

High-Impact Programs Targeting Regional Multifamily Energy Savings Opportunities

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Objective

Multifamily buildings have five or more units and hold untapped energy savings opportunities for energy efficiency programs. While many utility programs offer direct installation measures or in-unit kits for residents, such services rarely provide comprehensive energy efficiency upgrades, such as equipment or building systems upgrades. Utility energy efficiency programs can pursue higher savings by encouraging more systemic improvements and targeting energy end uses with significant savings potential. Here, building on ACEEE's 2020 multifamily energy savings potential analysis, we profile four multifamily utility efficiency programs and their successful approaches to achieving high savings in the South, West, Midwest, and Northeast regions of the United States.¹

Background

The multifamily building sector has been historically underserved by utility energy efficiency initiatives and has opportunities to achieve substantial energy savings. Energy efficiency programs often face challenges when trying to reach buildings with five or more units due to the sector's complexity and diversity.² These challenges include split incentives (owners are responsible for capital improvements, but tenants often pay the energy bills), financial barriers, time constraints for building owners, and marketing and information hurdles for program managers.³ However, previous research from ACEEE and others has identified best practices and strategies for successfully addressing these unique challenges.⁴ Now, an increasing number of utilities are providing multifamily properties with energy efficiency programs, reaching more residents with energy savings and other benefits. Many of these programs target building owners or managers, partner with local housing stakeholders, and tailor marketing to specific housing market segments.

Despite such gains in multifamily energy efficiency, many apartments and condominiums are still in need of energy-efficient upgrades, and properties have varying unaddressed energy needs regionally. In a recent analysis, ACEEE estimated that making common efficiency upgrades to residential units that fall in the top 25% of multifamily energy users could reduce multifamily residential energy use across the United States by approximately 17% and save residents \$3 billion in energy costs.⁵ Across the country, lighting, space heating, and water heating accounted for more than 80% of the potential energy savings available in multifamily properties.⁶ However, high energy end uses differ in Census regions across the United States. As figure 1 shows, our analysis identified the following residential end uses as having high savings potential in regional multifamily housing:⁸

- In the South, multifamily households were more likely to use large amounts of electricity for space heating, air-conditioning, water heating, and lighting.
- In the Northeast, multifamily households were more likely to be high users of natural gas for space and water heating.
- In the West and Midwest, multifamily households were less likely to be high energy users, yet both regions still hold significant multifamily energy-saving potential. Multifamily households in these regions are likely to use large amounts of electricity for lighting, while Midwestern multifamily households may be high energy users for air-conditioning and natural gas water heating.

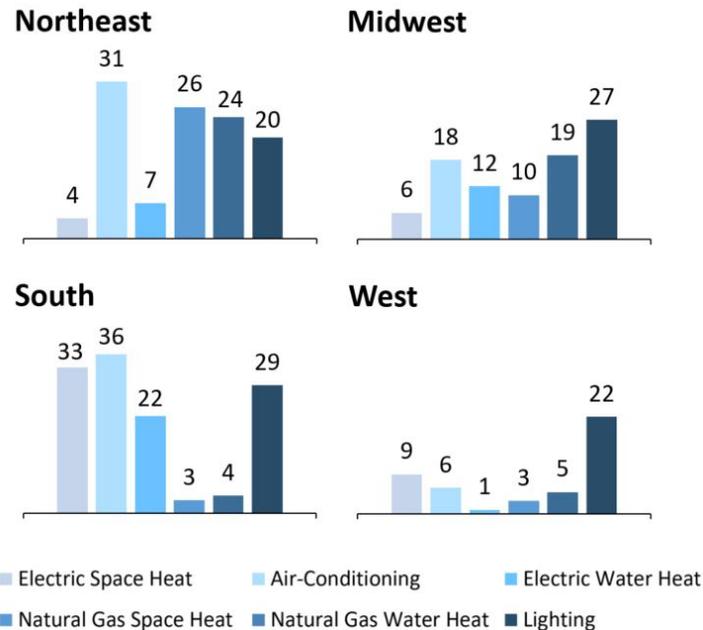


Figure 1. Regional percentage shares of multifamily households with high energy use by end use⁷

While the number of multifamily energy efficiency programs has increased in recent years, many programs do not achieve high residential savings or address the high energy end uses listed above. Multifamily programs often focus on direct installation offerings or in-unit kits that include low-cost measures such as LEDs, low-flow showerheads, and faucet aerators. Such inexpensive offerings remain beneficial for increasing engagement with property owners and providing immediate energy savings, but these measures alone do not result in deep energy reductions. Many multifamily programs do not provide incentives for more-extensive improvements, such as air sealing of building envelopes, upgrades to hot-water or HVAC equipment, or improved building controls.⁹

Successful Program Examples

We identified four utility multifamily energy efficiency programs that are capitalizing on region-specific energy-saving opportunities:

- South—Georgia Power, Home Energy Improvement Program
- West—Pacific Gas & Electric, Multifamily Home Upgrade Program
- Midwest—Consumers Energy, Multifamily Program
- Northeast—Eversource, Residential Coordinated Delivery Initiative

We profile each of these programs here. Table 1 lists their 2019 spending, savings, and participation data.

