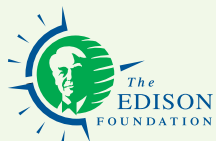




# Alternative Financing Mechanisms for Energy Efficiency

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INSTITUTE FOR  
**Electric Efficiency**

*Advancing energy-efficiency practices and  
demand response among electric utilities.*



# **Alternative Financing Mechanisms for Energy Efficiency**

**IEE Brief**

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## **USING FINANCING TO MAKE INVESTING IN ENERGY EFFICIENCY EASIER**

Energy efficiency is a superior resource. It is widely regarded as a low cost, low carbon solution that benefits the consumer by placing downward pressure on monthly utility bills. Despite that recognition, it has been repeatedly shown that the United States is far from reaching potential energy savings through efficiency, due to several enduring structural and market barriers.

How energy is used ultimately comes down to consumer decisions and, in order for the United States to reach its energy efficiency potential, energy efficiency solutions must become easier for the consumers to choose. When residents, business owners, and managers consider improvements to their homes or businesses, they typically do not consider paying for upgrades that will make their homes or businesses more energy efficient. When they do, they quickly realize the large expense associated with those investments. Rebates and incentives for the customer are offered by most utilities, but often do not go far enough to offset the high cost of energy efficiency investments that yield significant and persistent savings. The challenge is to reduce the high upfront costs. One solution is to make it easier for consumers to borrow money for retrofits and efficiency upgrades.

Alternative financing mechanisms can provide consumers with the access to capital they need in order to afford energy efficiency investments. This brief explores financing as a barrier to efficiency investment, the types of solutions being employed by utilities nationwide, and how electric utilities view the potential benefits and risks of alternative financing.

## A LACK OF FINANCING

Electric utilities have long recognized consumers' lack of access to capital as a significant and ubiquitous barrier to deploying energy efficiency. Two recent reports concur with that concern. The McKinsey Global Institute report, *Unlocking Energy Efficiency in the U.S. Economy* (2009), identifies several barriers to achieving energy savings in all sectors.<sup>1</sup> Lack of access to capital was identified as a significant barrier in the residential sector – in low income households and non-low income households, new homes, and in the decision to purchase efficient appliances – in the commercial sector, and in the industrial sector. The Obama Administration has also issued a report calling for a significant increase in efficient residential retrofits. The White House Council on Environmental Quality's (CEQ) recent report, *Recovery Through Retrofit*, identifies a lack of access to financing as one of three primary barriers to achieving a greater number of retrofits, along with information access and workforce development.<sup>2</sup> The CEQ recommendations include the expansion of state revolving loan funds and municipal energy financing, two types of alternative financing mechanisms described below.

These reports point to financing mechanisms as the most direct way to overcome capital constraints facing end-users in all sectors. Both reports also express how financing programs can also reduce transaction costs, contribute to workforce development and training, address split incentives between landlords and tenants that often prevent investments, and raise customer awareness and access to information about energy efficiency. For example, home buyers typically do not consider energy efficiency at the time of purchase; municipal energy financing programs allow for the cost of energy efficiency investments to be transferred between owners and encourage the previous owner to emphasize that investment as a feature of the home.

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<sup>1</sup> McKinsey & Company. "Unlocking Energy Efficiency in the U.S. Economy," July 2009.

<sup>2</sup> White House Council on Environmental Quality. "Recovery through Retrofit," October 2009.

## PROGRAM TYPES

There are four primary types of alternative financing mechanisms that are currently being employed across the country:

- On-bill financing
- Third party financing
- Municipal energy financing, or Property Assessed Clean Energy (PACE) programs
- State revolving loan funds (RLFs)

One of the most discussed is on-bill financing, where a customer receives funding directly through the utility and a portion of the payment is expressed directly on each monthly bill, typically as a separate charge. The monthly payment for the installed measure is usually slightly less than the energy savings for that month, meaning that the customer will be paying less each month on their total bill, which includes the loan payment. Both the charge and the savings are normally printed next to each other to communicate the monthly benefit to the customer. These programs provide loans for a maximum term of 24 to 60 months and are usually made available to commercial and public sector customers. Pilot programs have been mandated for the residential sector in Illinois<sup>3</sup> and are required as a stipulation of the energy efficiency portfolios in California.<sup>4</sup> Loans are either provided directly by the utility (on-bill loans) or are financed through a utility tariff (tariff-based loans). From the utility perspective, on-bill loans do not require state regulatory approval and the utility can set the financing terms, while tariff-based loans require regulatory approval for the program and terms.

Both programs present challenges to the utility (see the discussion below) and, as a result, neither type is widespread. There are, however, successful examples of each. A few utilities have structured their on-bill programs so that a state entity will assume the risk of default and will repay the utility for losses incurred through the program, either up to a capped amount or in total. Several programs offer low- to zero-percent financing, where the excess cost of financing is covered by the utility, through state funds, or through a rider.

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<sup>3</sup> See: the Illinois Power Agency Act, 2009.

<sup>4</sup> CPUC Docket A.08-07-021.

