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EXECUTIVE SUMMARY

Apartment Hunters: Programs Searching for Energy Savings in Multifamily Buildings

In the hunt for energy savings, multifamily buildings are widely seen by energy efficiency program administrators as hard to reach. A number of challenges face multifamily building owners in undertaking energy efficiency in their properties, and program administrators in designing and implementing effective multifamily programs. Due to these challenges, multifamily households are often underserved by the energy efficiency programs they help to fund. A number of leading programs from across the country, however, are demonstrating that these challenges can be overcome, and that there is significant opportunity for cost-effective energy savings from the multifamily sector. This report recommends 10 best practices for designing and implementing effective multifamily programs and includes examples from leading programs. The results from these programs provide a snapshot of the possibilities for energy savings and reaching new customers.

BEST PRACTICES FOR MULTIFAMILY ENERGY EFFICIENCY PROGRAMS

The best practices we recommend provide strategies that program administrators can use to help building owners, managers, and developers overcome barriers to energy efficiency. These barriers include split incentives, limited financial and technical resources, uncertainty surrounding the potential benefits, and the time and complexity of tapping into energy efficiency programs. The best practices also help to confront some of the challenges program administrators face in designing programs that specifically target multifamily buildings. These challenges include integrating programs across commercial and residential portfolios as well as electric, gas, and water utilities, cost-effectiveness requirements, minimizing administrative costs, and encouraging owners to undertake projects with deep savings.

Case studies of programs currently utilizing these best practices are provided. The examples are not meant to be an exhaustive list but are used to illustrate how programs are incorporating one or more of the best practices.

The best practices and examples of programs using them are:

1. *Provide a one-stop shop for program services.* By providing building owners with a single point of contact throughout program participation (either at the utility or a partner organization), one-stop-shop programs can simplify the steps involved in each energy efficiency project and streamline any technical assistance that building owners may require.

   Examples
   - CNT Energy and Community Investment Corporation — Energy Savers
   - Low-Income Energy Affordability Network (LEAN) and the Massachusetts Utilities — Low-Income Multifamily Retrofit Program

2. *Incorporate on-bill repayment or low-cost financing.* Limiting or eliminating the upfront cost to building owners can enable them to undertake more substantial energy efficiency projects and to overcome traditional barriers related to the competition for scarce funding

for capital projects. Low-interest financing and on-bill repayment can help owners spread out over time the cost of energy efficiency projects.

Example

- Public Service Electric and Gas (PSE&G) Residential Multi-Family Program

3. *Integrate direct installation and rebate programs.* Direct installation programs which offer no-cost energy efficiency measures can provide an opportunity to connect with building owners, complete an onsite energy assessment, and encourage owners to take advantage of rebates for more extensive improvements such as HVAC upgrades, weatherization, common area lighting retrofits, and other building shell improvements. The dual approach also allows programs to address both common areas and residential units.

   Examples

   - Puget Sound Energy Existing Multifamily Building Program
   - ComEd, Nicor Gas, North Shore Gas, and Peoples Gas Multifamily Comprehensive Energy Efficiency Program

4. *Streamline rebates and incentivize in-unit measures to overcome split incentives.* Program administrators should combine both commercial and residential rebates into one easy process. They should also provide incentives to building owners that are sufficient to encourage them to invest in high efficiency products in their tenants' spaces, even if owners do not benefit directly from the energy savings.

   Examples

   - Austin Energy Power Saver Multifamily Rebates
   - Energy Trust of Oregon Existing Multifamily Program

5. *Coordinate programs across electric, gas, and water utilities.* For owners who want to undertake comprehensive retrofits or just participate in a direct installation program, it is a burden to participate in separate programs for each utility. Coordinating programs can simplify the process for building owners, allow them to benefit from greater overall savings, and minimize the disruption to tenants.

   Examples

   - ComEd, Nicor Gas, North Shore Gas, and Peoples Gas Multifamily Comprehensive Energy Efficiency Program
   - Puget Sound Energy and the Saving Water Partnership
   - Austin Energy and Austin Water

6. *Provide escalating incentives for achieving greater savings levels.* In order to encourage building owners to take on more extensive projects (likely more expensive and time consuming), program administrators can require a significant but achievable level of energy savings and offer escalating incentives based on the projected and realized savings for a project.

Examples

- New York State Energy Research and Development Authority (NYSERDA) Multifamily Performance Program
- Sacramento Municipal Utility District (SMUD) Multifamily Home Performance Program

7. *Serve both low-income and market-rate multifamily households.* Either through programs designed specifically for low-income housing or by providing extra services and incentives for low-income-qualified buildings, program administrators should account for the unique challenges associated with low-income housing.

   Examples

   - Efficiency Vermont Market-Rate and Low Income Multifamily Retrofit Programs
   - CenterPoint Energy Low-Income Multifamily Bonus Rebates

8. *Align utility and housing finance programs.* Incorporating utility customer funding at the time of such affordable housing refinance and redevelopment can yield deeper, more comprehensive energy efficiency improvements. These extensive renovations involve replacing outdated building systems, and utility customer funds can be used to help cover the incremental cost of installing more efficient equipment than would otherwise be required.

   Example

   - District of Columbia Sustainable Energy Utility (DC SEU) Low-Income Comprehensive Retrofit Program

9. *Partner with the local multifamily housing industry.* While the multifamily housing sector is complex, it is relatively well organized, with robust local networks of property managers and owners. Taking advantage of these networks to create partnerships with local associations of multifamily owners, managers, and contractors can help program administrators identify and connect directly with potential program participants.

