



# Empowering Communities to Overcome Barriers to Multifamily Energy Efficiency

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July, 2013

## ABSTRACT

Multifamily housing has been a particularly difficult area for efficiency program implementers to penetrate due to a variety of specific and intractable barriers that the sector presents. Many existing efficiency programs underestimate the issues posed by these barriers and do not account for them in their program designs.

MIT's Energy Efficiency Strategy Project conducted research over the last year on efficiency market barriers in tenant-occupied rental housing. This paper reports on a proposal to overcome some of the social and structural barriers that make this segment a difficult one to penetrate. Our research particularly considered how city partnerships with efficiency programs provided by energy utilities could be designed to help form a solution, with Cambridge, Massachusetts partnering with NStar Electric and Gas as a potential pilot site.<sup>1</sup>

One problem to be addressed is that traditional utility programs are designed primarily to overcome financial barriers to energy efficiency, but that the most problematic barriers in the multifamily sector are instead social in nature. To unlock the full potential of energy efficiency in the multifamily sector, we need a new paradigm for energy efficiency program design and delivery.

Traditional residential efficiency programs rely primarily on financial incentives, and have market-based participant recruitment and retention strategies. In this paper we propose a new model where a community-based program implementer offers individually-tailored retrofit terms, uses social pressure as well as financial incentives to motivate participation, and takes an active role in moving residents and property owners through the program participation pipeline.

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<sup>1</sup> This research was carried out as part of the Energy Efficiency Strategy Project (EESP), based at the MIT Department of Urban Studies and Planning and led by Harvey Michaels (hgm@mit.edu). We are grateful for the support for this work provided by NSTAR Electric and Gas, the U.S. Department of Energy and its National Renewable Energy Lab, and Edison Foundation Institute for Electric Efficiency.

## INTRODUCTION

Energy efficiency is a growing field and in recent years has become an increasingly salient economic, environmental, and political priority. Programs that encourage and incentivize energy efficiency investments have been developed by utilities, private and non-profit actors, and all levels of government. These programs target efficiency improvements in many sectors, from housing to industrial facilities to transportation. However, due to the unique barriers that must be overcome in each of these settings, energy efficiency programs have achieved greater penetration in some market sectors than in others.

The multifamily housing market presents several unique barriers that are often ignored by traditional energy efficiency programs. These programs generally rely on monetary incentives to motivate participation, which is adequate when barriers are primarily financial. However, when social and structural barriers are also present, efficiency program design must contain elements that address these as well.

The concepts presented below were developed as part of a multifamily energy efficiency pilot program designed by a graduate practicum course in the Department of Urban Studies and Planning (DUSP) at the Massachusetts Institute of Technology to be implemented in the city of Cambridge, Massachusetts.

Due to the nature of its housing market and the willingness of institutional actors to invest in energy efficiency, Cambridge, Massachusetts presents an excellent testing ground for new program marketing and delivery mechanisms. Below, I detail the specific challenges that would be faced in the deployment of a multifamily energy efficiency program in Cambridge, and lay out a new model for addressing and overcoming these barriers. My findings and recommendations were developed in collaboration with fellow graduate students working on the practicum projects and are informed in large part by discussions with energy efficiency practitioners who assisted the practicum course in the pilot design process.<sup>2</sup>

## SOCIAL AND STRUCTURAL BARRIERS TO MULTIFAMILY ENERGY EFFICIENCY

The primary social impediment to efficiency in the multifamily sector is the lack of resident control in building energy decisions. By its nature, multifamily housing involves a broader and more complex set of building-level stakeholders than the single-family housing sector. In addition to the individual residents of each housing unit, a separate entity such as a landlord or condominium association is generally present and responsible for whole-building decisions.

