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Financing Energy Efficiency: Breaking Down the Barriers

By Tim Ballard

The United States is facing a multitude of critical energy-related challenges: from climate change, to national security, to rising energy costs for consumers. The public has become more aware as the problems have become more severe, but the implementation rate of effective solutions has not kept pace. U.S. primary energy consumption did drop slightly in 2008/2009, but almost exclusively due to the economic downturn.[i] National energy consumption is expected return to pre-2008 levels once the economy recovers and to continue growing without an end in sight.

The most effective, immediate response to the energy challenge is to reduce American dependence on fossil fuels by improving the efficiency of our energy consumption, particularly within buildings. Developed countries around the world have taken advantage of the energy efficiency opportunities and developed aggressive incentive programs to promote building retrofits. In England, over 80 percent of older homes had been at least partially retrofitted with efficiency measures by 2010[ii] as compared with the largely untouched U.S. housing stock.

Considering recent political shifts and the failure of the Home Star bill in the Senate, it is clear that the U.S. will not soon be following Europe's lead with aggressive financial incentive programs. However, even without incentives, there is a tremendous opportunity for financial and energy savings in retrofitting the U.S. building stock. Why, then, are so few people taking advantage of it? There are a number of barriers preventing building owners from pursuing efficiency opportunities. While these barriers exist to some degree in the commercial and industrial sectors, they are most pronounced in the residential sector. They include:

- Lack of information/awareness
- Access to and cost of capital
- Length of building ownership
- Landlord/tenant split incentives

The first two barriers can be addressed in a relatively straightforward manner, but the second two are more challenging. Although informational barriers can be broken down through public education and outreach campaigns, such endeavors can be costly and often have difficulty holding the public's attention to the topic of energy efficiency. On the capital side there are indications that energy efficiency loans, while still not as widespread and accessible as other loan products, are becoming more readily available.

The length of building ownership presents a greater challenge, especially considering the length of the payback periods associated with some deep efficiency retrofits. It does not make financial sense for a homeowner to implement efficiency measures with seven-year paybacks if the homeowner may move to a new residence in five years. Instability in the job market compounds this problem by increasing homeowner uncertainty. Split incentives between landlords and tenants also continue to prevent adoption of efficiency in rental properties. Landlords own the buildings and the improvements, while the tenants pay the utility bills. Neither realizes the full financial benefit of efficiency retrofits.

There are two primary strategies for addressing these two challenges: implementing tools that encourage real estate market prices to better reflect the value of building efficiency, or tying efficiency loans to properties rather than property owners. If efficiency improvements were valued in real estate transactions, homeowners and landlords would have an increased incentive to pursue these upgrades just as they have incentive to pursue cosmetic improvements. While many organizations, including the U.S. Department of Energy, are currently developing tools to aid this transition, it may be many years before markets begin fully valuing efficiency improvements.

Recently, Property Assessed Clean Energy (PACE) programs appeared around the country in an attempt to tie efficiency financing to properties. However, implementation of PACE programs for residential consumers was halted by federal regulators and is currently stalled awaiting introduction of enabling legislation in Congress. Alternate approaches are needed.

The most prominent alternate financing mechanism is the on-bill tariff system, similar to the Pay-As-You-Save® (PAYS®) approach developed in the late 1990s.[iii] The on-bill tariff mechanism allows for consumers to repay efficiency improvement loans via a service charge or "tariff" on their utility bills. The tariff is tied to the utility meter, rather than the property owner, allowing payments to transfer between owners or tenants. Since the tariff is paid by the same entity paying the utility bill, the financial costs and benefits of efficiency improvements are always tied together. For effectiveness, repayment periods must be long enough, interest rates low enough, and energy savings high enough to allow tariff charges to be lower than the financial savings from efficiency measures, allowing utility customers to see an immediate and lasting reduction in their bills. Lower interest rates and longer repayment periods thus promote deeper efficiency retrofits by allowing for effective financing of measures with longer payback periods.

On-bill tariffs provide numerous additional benefits. In many areas tariffs are not considered debt, providing much greater freedom on several fronts.[iv] Local governments that are not able to take on long-term debt obligations without legislative approval could more easily participate. Additionally, the program could potentially evaluate lending risk based on an applicant's utility bill payment history in addition to his or her credit ratings. Participant approval based on payment histories could widen the market considerably by allowing lower income homeowners or renters with poor credit ratings, but consistent utility bill payment histories, to participate. An on-bill tariff system thus utilizes a market-based mechanism that has the potential to promote greater social equity by helping lower the utility bills of those less able to afford them.

As with any type of lending activity, risk management is paramount. On-bill tariff programs typically enforce payment through a "disconnection clause" that treats non-payment of the tariff identically to non-payment of a utility bill. This is generally an equitable solution, as participants should be experiencing lower utility bills than they did prior to efficiency upgrades. Despite this argument, the disconnection clause has raised objections from consumer advocates in Vermont, New York, and Kansas.[v] At present, this has not prevented any of the programs in these states from moving forward. The added benefit of the disconnection clause is that the lender sees greater repayment security than from a traditional loan, potentially resulting in lower interest rates for program participants.

There are several challenges to implementing on-bill tariff financing mechanisms. Any energy service charge or tariff applied by a private utility company must be approved by the state public utilities commission. Additionally, the simplest and most common form of an on-bill program exists entirely within the utility company itself. However, most utilities are uncomfortable managing financial risk since it is not their area of expertise. This was one of the primary reasons why many on-bill programs—including the first such program in the US, founded by PacifiCorps in several western states in the late 1980s,ceased operations in the late 1990s.[vi]

An alternative to the utility-housed program is a collaborative partnership between lenders, utilities, and a third party organization such as a non-profit.[vii] The lender provides funds through the third party, who markets the program and works with consumers. The third party funnels the funds to approved auditors and contractors who complete the necessary work on participants' buildings, and contracts with the utility company for billing of the tariff on participants' utility bills. Each entity involved is thus allowed to focus on his or her specialty: the lender is responsible for managing financial risk, contractors and auditors are responsible for focusing on their work, the utility is responsible for billing, and the third party is responsible for program management and implementation. While complex, this option has great potential.

This model was first successfully implemented in Portland, Oregon, through a public-private partnership between the City of Portland, CDFI Shorebank Enterprise Cascadia, and the local utility. Through private capital, city funds, and federal recovery act funds, this program has grown into the non-profit Clean Energy Works Oregon which coordinates with numerous utility providers, financial institutions, contractors, and auditors throughout several counties in Oregon.[viii]

As the success and longevity of such programs grow, cities and states around the country are taking note. Several states have passed legislation requiring their utility companies to develop on-bill financing programs, including Illinois in 2009 and Hawaii in 2006, while others such as Michigan are requiring their Public Service Commissions to investigate the concept.[ix] On-bill programs are currently in place or under investigation at the state level in over a dozen states.

While there is no perfect solution to our national energy challenges, the on-bill tariff-based financing mechanism provides an effective means of addressing several of the most significant barriers preventing widespread implementation of energy efficiency building retrofits. Contractors would no longer have to sell efficiency products to consumers on their health, environmental, and long-terms savings benefits.

The new pitch would be simple: at no cost to you, we can immediately reduce your utility bill while improving home health and comfort, reducing greenhouse gas emissions, improving air quality, furthering national energy security, and creating local jobs. Who could say no?

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