Center for American Progress

Power for the People

Overcoming Barriers to Energy Efficiency for Low-Income Families

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Introduction

Energy efficiency upgrades to low-income homes help struggling families use less energy and lower their utility bills while still meeting their daily energy needs. A family living in an older home, for example, could cut their yearly energy bill in half with a full home weatherization.

Despite the clear benefits of energy efficiency upgrades, only a small portion of America's low-income homes, which qualify for assistance based on the Department of Energy's weatherization metric, have been retrofitted with such upgrades to date. Why is this the case?

In this issue brief we will examine three barriers to weatherization in low-income communities and discuss three strategies to unlocking widespread energy efficiency in low-income households, among them:

- Generating greater access to energy-efficient products
- Paying for the purchase and installation of these products
- Boosting demand for energy-efficient upgrades through innovative community outreach and education programs

Clearly identifying and overcoming barriers is crucial to expanding the use of energy-efficiency programs and measures in low-income communities. While the strategies discussed here are not necessarily the definitive answer to overcoming all barriers—other effective programs certainly exist—they nonetheless represent a crucial and much-needed step forward.

What is weatherization?

weath·er·i·za·tion, noun

"Weatherizing" a home involves installing a wide variety of energy efficiency measures. This includes insulation around doors and windows and in attics; installing smart appliances and new heating, ventilation, and air conditioning systems; and revamping electrical systems. The most effective weatherization utilizes a "whole home approach," which combines several of these procedures to reduce net energy use.

Barriers to energy efficiency

The average low-income household in the United States spends upward of 15 percent to 20 percent of their total monthly income on energy costs—money that could otherwise be used for groceries, education, health care, or other basic necessities.

A recent *USA Today* article notes:

> *Households paid a record $1,419 on average for electricity in 2011, the fifth consecutive yearly increase above the inflation rate. The jump has added about $300 a year to what households pay for electricity. That's the largest sustained increase since a run-up in electricity prices during the 1970s.*

In light of these high costs and the fact that low-income families are financially hard-pressed in our struggling economy, energy efficiency should be a priority for states and cities. Unfortunately, some formidable barriers stand in the way of significantly increasing the number of homes retrofitted with energy-efficiency upgrades.

Cash flow, capital costs, and financial incentives

For a family struggling to get by, retrofits requiring major capital costs upfront are off the table, even if it meant saving money in the long run. This lack of short-term cash flow represents the first major barrier to adopting energy efficient upgrades in low-income communities.

A second barrier compounding the cash-flow problem is the issue of split incentives for families who rent their homes. Specifically, building owners don't make efficiency investments because it's the renters who pay the energy bills. Conversely, renters aren't likely to make investments in property they don't own.

What's more, even if renters did desire to take on the costs themselves, they are at a significant disadvantage when it comes to securing financing for large capital projects. The reason: They usually don't have the equity to leverage such as owning a home.

Information and outreach

A third barrier is the dearth of information and outreach needed to educate communities about available avenues for low- or no-cost weatherization services. A number of case studies and analyses of low-income weatherization programs, including one by Lawrence Berkeley National Laboratory, note a lack of demand from consumers, even those who qualify for low- or no-cost energy-efficiency assistance.

Weatherization savings

A family of four based in Philadelphia living in a house built in 1960 (the average home age in that area) pays an average of $2,941 annually in energy costs. They could cut that bill in half, saving $1,612 a year, with a full-home weatherization. The retrofits would have a tremendous and immediate impact on energy consumption, and pay for themselves in less than 10 years if chosen appropriately; however, most low-income families cannot afford the $3,000 to $5,000 buy-in.

Source: U.S. Department of Energy

These case studies note similar information and outreach barriers, including customers being unaware of the service due to insufficient marketing; the application and paperwork being too complicated to navigate; and a pervasive sense of mistrust among low-income families toward their utility company and its representatives, and toward individuals selling energy-efficiency services—what Lawrence Berkeley Labs calls "a lack of trusted messengers."

Credible solutions

While the aforementioned issues are formidable barriers to deploying energy efficiency in low- income communities, we propose a suite of solutions that can bridge the financial and information gaps. They include generating access through financing and through community outreach and education. Let's consider each in turn.