Table 1. 2019 program spending, savings, and participation¹⁰⁻¹⁴

Program	Electric spending	Electric savings (kWh)	Electric housing units served	Electric savings per unit (kWh)	Gas spending	Gas savings (Therms)	Gas housing units served	Gas savings per unit (Therms)
Georgia Power, Home Energy Improvement	\$8,444,122 *	5,172,562	1,801	2,872	N/A	N/A	N/A	N/A
PG&E, Multifamily Home Upgrade	\$6,333,027 **	3,577,500	3,322	1,077	\$6,333,027	104,614	3,594	29.1
Consumers Energy, Multifamily Program	\$4,436,781	9,367,000	35,848	261	\$2,479,000	2,167,282	68,159	31.8
Eversource, Residential Coordinated Delivery	\$2,778,123	5,720,316	11,355	504	\$2,587,995	275,296	3,370	81.7

* Represents spending for both single-family and multifamily upgrades through the Home Energy Improvement Program. ** Represents total spending for both electric and gas.

SOUTH—GEORGIA POWER'S HOME ENERGY IMPROVEMENT PROGRAM

Georgia Power offers the Home Energy Improvement Program to both single-family and multifamily residents, providing incentives to market-rate and affordable multifamily properties for various energy efficiency upgrades. The Georgia Public Service Commission requires that \$500,000 of the program's budget serve affordable multifamily properties.¹⁵ Table 1 shows the spending and savings data for Georgia Power's Home Energy Improvement Program.

The program offers customers two pathways: individual improvements or a whole-house approach.¹⁶ The individual improvement pathway allows building owners to implement quick, one-off projects, including smart thermostats, air sealing, solar water heating, attic insulation, and air-conditioning replacement. This option allows building owners to participate in the program without committing to a substantial retrofit project.¹⁷ Georgia Power then guides participants to pursue additional, more-comprehensive improvements in the future. Qualified multifamily properties earn up to \$300 per unit per year in rebates through the individual improvements approach.

The whole-house approach promotes a more comprehensive and systemic strategy for reducing energy use by installing multiple prescriptive improvements. This approach begins with a whole-building energy assessment. Properties can receive rebates of up to \$500 per unit per year when conducting improvements through the whole-house approach.¹⁸ Providing multiple pathways allows participants

Home Energy Improvement Program Highlights

- Addresses regional energy savings opportunities in residential air-conditioning and space heating
- Provides energy assessments, direct installation measures, and comprehensive retrofit projects
- Offers multiple pathways for multifamily customers
- Provides budget carveout for affordable multifamily properties

the flexibility to choose options based on their budgets and priorities, while still encouraging deeper energy savings by offering somewhat higher rebates for more-comprehensive improvements.

WEST—PACIFIC GAS & ELECTRIC COMPANY'S MULTIFAMILY HOME UPGRADE PROGRAM

Pacific Gas & Electric's (PG&E's) Multifamily Home Upgrade Program provides energy efficiency incentives to multifamily buildings and uses a tiered approach that awards additional incentives for higher energy savings. PG&E offers incentives for energy assessments and for energy-saving improvements. Residents receive unique recommendations based on the assessment results.¹⁹ The program provides prospective participants with a single point of contact to help coordinate the application process and provide technical assistance such as benchmarking and operations and maintenance training. This approach is referred to as a *one-stop shop*, and an increasing number of programs are adopting this model to support their applicants.

Multifamily Home Upgrade Highlights

- Addresses regional energy savings opportunities in residential lighting and water heating
- Provides energy assessments, direct installation measures, and comprehensive retrofit projects
- Provides customers with a one-stop shop
- Offers tiered incentives to affordable and market-rate multifamily properties

PG&E encourages multifamily property owners to pursue comprehensive, whole-building energy savings by grouping efficiency upgrades into four categories and requiring participants to select measures from at least two categories. The four categories are *HVAC* (heating, air-conditioning, and fans); *building envelope* (windows, insulation, and cool roofs); *hot water* (boilers, pumps, and controls, and low-flow fixtures); and *lighting and appliances* (interior lighting, exterior lighting, kitchen appliances, and laundry appliances).²⁰ In addition to installing upgrades in multiple categories, the program promotes comprehensive energy efficiency upgrades by offering performance-based incentives. PG&E encourages participants to pursue more-comprehensive measures and reach higher energy savings by providing additional incentives for more-aggressive upgrades.