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<sup>2</sup> The research team was supported by the MIT Dept of Urban Studies and Planning's *Community Efficiency Practicum* in the Spring 2013, led by Professors Harvey Michaels and Lawrence Susskind, assisted by Brendan McEwen. The Practicum students discussed their findings at the *MIT Energy Innovations Symposium* held at MIT on April 26, 2013 attended by many efficiency leaders, who offered advice throughout the semester including but not limited to:

- NStar Electric and Gas, City of Cambridge, US Department of Energy, MA Department of Energy Resources and Clean Energy Center, MIT Fraunhofer Center
- Efficiency service providers: Conservation Services Group, Next Step Living, New Ecology
- Northeast Energy Efficiency Partnerships and the American Council for an Energy Efficient Economy.

While a single resident may make some energy improvements autonomously, most energy efficiency upgrades must be implemented at the building scale. The diffusion of decision-making power among various actors makes it difficult to obtain commitment to participate in efficiency programs in multifamily buildings.

In rental housing, this issue is typically framed as a split incentive problem. Because the tenant often pays for energy use in rental housing, the property owner has no direct incentive to invest in energy improvements. And because the tenant does not have a long-term guarantee to the energy savings and is typically unable to independently arrange home improvements, residents also have little incentive to finance expensive capital upgrades. Neither actor has a full incentive to invest in energy efficiency. Unless landlords and tenants mutually agree on the need for home improvements and arrange an acceptable cost sharing agreement, it is unlikely that the efficiency of a rented building will improve.

Condominiums and cooperatively owned buildings face a similar issue. Even in cases where multifamily housing residents own their own units, they typically do not have full control over their energy consumption. Often, a homeowner association or coop board must agree to any structural improvements in individually-owned units, and these institutions often act as impediments to energy efficiency programs. Furthermore, multifamily buildings typically share a single heating system, and an individual owner-resident is unable to take action to improve it without the consent of other building stakeholders.

Because of these issues, it is difficult to obtain the needed approval for whole-building energy upgrades in the multifamily sector. For an interested resident to substantially improve the efficiency in their home, they must convince neighbors and building owners to buy into the upgrade. This laborious task would deter all but the most committed and dogged residents.

## **LIMITATIONS OF CURRENT PROGRAM DESIGN AND DELIVERY PRACTICES**

Traditional energy efficiency programs are not designed to address the barriers presented by distributed decision-making and building control in the multifamily housing sector. In order to overcome the issues described above, a program implementer must address non-financial barriers in its program design, it must offer individual outreach and support to potential participants, and it must display a clear and streamlined mechanism for program participation. Current standard practices in multifamily efficiency do not address these needs. Below, I discuss several aspects of current multifamily efficiency programs that limit their potential to achieve energy savings in the multifamily sector.

*Focus on Financial Barriers.* As noted above, most efficiency programs rely primarily on financial incentives to encourage program participation. The cost of energy upgrades can certainly be significant and many potential participants require financial support—whether in the form of direct rebates or lending products—before committing to program participation. However, upfront costs are rarely the only reason that potential participants might hesitate. In addition to cost concerns, residents may be turned off by the time-intensive participation process, trust issues, a lack of information about benefits, or any number of related factors.

By using financial incentives as the primary tool to encourage participation, traditional program implementers ignore the importance of these other barriers and implicitly assume that they can be overcome if the monetary reward is large enough. Particularly in the multifamily housing sector, financial incentives alone are not enough to enable energy efficiency.

*Lack of Individual Outreach and Support.* Another limitation results from the largely passive role that traditional efficiency programs take in soliciting participation. Multifamily residents interested in efficiency face a difficult task in recruiting neighbors and building owners. This creates both a need and an opportunity for an aggressive program implementer that is able to encourage residents to take on this task and can provide resources in communicating with other building-level stakeholders.

However, most efficiency programs offer little in the way of individual support, instead relying on participants to self-motivate and simply respond to available financial incentives. While this is less of a problem in situations where the primary impediment to efficiency is financial, this approach is ill-suited to dealing with the social complexity of the multifamily housing sector.