Generating access through financing

The Weatherization Assistance Program, or WAP, has been around since 1972 and is the traditional method for financing low-income home energy-efficient retrofits. WAP channels federal appropriation dollars into state programs, which in turn fund individual home weatherization programs for those who qualify.

While this program was underfunded and saw only meager growth over the first several decades, it has experienced a period of great expansion in the past few years after receiving $5 billion in funding through the American Recovery and Reinvestment Act. In 2010 homes that benefited from the Weatherization Assistance Program across the country saved $2.1 billion for low-income families, including $437 on heating and cooling costs alone for individual households per year. More than 600,000 homes to date have been weatherized with Recovery Act funding, and more than 788,000 have been weatherized, when including the money given to WAP through annual appropriations.

As we have argued before these numbers stand in stark contrast to those of critics of the program. With the cost of weatherization clocking in at a modest $6,500 per home, and the multitude of environmental and economic benefits that energy savings brings, the Weatherization Assistance Program has been a resounding success.

Still, with an estimated 38.6 million American households still eligible for weatherization services, and factoring in that we as a nation are still spending about $231.1 billion annually for residential energy use, it is clear that there is plenty more work to be done. And w*hile the* Weatherization Assistance Program is making meaningful strides in penetrating the market for low-income homeowners, renters are unfortunately still literally being left out in the cold since the program is mostly used by homeowners (see the "split

incentive" barrier above). The renter population is a crucial demographic to assist, with 18 million very low-income people (50 percent of the median) in the United States renting—representing an increase of almost 2 million renters in six years.

Enter another innovative financing program that has made inroads in several parts of the country, most recently in New York state and in California—a public-private partnership financing program called on-bill financing. On-bill financing gives renters the ability to finance energy-efficiency improvements to their homes at no upfront cost while at the same time allowing them to repay the loan through the energy savings realized on their monthly energy bill.

The monthly bill is calibrated by the utility to be lower than (and to never exceed) the average electricity cost for that time of year. Thus the renter enjoys immediate savings on their utility bill while also paying for upgrades to their home in the same bill. (see Figure 1)

FIGURE 1

Sample California weatherization financing program for renters (including solar)

How the state's on-bill financing program works

Financials

Current utility bill: $350 per month

Investments: Solar panels, attic insulation, duct sealing, window sealing, HVAC controls and new refrigerator

Expected utility bill savings from investments: $225 per month

Investment loan: $20,000

Loan terms:
- Interest rate on loan: 6.25%
- 15 years repayment schedule
- Monthly payment: $170

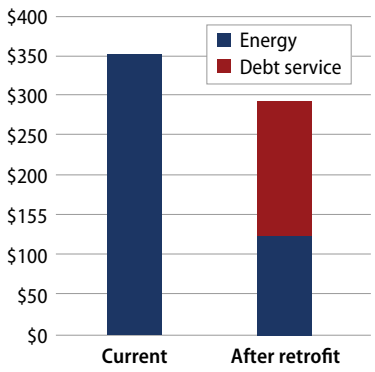
Utility bill after retrofit: $125

Utility bill + loan payment: $295

Savings: $55 per month

Savings wil grow as utility energy rates increase.

OBR program causes lower net utility bill



Source: Environmental Defense Fund, "On-Bill Repayment" (2011), available at www.edf.org/sites/default/files/On-Bill%20Repayment-Unlocking-the-Energy-Efficiency-Puzzle-in-California.pdf.

Further, this mechanism allows the loan to be attached to the building rather than to an individual, so that the costs are transferable upon sale—meaning that if a tenant leaves or is removed, the next tenant will pick up the repayment when he or she turns the power on. On-bill financing also incentivizes building owners by improving the value of their total property while transferring the monthly repayment to renters of an individual unit.

The market for residential on-bill financing is quite new—20 states are home to utilities that have implemented or are about to implement these programs. Thus continued analysis and fine-tuning must occur. Likewise, these programs certainly face their own challenges and barriers, as outlined by the American Council for an Energy Efficiency Economy, or ACEEE—upfront costs to utilities that need to modify their billing systems; the perception that utilities must operate as financial institutions to participate; risks of nonpayment of the finance charge; and raising startup capital. Still industry, financial, and environmental organizations agree that on-bill financing poses enough of an upside to move forward.

