	NA	NA	5.76	NA
Nevada Power	NA	NA	1.60	NA
NG MA	$3,906	$395	48.07	620.84
NG NY	$74	NA	8.18	NA
OG&E	NA	NA	48.39	NA
Oncor	$227	NA	20.45	NA
PacifiCorp UT	$162	NA	25.77	NA
PECO	$518	NA	53.80	NA
PG&E	NA	NA	18.97	NA
PGE	NA		NA	NA
PPL	$487	NA	34.34	NA

Utility short name	Residential EE cost ($/MWh)	Cost of lifetime LI savings ($/MWh)	Annual LI savings (kWh) per LI household	Lifetime LI savings (kWh) per LI household
PSE	$522	NA	5.96	NA
PSE&G	$1,307	$648	40.95	67.12
SDG&E	$757	NA	9.52	NA
SRP	$36	NA	37.87	NA
TECO	$485	NA	51.72	NA
We Energies	$894	NA	NA	NA
West Penn	$721	NA	38.05	NA
Xcel CO	$0.29	NA	59.91	NA
Xcel MN	$274	NA	10.32	NA

Table A4. Calculated spending, saving, and equity statistics

Utility short name	State	Estimated LI households	State percentage 200FPL	LI spending per LI household	EE spending per customer	Residential EE spending per customer	EE % spent on LI	Equity gap
AEP TC	TX	284,853	31.30%	$13	$12	$11	20.76%	10.54%
Ameren IL	IL	309,600	25.80%	$152	$127	$50	30.35%	-4.55%
Ameren MO	MO	386,100	29.70%	$28	$43	$17	20%	NA
APS	AZ	401,811	28.70%	$17	$33	$20	15.15%	13.55%
BGE	MD	254,874	21.10%	$61	$141	$58	8.23%	12.87%
CenterPoint	TX	768,512	31.30%	$10	$17	$10	16.24%	15.06%
ComEd	IL	961,591	25.80%	$127	$105	$44	28.02%	-2.22%
ConEd	NY	1,058,200	28.60%	$7	$25	$6	8.14%	20.46%
Consumers	MI	487,382	29.50%	$64	$105	$38	15.68%	13.82%

Utility short name	State	Estimated LI households	State percentage 200FPL	LI spending per LI household	EE spending per customer	Residential EE spending per customer	EE % spent on LI	Equity gap
CPS	TX	297,390	31.30%	$56	$46	$34	37.52%	-6.22%
Dominion SC	SC	255,200	31.90%	$17	$32	$18	16.36%	15.54%
Dominion VA	VA	674,800	24.10%	$79	$92	NA	21.72%	2.38%
DTE	MI	606,494	29.50%	$74	$86	$35	23.00%	6.50%
Duke FL	FL	590,000	29.50%	$14	$54	$24	7.61%	21.89%
Duke IN	IN	243,000	30%	$5	$31	$21	4.35%	25.65%
Duke Progress	NC	473,031	30.20%	$4	$40	$28	2.93%	27.27%
Duke SC	SC	215,013	31.90%	$22	$41	$20	17.32%	14.58%
Entergy AR	AR	269,745	36.70%	$14	$65	$43	7.80%	28.90%
Entergy LA	LA	416,900	37.90%	$8	$16	$10	19.16%	18.74%
Entergy TX	TX	160,256	31.30%	$9	$15	$11	18.50%	12.80%
Eversource CT	CT	295,611	22.90%	$77	$132	NA	13.34%	9.56%
Eversource MA	MA	339,700	21.50%	$167	$372	$143	10.30%	11.20%
FP&L	FL	1,770,000	29.50%	$3	$17	$8	4.63%	24.87%
GA Power	GA	712,674	30.60%	$31	$24	$14	32.51%	-1.91%
JCP&L	NJ	260,400	21.70%	$18	$74	$19	5.46%	16.24%
LADWP	CA	1,088,000	27.20%	$13	$234	$11	3.87%	23.33%
LIPA	NY	343,200	28.60%	$7	$103	$69	NA	NA
MidAm. IA	IA	166,238	26.60%	$20	$60	$19	7.55%	19.05%

Utility short name	State	Estimated LI households	State percentage 200FPL	LI spending per LI household	EE spending per customer	Residential EE spending per customer	EE % spent on LI	Equity gap
Nevada Power	NV	269,304	29.40%	$8	$44	$30	4.91%	24.49%
NG MA	MA	301,000	21.50%	$245	$244	$181	22.02%	-0.52%
NG NY	NY	491,611	28.60%	$5	$28	NA	4.86%	23.74%
OG&E	OK	269,139	35.30%	$23	$47	$24	16.12%	19.18%
Oncor	TX	1,189,400	31.30%	$10	$14	NA	21.49%	9.81%
PacifiCorp UT	UT	422,740	23%	$18	$61	$14	11.74%	11.26%
PECO	PA	416,498	27.30%	$18	$48	$37	9.13%	18.17%
PG&E	CA	1,512,925	27.20%	$79	$53	$33	39.59%	-12.39%
PGE	OR	227,344	27.40%	$25	$145	NA	4.20%	23.20%
PPL	PA	409,500	27.30%	$19	$38	$14	13.94%	13.36%
PSE	WA	244,571	22.70%	$31	$98	$40	6.20%	16.50%
PSE&G	NJ	520,800	21.70%	$44	$216	$96	4.40%	17.30%
SDG&E	CA	77,760	27.20%	$177	$49	$73	18.53%	8.67%
SRP	AZ	339,568	28.70%	$7	$47	$14	4.53%	24.17%
TECO	FL	247,800	29.50%	$9	$55	$13	4.88%	24.62%
We Energies	WI	238,804	22.70%	$83	$76	$33	22.12%	0.58%
West Penn	PA	201,747	27.30%	$23	$52	$20	12.08%	15.22%
Xcel CO	CO	316,500	21.10%	$15	$73	$18	4.04%	17.06%
Xcel MN	MN	348,800	21.80%	$19	$99	NA	4.84%	16.96%