*Complexity of Program Offerings.* These problems are compounded by the ambiguity with which traditional efficiency programs are offered to the multifamily sector. In Massachusetts, there are separate program streams for residential buildings with up to and greater than 4 units. Low-income residents are also eligible for additional program offerings. Different programs may serve to provide upgrades to residential units and whole-house systems, requiring coordination between multiple utility programs to undertake a comprehensive whole-building energy upgrade. To prospective participants, the presence of multiple efficiency programs can be confusing.

Program administrators at Mass Save—the primary energy efficiency initiative of the state’s major utilities—have attempted to address this problem by creating a Multifamily Market Integrator (MMI), which is intended to assist interested residents by making clear which programs and rebates they qualify for. However, local energy efficiency practitioners report that there is still substantial confusion and a lack of transparency around the program that a given resident should participate in.<sup>3</sup> Additionally, while the MMI is able to refer potential participants to the managers of programs for which they are eligible, it is not used to coordinate all appropriate utility programs for the client.

## **COMMUNITY-BASED PROGRAM DELIVERY METHODS**

Many of these limitations can be overcome by adopting a community-based approach to energy efficiency in the multifamily sector. Because of its limited scope, a local program has a significant advantage over statewide program offerings due to the flexibility that it grants to implementers to respond to local contexts and invest in relationships with community stakeholders and organizations. This flexibility also allows locally-scaled efficiency programs to take advantage of several methodological approaches to program delivery that would be difficult to implement at a larger scale. Below, I present the background on several of these approaches and demonstrate how they have already begun to be used in the efficiency field.

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<sup>3</sup> Discussions with practicum symposium attendees.

*Community-Based Social Marketing.* One important program design tradition that can assist in creating a locally-tailored efficiency program is Community-Based Social Marketing (CBSM). CBSM draws heavily from social psychology and employs a methodology that encourages behavioral changes that achieve policy goals. CBSM program architects begin by identifying the specific behaviors that, if changed, would achieve desired program outcomes. They then construct a comprehensive marketing and outreach campaign built around consumer psychology and social network theory that encourages targeted populations to adopt these behaviors. Potential strategies that might be deployed by a CBSM campaign could include providing a great number of resources to early adopters and relying on social networks to diffuse their behavior, creating a mechanism to highlight local community members who are (and are not) adopting desired behaviors, or soliciting token commitments from community members before asking that they engage in deeper behavioral changes.

Much of the theory behind Community-Based Social Marketing is based on the work of Doug McKenzie-Mohr, whose book *Fostering Sustainable Behavior* (McKenzie-Mohr 2011) lays out a way of promoting behavioral change. CBSM principles are already being used in the energy efficiency field, as summarized by a recent ACEEE white paper (Vigen and Mazur-Stommen 2012).

The power of CBSM is in integrating social networks and social pressure directly into program marketing efforts. In an energy efficiency context, such an approach is crucial if program administrators hope to move beyond easily-implemented measures and easily-convinced participants to instead actively penetrate hard-to-reach markets.

*Local Stakeholder Assessment.* A second methodology that can be complementary to CBSM in matching program design to market barriers is Stakeholder Assessment, a tool that allows program implementers to understand the viewpoints of the various parties concerned with a given initiative (Susskind, Thomas-Larmer and McKearnen 1999) (Schenk 2007). Program administrators must understand the categories of stakeholder groups that are concerned with multifamily energy efficiency, and identify program marketing and delivery combinations that would be effective in obtaining their buy-in. To do this, administrators must gauge the interests and motivations of a variety of stakeholders including landlords, tenants, property managers, contractors, realtors, heating assistance program managers and other non-profit organizations, and institutional actors such as utilities and local governments. Administrators must also interview landlords and tenants in buildings that have already undergone energy upgrades in order to understand the factors that led to the decision to pursue a retrofit. This process will give program designers a clearer idea of the levers that must be pulled to encourage greater take-up in efficiency programs, and how best to grasp them.

By conducting a thorough stakeholder assessment to understand the challenges to program implementation in a local context and by utilizing CBSM principles in designing a program that encourages more energy efficient behavior, administrators may create a program that effectively counters specific institutional barriers to energy efficiency.

