

### PROGRAM DESIGN GUIDE:

# ENERGY EFFICIENCY PROGRAMS IN MULTIFAMILY AFFORDABLE HOUSING

Photo: NHT/Enterprise's R Street Apartments, Washington, D.C. by Rudy Matthews Photography.

Electric and gas utilities in the U.S. invest billions of dollars annually to help their customers become more energy efficient, often by making repairs and improvements to customers' homes and buildings. These investments are smart—they improve lives by reducing energy expenses, create healthier, more comfortable houses and offices, and improve community building stock. The resulting energy efficiency produces a better utility system with less pollution, creates local jobs, and delivers other public benefits.

Yet studies show vast amounts of cost-effective efficiency potential available in our nation's affordable housing, in multifamily affordable housing (MFAH) in particular. In other words, a lot of the energy delivered to affordable housing is wasted—it simply goes out the windows or up the chimney.

This is an alarming outcome because residents of affordable housing can least afford to waste valuable energy—savings from efficiency could materially improve their household budgets, and efficiency repairs such as improving ventilation systems can produce significant health benefits.

Affordable housing is often viewed by efficiency professionals as “hard to reach” because many building owners have been unresponsive to outreach efforts of efficiency programs even when the program offers valuable incentives to encourage the owner to make efficiency repairs or improvements. There are many reasons why this

occurs. One reason is that owners of affordable housing often have very tight budgets for building projects, not just efficiency projects. They also often have complicated financing arrangements that make it difficult to borrow money to fund a project that is outside of the repairs planned in the original financing. Another reason many owners of subsidized housing do not respond to program incentives is that utility allowances from housing agencies can cloud decisions about reducing energy expenses. Many owners and residents lack information about energy usage in their buildings. To further complicate the matter, if



Friendship Court, Charlottesville, Virginia. NHT-Enterprise invested over \$250,000 in high-efficiency HVAC systems, appliances, and lighting, reducing annual operating costs by \$50,000.

tenants pay the cost of utility services the owner might not realize savings from reduced energy use.

Whatever the reasons that have caused MFAH to escape the reach of efficiency programs, the outcome is plain and problematic: many multifamily affordable buildings need efficiency repairs and improvements. Forgoing needed efficiency work does not “save” money in a real way, it simply shifts the costs. Low income families living in the buildings pay in the form of higher utility bills or rents, and often in the form of unhealthy homes. Taxpayers pay the cost in the form of utility allowances for subsidized housing. All utility customers pay in the form of wasted energy and higher utility rates.

Another problematic outcome is that owners and residents of MFAH have not participated in or benefited from efficiency programs to the degree that owners and residents of other building types have.<sup>1</sup>

The **good** news is that our research—presented in this guide—strongly suggests that well-designed efficiency programs can indeed reach MFAH and can enable utilities to capture cost-effective efficiency potential. Program experience offers many useful and encouraging lessons about how to reach affordable housing in ways that will benefit the utility, the building owner, the residents, and the community at large.

This guide is intended to explain specific best practices to efficiency program professionals: program designers and administrators, utility staff, regulators, and other stakeholders. We provide 12 specific and proven strategies for utilities to help owners invest to improve MFAH in their communities.

## WHY TARGET MULTIFAMILY AFFORDABLE HOUSING?

There are several compelling reasons utilities and all efficiency programs should devote attention and resources to reach MFAH. As a foundational matter, helping low-income customers meet their basic energy needs is an important policy objective. Utilities across the country offer energy assistance and weatherization services through well-established and long-standing programs. Unlike bill assistance programs, efficiency improvements in housing will create lasting capital improvements.

Sustaining the affordable housing stock—that is, maintaining the existence of housing units as affordable—is an important goal at the national level and for many major cities.<sup>2</sup> Improving the energy efficiency of affordable housing directly furthers these policy goals by reducing energy waste, reducing operating expenses, and improving the condition of the housing. Utilities can and must play a central role in this important endeavor.

Capturing cost-effective efficiency in MFAH is also a compelling business opportunity for utilities and their customers. By capturing efficiency potential utilities obtain an energy resource.<sup>3</sup>

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***Existing MFAH buildings are a vast source of efficiency potential for utilities. Several studies estimate cost-effective efficiency gains of 20 to 30 percent are available.***<sup>4</sup>

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Capturing this efficiency potential enables utilities to meet energy savings targets, reduce system costs, defer or avoid distribution system upgrades, and reduce marginal line losses. The cost of obtaining these system benefits delivers value directly back to customers—increasing the value of the building stock, reducing expenses, improving the health and safety of tenants, and more.<sup>5</sup>

Multifamily housing is expected to grow as a source of sales, customer counts, and peak loads for most utilities. Among the many factors driving this trend are a fundamental shift toward urbanization in the United States, an increasing share of renters in the market, and an aging population.<sup>6</sup> Deploying efficiency programs to effectively reach these buildings makes sense.