Properties can earn incentives for assessments and for implementing energy-saving recommendations based on the savings potential of the project. Projects estimated to reach 10–24% savings earn an extra \$100 per unit for assessments, while projects that save 25–50% receive an additional \$125 per unit for assessments. After the assessment, PG&E provides additional incentives for installing comprehensive measures, classifying its performance-based incentives in two tiers. All qualified properties earn incentives starting at \$400 per unit. The first tier of savings starts at 10% savings; customers earn an extra \$25 per unit for each additional 1% of savings achieved. Properties that achieve 19% savings or more fall into the second tier. These buildings earn an extra \$75 per unit for each additional 1% of savings achieved, up to 50% savings.²¹

MIDWEST—CONSUMERS ENERGY'S MULTIFAMILY PROGRAM

Consumers Energy provides energy efficiency opportunities to customers through the Market Rate and Income Eligible Multifamily program. The program provides no-cost energy assessments and direct installation measures, as well as access to prescriptive and custom incentives for deep energy-saving upgrades in both common areas and tenant units.²² No-cost direct installation measures include in-unit and common-area lighting, aerators, showerheads, pipe wrap, and thermostats. Consumers Energy provides rebates that cover up to 50% of the project cost for more-comprehensive upgrades. Incentives are available to property owners for measures such as programmable thermostats, lighting controls, furnaces and boilers, insulation, windows, air-conditioning, and water heating.²³

Multifamily Program Highlights

- Addresses regional energy savings opportunities in residential lighting and water heating
- Provides energy assessments, direct installation measures, and comprehensive retrofit projects
- Provides customers with a one-stop shop
- Recruits participation of trade allies to communicate the benefits of prescriptive and custom energy-saving projects

The program operates as a one-stop shop for customers. Consumers Energy coordinates the energy assessments and direct installations, identifies deeper savings opportunities, and assists with the application process.²⁴ The program offers tracks for market-rate and affordable multifamily properties, with income-qualified properties receiving higher incentives than market-rate multifamily properties. Affordable multifamily residents are also eligible for expanded measures, including air sealing, insulation, smart thermostats, and replacements for some appliances, as well as for unique program offerings such as weatherization services.²⁵

NORTHEAST—EVERSOURCE MA'S RESIDENTIAL COORDINATED DELIVERY INITIATIVE

Eversource offers the Residential Coordinated Delivery Initiative for multifamily and single-family customers in Massachusetts. The initiative's goal is to provide comprehensive whole-building energy savings using a streamlined approach to create greater flexibility for property owners. This one-stop shop provides building owners with technical support services and implementation contractors to assist customers throughout the program process.²⁶

Residential Coordinated Delivery Initiative Highlights

- Addresses regional energy savings opportunities in residential air-conditioning and space heating
- Provides energy assessments, direct installation measures, and comprehensive retrofit projects
- Offers customers highly flexible savings pathways
- Provides customers with a one-stop shop
- Offers health and safety measures

While the Residential Coordinated Delivery Initiative is available to single-family homes as well, it uses a customizable approach for complex multifamily properties that allows program administrators to capitalize on unique savings opportunities and provide tailored incentives. The program offers energy assessments to identify cost-effective efficiency upgrades and replacements. The comprehensive assessments focus on the property's thermal envelope, as well as lighting and mechanical systems.²⁷ The assessments also identify in-unit improvements for tenants. The initiative offers property owners an individualized path for in-unit and common-area incentives and savings. Using a pay-for-savings incentive structure, Eversource offers incentives for insulation, air

sealing, duct sealing, heating, cooling, lighting controls, water-saving devices, and water heating equipment.²⁸

Looking Ahead

The programs highlighted in this brief are addressing regional energy-saving opportunities and implementing strategies to reach deeper savings by encouraging more-comprehensive energy-saving measures. Successful strategies include providing free or low-cost energy assessments and offering performance-based incentives or higher rebates for whole-building approaches. Such programs provide customers with multiple options and offer substantial incentives for deeper energy-saving measures.

Utilities can further encourage more-comprehensive upgrades in multifamily buildings by engaging building owners and managers. Many programs use direct installation measures or audits as a pathway for deeper measures, so utility administrators should target owners and managers as decision makers when marketing their low-cost energy efficiency programs.²⁹ Also, utilities can reach owners, raise program awareness, and promote whole-building upgrades by marketing directly to trade ally networks or affordable housing groups. Encouraging high energy savings in multifamily buildings offers residents and building owners benefits, including improved comfort, increased safety, and reduced energy burdens.

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