As with CBSM, stakeholder assessment allows program administrators to benefit from a local approach to energy efficiency. Discussions with local stakeholders allow administrators to identify institutional strengths and barriers specific to a given community, and implementers can

then respond to these local circumstances directly through a CBSM marketing and outreach effort. While the overall direction of locally-scaled programs should be similar across communities, the dual methodologies of stakeholder assessment and CBSM will allow implementers to optimize program offerings and outreach strategies to specific local needs.

*Market Segmentation.* The multifamily housing market can be incredibly complex, both because of the great number of stakeholder groups with an interest in a building's energy use and the heterogeneous array of living and ownership arrangements in the sector. One way to reduce this complexity is to segment the market by key attributes (such as ownership characteristics, residency status, or building characteristics) and develop outreach and retrofit strategies geared specifically for these sub-sectors.

Market segmentation is a trending topic among efficiency program implementers, who see it as a useful tool for overcoming entrenched barriers in the multifamily sector (McKibbin 2013). While Mass Save's efficiency programs already include some degree of segmentation by customizing options for large and small multifamily buildings, there is more that could be done to custom-tailor program offerings to specific sectors.

For example, while Cambridge's large number of small-scale multifamily property owners could be considered a significant hurdle for program implementers, it could also be treated as an opportunity to target landlords who also live in the buildings that they own and rent. These resident-landlords could be treated as a distinct market segment, and an implementer could develop a specialized program outreach channel to engage them. Other useful market segments in the Cambridge area could include:

- Oil-heated homes that would benefit from conversions to less expensive heating fuels.
- Vacant units, which offer convenient timing for energy upgrades and are relatively common in a housing market with such dramatic turnover.
- Student housing units, very common in Cambridge, in which residents could be targeted through an outreach effort conducted in partnership with local universities.

In a locally-scaled program, implementers can more easily identify common traits in the multifamily housing market that are strong in a given community and develop a custom outreach approach in recognition of them.

*Incorporation into Existing Programs.* Community-based approaches to energy efficiency are quickly emerging in response to the inability of standard programs to address specific market barriers and serve hard-to-reach markets.

Some of the more innovative community-based approaches have grown out of the US Department of Energy's Better Buildings Neighborhoods Program (US Department of Energy 2013), which has served as an incubator for program design innovations. DOE provides funding for over 40 local and state energy efficiency program administrators to experiment with new approaches to program design and implementation. Several new energy efficiency delivery mechanisms have grown out of the program, and they offer promising opportunities for the future of the field. Many of these mechanisms apply to the broader residential energy efficiency space, but could be used to target the multifamily sector specifically. The program delivery approaches being piloted through the program include:

- Partnerships with local community organizations and giving these groups incentives to market an efficiency program to their constituencies, as with Los Angeles County's Energy Champions program.
- Schemes that certify program participants and create a mechanism for public recognition. Several BBNP programs advertise the efficiency of participating homes through the use of yard signs. More comprehensive systems of certification and recognition are also being developed, including DOE's Home Energy Score.
- The use of deadline-based marketing to encourage potential participants to commit to an energy upgrade, as used by Efficiency Maine and others.
- Programs that coordinate the purchasing efforts of multiple participants with a single contractor to achieve discounts from bulk purchases, as with the Solarize model pioneered by the city of Portland, Oregon.
- Outreach approaches that partner with local anchor institutions and major employers to encourage participation by leveraging social networks. The Michigan Saves program is been a model for this approach through its successful partnership with Grand Valley State University in Grand Rapids to market and implement their energy efficiency program to university employees.

In the Boston area, efficiency program implementers have also utilized community-based approaches to energy efficiency. In 2010, NSTAR launched three community-based pilot programs in New Bedford, Chelsea, and Boston's Chinatown as part of its new Community Mobilization Initiative (NSTAR 2011). Next Step Living, a local energy efficiency services provider, is also notable for establishing partnerships with local environmental groups in the communities they serve. The Boston-area Home Energy Efficiency Team is another notable example, coordinating teams of volunteers to conduct energy efficiency "barn raisings" in homes and institutional buildings throughout the region but particularly in Cambridge (Home Energy Efficiency Team 2013).