   Examples

   - Austin Energy and the Austin Apartment Association
   - Massachusetts Low Income Energy Affordability Network (LEAN)
   - Efficiency Vermont and the Vermont Housing and Conservation Board

10. *Offer multiple pathways for participation to reach more buildings.* Not every building owner will be ready, financially or otherwise, to take on a substantial retrofit project. By offering multiple pathways to participation, programs can reach and build relationships with building owners who are interested in faster, less extensive projects.

    Examples

    - ComEd, Nicor Gas, North Shore Gas, and Peoples Gas
    - DC SEU

- Efficiency Vermont
- Energy Trust of Oregon
- NYSERDA
- Puget Sound Energy
- SMUD

RESULTS FROM LEADING PROGRAMS

The programs featured throughout this report demonstrate that well-designed multifamily energy efficiency programs that utilize the best practices recommended above can deliver significant cost-effective savings. The following table summarizes the savings per apartment unit for each of the programs, as well as the levelized cost of saved energy and cost-effectiveness testing results. [1]

Program	Annual budget	Annual participation	Annual savings per unit	Levelized cost of saved energy ($ per kWh and therm)[1]	Benefit-cost ratios[2]
CNT Energy Energy Savers	$2,505,952	Units: 4,126 Projects: 110	650 kWh 240 therms	Electric: $0.10 Gas: $1.00	TRC: 2.10 gas
Austin Energy Power Saver Multifamily Rebates	$1,600,000	Units: 18,213	433 kWh	Electric: $.0732	TRC: 1.3 UCT: 2.18
Energy Trust of Oregon Existing Multifamily Program	$6,046,110	Units: 21,765 Sites: 1,080	731 kWh 4 therms	Electric: $0.025 Gas: $0.412	UCT: 2.7 SCT: 4.7
LEAN Massachusetts Low-Income Multi Family Energy Retrofit[3]	$38,372,271	Units: 6,715(gas), 14,535 (electric)	165 therms 1209 kWh	Electric: $.145 Gas: $1.24	TRC: 1.73 electric, 1.43 gas
NYSERDA Multifamily Performance Program	$49,099,921[4]	Units: 28,429 Buildings: 411 Projects: 172	526 kWh 69 therms (2007-2012)	Electric: $.039[5]	S.I.R: 1.8
Puget Sound Energy Existing Multifamily Retrofit Program	$10,296,500	Units: 39,489	581 kWh 2 therms	Electric: $.037 Gas: $.36[7]	TRC: 2.42 electric, .91 gas UCT: 2.96 electric, 2.63 gas
Public Service Electric and Gas (PSE&G) Residential Multi-Family	$14,042,457[6]	Units: 2,295 Buildings: 79 Projects: 11	810 kWh 153 terms	Electric: Approx. $.03 to $.05 per	UCT: 1.39 TRC: 2.9

[1]The levelized cost of saved energy represents the costs to the program administrator or utility of acquiring the lifetime energy savings resulting from the program. It is calculated by discounting the costs of the program over the lifetime of the savings. Discount rates vary based on state regulatory guidelines.

Program	Annual budget	Annual participation	Annual savings per unit	Levelized cost of saved energy ($ per kWh and therm)[1]	Benefit-cost ratios[2]
Efficiency Vermont Multifamily Program for New Construction & Major Rehabilitation	$1,940,381	Units: 450 comprehensive services + additional rebates	Not available	Electric: $.07	TRC: 2.79
Sacramento Municipal Utility District (SMUD) Multifamily Home Performance Program	$1,700,000	Units: 1,200 (goal)	1,980 kWh 42 therms per unit (2009-2012)	Electric: $.08	Not available
New and Notable Programs					
CenterPoint Energy Low-Income Multifamily rebates	$287,250	Not yet available	Not yet available	Gas: $0.16[8]	UTC: 4.56 SCT: 4.70 PCT: 6.70
ComEd, Nicor Gas, and People's Gas Multifamily Comprehensive Energy Efficiency Program	$19,000,000	Units: 88,750 (goal) Projects: 900 (goal)	437 kWh (goal) 101 therms (goal)	Not available	Not available
DC SEU Low-Income Multifamily Comprehensive	$1,200,000	Units: 348 Projects: 5	2,222 kWh 33 therms	Not available	SCT: 1.88

Notes and sources: All figures are as reported through information requests submitted by each of the programs unless noted. [1] Levelized costs are as reported unless noted. [2]Benefit-cost ratios are determined using standard testing methods including the Total Resource Cost Test (TRC), Utility Cost Test (UCT), Societal Cost Test (SCT), and Savings to Investment Ratios (SIR). A value of 1 means the program costs and benefits, which are defined differently depending on the methodology used, are equal.[3] Participation, savings and benefit-cost ratios for the Massachusetts Low-Income Retrofit Program are reported statewide to the Massachusetts Energy Efficiency Advisory Committee (MA EEAC 2013). Levelized cost of saved energy was calculated using reported annual savings, utility costs, and average measure life and an assumed real discount rate of 5%. [4] Eight year NYSERDA program budget annualized. [5]Levelized cost of saved energy for System Benefit Charge funded activities only using a 5.5% discount rate as reported in NYSERDA 2012, Table 2-12. [6]Actual PSE&G 2012 expenditure as reported in Nowak et al 2013. [7]Levelized cost of saved energy calculated using PSE's reported savings, utility costs, and estimated average measure life (PSE 2013) and an assumed real discount rate of 5%. [8]CenterPoint Energy's levelized cost of saved energy calculated using projected savings, utility costs, and average measure life and an assumed real discount rate of 5%.

The opportunity for energy savings in the more than 20 million multifamily units nationwide is tremendous, making apartment buildings well worth the hunt for energy efficiency programs. The best practices recommended here and the programs that are utilizing them can help program administrators get on track to reach this large and growing sector.

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