For these many reasons, utilities should actively explore how best to structure programs to help owners capture all

In this guide, we generally use “affordable housing” to mean both housing that is subsidized through federal and state programs, such as the Low Income Housing Tax Credits, and unsubsidized housing deemed “affordable” because of rent levels. We use the term “multifamily” generally to refer to buildings with more than four units.

cost-effective efficiency in MFAH.

## BEST PRACTICES—SUMMARY

It is often difficult for an owner of MFAH to invest in repairs and improvements, even with incentives and even if the project would provide great value to residents and pay back in a reasonable time. MFAH is the building sector perhaps most burdened by challenges that inhibit efficiency investment, yet affordable housing residents are perhaps most in need of efficiency improvements.

We suggest 12 best practices that are actionable for policymakers, regulators and program administrators to better reach these important buildings:

### Policy and Planning

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#### 1 **Establish a goal to capture all cost-effective efficiency in MFAH.**

To reach MFAH, programs will require adequate funding levels sustained over time. It is important for a program to commit to capture all cost-effective efficiency in the sector. An important first step is to assess the energy efficiency potential in the local MFAH building stock, including not only the direct potential energy savings, but also non-energy benefits, and long-life measures. A commitment to capture all cost-effective efficiency will give program teams the needed support and flexibility to implement good programs with a process of continual improvement.

#### 2 **Assure coordination and count savings across electricity, gas, and water programs.**

Efficiency projects in MFAH often result in savings in electricity, gas, and water. Because these utilities are often supplied by different entities, there is risk that utilities may not encourage projects that aim at comprehensive savings. There are models that help solve these problems, including a cost-effectiveness framework that creates incentives for comprehensive projects by allowing the lead utility to capture the value of savings across all fuels and water, or apportioning the costs and benefits to the appropriate utility. It is important for program administrators to engage with counterparts at other utilities on methods to assure that opportunities for savings in all resources are explored early in efficiency projects.

#### 3 **Assure that cost-effectiveness tests work for MFAH.**

**a. Account for non-energy benefits.** Non-energy benefits (or non-energy impacts) include many very real values directly resulting from efficiency projects, such as health benefits (for instance, from reduced mold as a result of better humidity control) and reduced maintenance costs. Because these values are often hard to measure with precision (or costly to do so), they have often been excluded. They should be included; the uncertainty associated with approximate values is better than systematic undervaluation.

**b. Apply cost-effectiveness tests across a portfolio.** Programs targeting MFAH should be treated with some flexibility due to the unique challenges of the building sector. Cost-effectiveness thresholds should be met at the portfolio level. This flexibility allows cost-effectiveness to be achieved without applying a formulaic approach to every project or program.

#### 4 **Improve building owners' access to energy usage information.**

Access to basic information on the energy performance of their buildings is a problem for many owners of multifamily affordable buildings, especially for those buildings with separately metered units.

Utilities must be partners in the endeavor to remedy information barriers. Utilities should assure they have good processes for delivery of whole-building utility usage information to building owners. First, regulators should assure utilities have express authority to aggregate information from multiple individual customer accounts into a whole-building energy usage summary for building owners. Second, utilities should offer processes that help the owner obtain the information with minimum practical difficulties, such as through an automated download to benchmarking tools.

### Program Design

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#### 5 **Develop programs specifically targeted to MFAH.**

MFAH is a unique, specialized building sector. Regulators and administrators must tailor programs to the MFAH sector. It is not enough to make MFAH eligible for other residential or commercial programs.

In addition, program administrators should tailor outreach and program features to specific building types. Groups to target include subsidized housing, such as buildings that receive assistance from the U.S. Department of Housing and Urban Development (HUD), buildings financed with low-income housing



tax credits, and those with central cooling and heating. Master metered buildings should also be a target because owners may be more receptive to efficiency improvements with all energy savings realized directly on the owner's utility bill.

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**6 Structure incentives for whole-building savings.**

Tying incentives to the amount of efficiency realized in the whole building encourages the owner to implement the combination of measures most likely to produce the highest levels of savings. Prescriptive incentives, such as contributions to lighting projects or appliance replacement, can also be useful, but should not be the only pathway to obtain or determine incentive levels for larger projects.