## **CHARACTERIZATION OF THE CAMBRIDGE MULTIFAMILY HOUSING MARKET**

A locally-scaled efficiency program must be flexible to the needs and attributes of the community that it targets and serves. Below, I demonstrate some of the factors that might inform the development of a local efficiency program in Cambridge, Massachusetts. Cambridge's large and institutionally complex multifamily housing market presents both added difficulty in implementing a successful program as well as great potential for energy savings if these challenges can be met.

The city of Cambridge, Massachusetts is dominated by multifamily housing, with 84% of the city's households located in multifamily buildings (US Census Bureau 2011). This indicates that local program designers should pay close attention to the multifamily sector. Beyond the simple magnitude of multifamily housing in the city, several aspects of Cambridge's demographics and built environment make multifamily energy efficiency both especially difficult and very important to meeting the cities' climate and energy goals.

First, Cambridge has high rates of both rental housing and condominium ownership, which make the barriers to multifamily efficiency particularly salient. 65% of the city's population lives in

rental housing (US Census Bureau 2011), and condominiums account for 27% (Cambridge Community Development Department 2010). Therefore, any approach to unlocking energy savings in Cambridge's multifamily sector must address the different barriers discussed above that are presented by rental units and condo ownership.

Additionally, due largely to the city's strong university presence, Cambridge has a very young and mobile rental demographic. Students account for 27% of the city's adult population, and 53% of the city's rental units have a primary householder under the age of 35. Additionally, 40% of renters have lived in their current residence for less than five years (US Census Bureau 2011). These factors exacerbate the split incentive problem, as a young and transitory rental population has little incentive to invest in long-term upgrades to their homes.

Cambridge's tight housing market also contributes to the problem. Although property owners have no direct incentive to invest in the efficiency of rental units, they can benefit indirectly by using the promise of low energy costs to attract prospective tenants. In Cambridge, however, the rental vacancy is under 3%, compared to a national average of nearly 8% (US Census Bureau 2011). This indicates that landlords in Cambridge have little difficulty finding tenants to fill empty units, and that they therefore may feel less pressure to lower energy costs as an advertising strategy.

Cambridge's heterogeneous landlord population also raises problems for energy efficiency. While data on ownership characteristics is incomplete, interviews with individuals experienced with the market indicate that small-scale property owners own a large number of rental properties.<sup>4</sup> This makes organizing an energy efficiency program difficult, as there is less opportunity to scale the program quickly by working with a small number of large-scale property owners. Additionally, many landlords use third-party property management firms to run the day-to-day operations of their properties. This adds an additional layer of complexity to an efficiency program, as the primary point of contact for a rental property may not be empowered to authorize large efficiency improvements.

But despite the added difficulties that Cambridge presents to multifamily energy efficiency programs, there is also ample opportunity for energy savings. Cambridge has a very old housing stock relative to the rest of the nation, with 52% of rental units built before 1940 (US Census Bureau 2011). As Massachusetts did not enact its first residential energy code until 1975 (Bernstein, et al. 2002), it is likely that many of these units are poorly insulated and could achieve substantial energy savings through a retrofit. Additionally, though it is rare in the rest of the nation, the northeastern United States is highly reliant on inefficient and costly oil heat. Fuel oil is less prevalent in Cambridge's rental housing stock than elsewhere in the state, but 13% of units are still heated by fuel oil. This presents an additional opportunity for substantial savings through a successful multifamily energy efficiency program.

The demographics and built environment of Cambridge present significant barriers to multifamily energy efficiency but also promise substantial savings if these can be overcome. Therefore, Cambridge is an excellent area in which to test new program design elements that could unlock deep savings in the multifamily sector. Below, I suggest several elements of a

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<sup>4</sup> Discussions with practicum symposium attendees.



community-based pilot program that targets the social and structural barriers to energy efficiency in Cambridge.