The Weatherization Assistance Program and on-bill financing provide two viable options for cities and states to help low-income families afford the desperately needed energy-efficiency retrofits that would otherwise be out of their reach.

Generating demand through community outreach and education

Even with effective financing or public subsidies available, weatherization programs still need low-income families to subscribe and "buy-in" in order for these services to reach meaningful scale and significant market penetration. Often these programs are underutilized due to nonfinancial reasons—namely an information and outreach gap resulting from insufficient or ineffective marketing, an intimidating or overly complex application process, or a general distrust of solicitations from utilities or private contractors. In other words, there is a basic communication breakdown between the people who need these services and the companies or nonprofit agencies that can provide them.

One way to overcome these nonfinancial barriers has been piloted by nonprofit organizations in numerous low-income neighborhoods across the country. These organizations utilize a community organizing model to sign up neighborhood residents for efficiency upgrades. While these programs take a variety of forms, they have a common theme—engaging established community leaders and existing social infrastructure such as a church group, parent-teacher association, or other existing nonprofit organizations, and relying on peer-to-peer outreach to sign up homes and businesses for weatherization services. These groups educate residents about the benefits of weatherization, inform them about financing options, and guide them through the application process. This model has proven to be effective in engaging residents who would have otherwise been hard to reach. (See case study: Groundswell)

Further, some of the most successful programs have also bundled demand—10 or more homes and business in one neighborhood—to leverage

Case study: Groundswell (formerly The DC Project)

Other energy-efficiency programs use creative approaches to ensure the clean energy economy impacts low-income communities. The nonprofit Groundswell (formerly known as The DC Project), which was launched in September 2009 in the nation's capital, operates a program called "Strong Homes" that encourages group energy-efficiency upgrades throughout communities in the D.C. area and ties those investments to job creation and business development in low-income neighborhoods.

The Strong Homes program successfully signed up more than 500 residents for weatherization services, created close to 40 jobs for community members, and saved D.C. families an average of 15 percent to 20 percent on their utility bills. Groundswell's model promotes community purchasing to encourage home energy-efficiency investment. The organization helps residents coordinate their home energy upgrades to lock in a discounted rate for efficiency services. Groundswell pools residents' purchasing power to generate savings for each household budget and to lower families' energy use. By vetting local small businesses, Groundswell ensures that residents hire contractors that deliver top-quality service, and participants use their strengthened economic power to reinvest in their local communities. In every project, residents select the community benefit they would like their group purchase to create.

For more examples of innovative community outreach programs, see section 2, "case studies" of the U.S. Department of Energy's 2010 analysis, available at http://eetd.lbl.gov/ea/emp/reports/lbnl-3960e-web.pdf.

project agreements with utilities or independent contractors producing additional positive benefits for communities. These "bundled" contracts can include clauses like local-hire and workforce training agreements, preference for women- and minority-owned contractors, clean energy preferences, competitive or reduced pricing and interest rates, and favorable and flexible repayment options.

Understandably, there is not a one-size-fits-all strategy when it comes to generating demand for energy-efficiency retrofits. In fact, the strength of this approach is its highly localized and contextualized nature. The 38.6 million homes that still qualify for weatherization (and the millions more rental units that could utilize on-bill financing) show that there continues to be a gap between *need* and *demand*. Community-organizing approaches help to connect these dots—showing people who need efficiency upgrades how to generate and bundle demand in the marketplace and ultimately realize the benefits of an energy-efficient home.

Conclusion

The Weatherization Assistance Program and on-bill financing have come a long way in helping low-income families overcome the high upfront costs of installing energy-efficient retrofits. Many of these families are now seeing lower energy bills as a consequence. In addition, the unique community-organizing approach employed by nonprofits such as Groundswell have provided information and resources to unite communities and have helped them to more fully access energy saving programs and products. By continuing to chip away at the financial and information barriers that exist for low-income families with the types of innovative approaches discussed here, American energy independence can truly begin take root in every American home.

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See also: Power for the People: Energy for the 99 Percent by Kate Gordon