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**7 Assure incentives are reliable at project outset.**

Building owners should be able to determine the amount of incentive contributions at the time projects are likely to be approved and budgeted. "Pay for savings" incentives can fit this model if they are based on estimates at project design and do not depend on post-project measurements.

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**8 Support benchmarking, audits, and other assessments.**

Incentives for intensive energy audits (e.g., ASHRAE Level II) are a common program feature and a best practice, but it is important to also support owners performing benchmarking and less intensive energy needs assessments to approximate the efficiency potential in their buildings.

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**9 Support a "one-stop shop" for building owners to access integrated program services.**

Program experience shows that building owners benefit from access to people who can help navigate program offerings and provide project development and technical assistance, such as initial assessments, audits, and project support. The individuals in a "one stop shop" can become trusted advisors to local building owners. The people in this function should be specialists and empowered to build relationships with local partners, such as lenders, contractors, and utility staff. It is important also to preserve flexibility for building owners to use other resources for certain functions—they should not be required to use a "one stop shop" as the exclusive path to all program offerings.



Briarcliff Apartments, Vienna, VA.

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**10 Build partnerships with key local market participants.**

Reaching owners and other key people at properties that can benefit from efficiency measures is often a challenge for efficiency programs, even with very appealing incentive packages. Establishing relationships and partnerships with local market participants is essential and will enable much greater market penetration. One of the key tasks of an efficiency program administrator should be to engage with partners in the local MFAH market, including state housing finance agencies, community development financial institutions (CDFIs), local weatherization assistance program providers, multifamily lenders, and housing development departments.

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**11 Help building owners finance efficiency projects.**

It is difficult for most owners of MFAH to obtain a new loan for the purpose of funding an efficiency project. Program administrators should consider these strategies to help building owners obtain needed financing:

**a. Target incentives to fit with conventional building financing events.** Both owners and lenders may be most open to financing an efficiency project when the added funds needed are included with a purchase, refinancing, or rehabilitation loan. This is the time when owners and lenders normally consider and plan for capital improvements. Program administrators should seek to reach owners in preparation for conventional financing events, and incentive offerings should be tailored to owners in the conventional financing process, such as offering to fund a "green" physical needs assessment acceptable to a lender.

**b. Partner with lenders active in the local market.**

Most markets have several lenders that handle a large amount of multifamily affordable financing (purchase, refinance, and rehabilitation loans), often including CDFIs with specialty products. Many multifamily lenders want to be in a position to educate their borrowers—building owners—on opportunities to obtain program incentives for improvements. Program administrators should seek to engage local and regional lenders to find ways to work together to reach owners in the process of planning refinancing, purchasing, or rehabilitating.

**c. Explore on-bill payment arrangements.**

Implementing and operating a financing program can be challenging for any utility, but on-bill payment arrangement can enable certain building owners to undertake improvements they might not otherwise consider. On-bill payment arrangements can solve a problem for MFAH owners because the loan payment is offset by utility savings on the same bill, and therefore might not be treated as additional debt by existing lenders. Program administrators should engage local property owners to understand whether an on-bill program would be valued in the market.

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**Provide robust quality assurance.**

Policymakers, lenders, property owners, and other key stakeholders need assurance that energy savings in MFAH buildings are real and lasting. This requires attention to quality assurance. Best practices include support for an energy analyst throughout the program process, so that energy audits, project

specifications, project inspections, and other technical functions are conducted consistently. Training and monitoring of installation professionals and post-installation verification and quality inspections are important as well.

Utilities have many compelling reasons to help make affordable housing more energy efficient—it captures cost-effective efficiency potential, provides residents with meaningful benefits, and helps to sustain affordable housing for the community.

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***The hard question for program administrators has been how to effectively reach owners—what assistance will work to encourage owners to make the needed efficiency related repairs and improvements?***

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With the best practices provided here, program administrators can embrace the challenge of reaching affordable housing to capture efficiency and deliver value to their customers.

These 12 best practices can be incorporated by program designers and administrators into a program framework that includes other conventional elements. It is also important for all programs to maintain a process to explore new interventions with pilots to test new approaches, such as operator training, retrocommissioning, and better energy reports.

**ABOUT THE ENERGY EFFICIENCY FOR ALL PROJECT**

The mission of the Energy Efficiency for All (EEFA) project is to bring together the energy and housing sectors to tap the benefits of energy efficiency for millions of Americans living on limited incomes. We work with a range of partners in 12 states to promote effective utility energy efficiency programs for affordable building owners and healthy and affordable housing for residents. We blend expertise in affordable housing, energy efficiency, building ownership, and utility engagement. We work to support local groups by providing tools and resources that can help them increase energy efficiency opportunities for underserved tenants in their states.

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