## **PROGRAM DESIGN AS A TOOL FOR MOTIVATION AND EMPOWERMENT**

Through discussions with local energy efficiency program operators, practitioners, and stakeholders, the MIT DUSP practicum group assessed the specific needs of the multifamily sector in Cambridge, and weighed the options for encouraging greater participation through a community-based program.

Based on our assessment of the social barriers to multifamily energy efficiency, the group determined that a primary goal in program design should be the empowerment of multifamily residents to implement energy upgrades in their homes. We identified various strategies that could be effectively deployed to accomplish this in a local context. These strategies can be loosely bundled into those that *drive interest* in efficiency programs and those that *guide interested tenants* through the program participation pipeline. The essential approach that we suggest is to use the strength of local social networks to establish a foothold in building-level stakeholder communities, and to provide robust support on an individual basis to move from an interested resident to a retrofitted building.

*Establishing Resident Interest.* In traditional approaches to energy efficiency, outreach is often conducted through standardized mass media channels, like radio advertisements or utility bill inserts. While these approaches can be useful, they do not leverage the strength of social relations as suggested by CBSM theory. Fortunately, the field has begun to move beyond these traditional methods and utilize social marketing techniques more in energy efficiency outreach.

This progress is encouraging, but there is a greater opportunity to leverage social ties in efficiency outreach through locally-based program implementers that have direct access to targeted communities. In our proposal for a Cambridge multifamily pilot, the DUSP practicum group recommended that a single designated program implementer be tasked with developing relationships with locally significant anchor institutions, such as faith groups, universities, local schools, and other community groups and also with conducting custom-tailored program outreach to these groups' constituencies. This approach would significantly integrate the roles of community based outreach practitioner and program contractor, in contrast to the current structure where outreach practitioners such as the Home Energy Efficiency Team and Cambridge Energy Alliance market multifamily programs with little coordination with program contractors.

A crucial element in this outreach approach would be the recruitment and development of community ambassadors from these targeted constituencies. These ambassadors would be previous participants in utility efficiency programs who would be asked to act as success stories for energy efficiency by sharing quantitative data regarding their energy savings and by providing testimonials about improved comfort and other benefits to their community organizations. By leveraging trusted community groups and demonstrating the viability of efficiency upgrades through the experience of local residents, implementers can use social ties to encourage interest in efficiency.

*Guiding Residents Towards Participation.* In the multifamily sector, unfortunately, resident interest is not enough to initiate an energy upgrade. However, the benefits of efficiency are more likely to appeal to residents than building owners, and program implementers can use an interested resident as a foothold to gain the support of other building-level stakeholders and then move towards a retrofit.

The DUSP practicum group recommended that a single program implementer at the community level be given broad authority to work with interested tenants in any building in their geographic area (rather than being limited by existing program divisions to buildings of a certain size or ownership arrangement). The implementer would also be empowered to create a customized retrofit and financing plan for a given building that reflects both the physical needs of the building and the practical needs of the various building stakeholders.

The program implementer would conduct one-on-one follow-up with interested residents and also develop a market segmentation strategy to determine what upgrades are required and what level of support is needed from neighbors and building owners. After developing a proposed work plan and financing plan for a building, the implementer would then provide direct assistance in obtaining the consent of these other building stakeholders. This process of continued follow-up and support would ensure that potential program participants move through the program participation pipeline and that resident interest is successfully converted to building retrofit.

A community-level implementer that is invested in social ties has the opportunity to build a larger and more assertive relationship with prospective efficiency program participants than the implementer of a traditional statewide program. In a hard-to-reach market such as the multifamily housing sector, a level of individual attention such as this is crucial to achieve a significant rate of building retrofits.

## **ANTICIPATED BARRIERS**

The approach to multifamily energy efficiency described above is a significant departure from standard practice in several ways. As such, it likely will not be implemented and scaled with great ease. Below, I present several areas of difficulty that can be expected to confront a community-based model of multifamily energy efficiency program administration, and how they may be addressed.

*Overcoming Institutional Inertia.* As with any substantial change, a shift in focus in energy efficiency program implementation towards the community scale is likely to be met at first with caution and skepticism from institutional actors. This is partially due to a simple resistance to trying new approaches for the fear of failure, and also to the problem of dealing with incumbent program implementers who might lose market share from such a shift.

To ease these concerns, advocates of a community approach must demonstrate its viability through a successful pilot program. The proposed Cambridge multifamily program is an excellent opportunity to accomplish this, as both NSTAR and the City of Cambridge have expressed willingness to be bold and experiment with new models of efficiency program delivery. A successful multifamily pilot program in Cambridge that is built around social

marketing and outreach and that is grounded at the community level would demonstrate the benefits of this approach to the rest of the field and allow for the emergence of a new model of energy efficiency program implementation

*Issues with the Scope of the Program.* As discussed above, there are many benefits to a social approach to program implementation. One drawback however, is the potential misalignment of social and geographic boundaries. Because the membership of many community organizations and the social networks of most residents are not strictly limited by geographic area, the benefits of a community approach are mitigated if eligibility is restricted to a small service area.

For this reason, a social approach to energy efficiency is likely better suited for the scale of a city rather than an individual neighborhood. Situating a program at the city scale also maximizes the effectiveness of the partnership between a program implementer and a city government, as they would have coterminous geographic jurisdictions. But even then, many members of community organizations in Cambridge do not live in Cambridge. This likely cannot be addressed by a limited-scope pilot program, but would hopefully be resolved if a pilot were successful and subsequently scaled to neighboring communities.

Ideally, the program would be expanded through a modular process that would allow the costs of program administration to be reduced through economies of scale, but that would ensure that program outreach and marketing remain local in each new city or town. Interested multifamily residents would then be eligible for in-depth support from a program implementer regardless of whether they reside in the same area as the community organization or personal connection that referred them to an efficiency program.

*Increased Labor Costs.* A third—and perhaps most significant barrier—to a community-based approach is the cost of the additional labor that is required from the program implementer to serve a hard-to-reach market segment. Program implementers must be incentivized to make this additional outreach and be remunerated for their effort, and utilities must be rewarded for targeting deeper and less accessible energy savings.

The problem of implementer costs could be resolved by restricting the terms of contractor payment to reward them for investing time in individual relationships with community groups and residents. They could, for example, be given a partial payment at various stages in the recruitment process—such as enlisting interested residents from community group outreach or reaching out to property owners—to ensure that they are incentivized to target hard-to-reach savings.

To address the desire of utilities to focus on lowest-cost energy savings regardless of social benefits, a longer-term policy change could modify the way that benefits are determined for multifamily programs in cost-effectiveness calculations. In many states, a bonus multiplier (typically ten percent) is applied to the energy savings that result from low-income energy efficiency programs in recognition of the increased social benefits of serving disadvantaged communities. I believe that there is a case to be made for applying a similar bonus multiplier to the multifamily sector due to the greater cost that is required to overcome the entrenched social barriers inherent in the sector. Such a change would require action from the Massachusetts Department of Public Utilities (or its equivalent in other states), but would be

worthwhile as it would ensure that utilities are not pressured by cost-effectiveness requirements to only target low-hanging fruit in their quest for energy savings.

## **CONCLUSION**

One reason for the lack of success in the multifamily energy efficiency sector to date is a lack of alignment between market barriers and program incentives. By responding primarily to financial impediments to participation, efficiency programs favor market sectors where financial barriers are the sole or primary obstacles that residents face in considering an efficiency upgrade. This puts residents in multifamily buildings at a disadvantage, as the strong social barriers that they face are left unaddressed by present offerings.

To get beyond the low-hanging fruit in the residential sector, program administrators must adopt a new paradigm for energy efficiency program design in multifamily housing. The approach detailed above is designed to address the social impediments to energy efficiency by leveraging social ties and providing individually tailored support to potential participants. Doing this empowers multifamily residents and provides them with the agency they need to choose to make their homes more efficient.

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