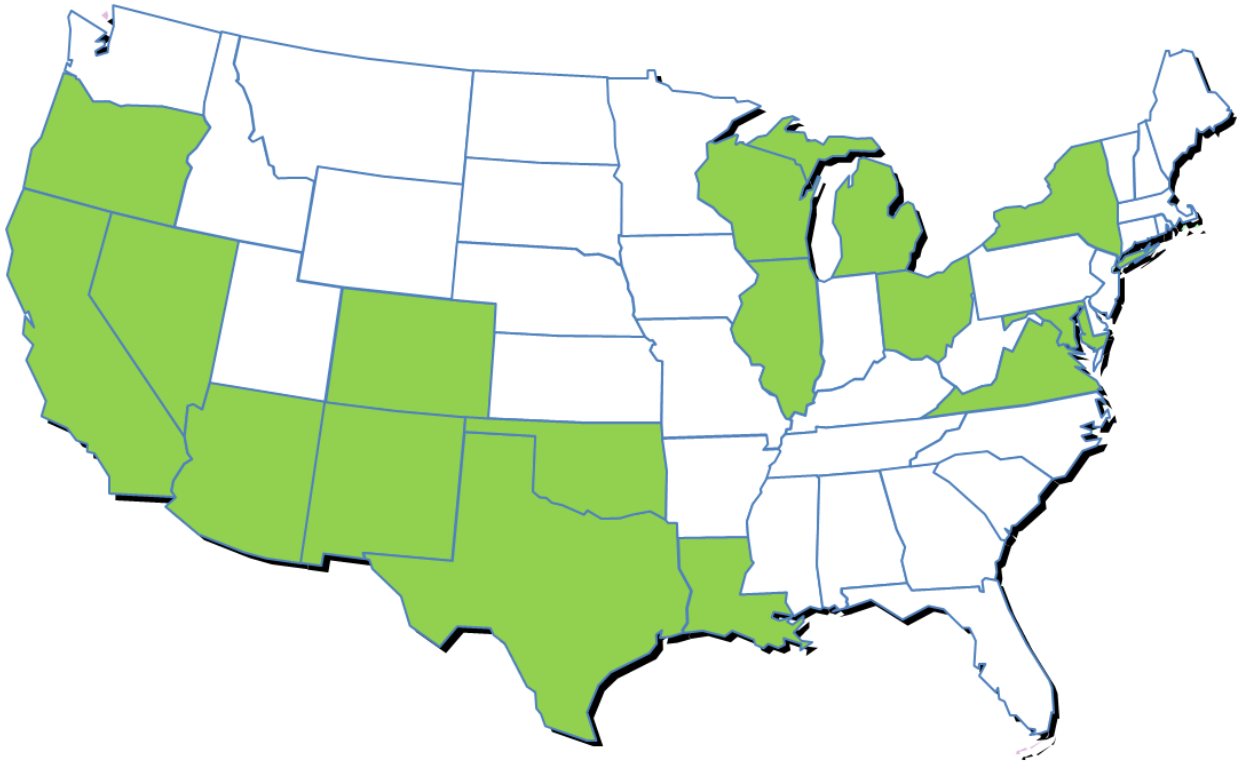
A second option is to finance the efficiency investment through a third-party lender. This type of program is more common in the residential sector and loan recipients will receive anywhere from below-market financing to the market rate, depending on the structure of the program, the level of involvement of the state regulator, and the terms of the third party lender. The advantage of third-party financing is that the functions typically performed by a lending institution – credit evaluation, exposure to non-payment, etc. – do not have to be adopted by the utility or program administrator. The third party lender assumes the risk.

Municipal energy financing, or Property Assessed Clean Energy (PACE) loans, present another increasingly popular mechanism. Because of the relatively high turnover rate for housing in the U.S., many homeowners are discouraged by the longer payback periods for efficiency investments. Municipal financing solves this problem by issuing a loan through a special tax assessment on an owner's property, thus tying the loan to the property rather than to the borrower, and allowing for the loan to be repaid over a long period of time. PACE programs offer financing for energy retrofits, including efficiency measures and distributed renewable energy systems, and the typical loan term is twenty years. If the owner decides to sell the property before the loan is repaid, the loan conveys and the new owner will continue to make payments as part of the property tax bill. This allows for the loan payment to stay with the person receiving the benefit of the investment – the homeowner. These programs are growing in popularity. At the beginning of 2009, only two states had passed PACE legislation – California and Colorado; as of December 2009, laws had been passed in sixteen states (see Figure 1).

There is also growing support for using state revolving loan funds (RLFs) for energy efficiency investments. RLFs work by using the principal, interest, and fees from prior loans to fund ongoing efficiency investments. They are usually administered by a state entity or non-profit entity designated by the state. Administrators, however, need to be conscious to keep operational costs low and terms of reasonable length so that the fund is not stressed by insufficient payments. The advantage of these funds is that, if well designed, they provide a sustainable funding source for future loans, while providing technical assistance and reducing transaction costs. RLFs are initially capitalized through state treasury investments, ratepayer funds (e.g., Ohio), state bond proceeds, or unique sources such as the ARRA funds. RLFs specific to energy efficiency measures are currently in place in several states (including

Arkansas, New Hampshire, and North Carolina), and the number of states with energy efficiency RLFs is likely to increase considering that the ARRA encourages recipients of the State Energy Program (SEP) funds to create long-term funding mechanisms like RLFs to ensure that funds for efficiency measures continue after SEP funds expire.<sup>5</sup> RLFs are also an eligible use of Energy Efficiency and Conservation Block Grant (EECBG) funds. Some state energy offices – North Carolina’s, for example – were awarded grants to capitalize RLFs in their states.

**Figure 1: States (Shaded) with PACE-Enabling Legislation, December 2009**



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<sup>5</sup> Booth, Sam. “Revolving Loan Funds: Basics and Best Practices” US National Renewable Energy Laboratory. August 26, 2009

## **THE CHALLENGE FOR UTILITIES**

Recognizing the need for alternative financing, utilities have increasingly explored variations of these mechanisms over the past two decades. As stated earlier, there is not one type of program that can be considered common. Several utilities administer on-bill financing programs for commercial customers and a few also offer these programs in to residential customers. There are several examples of successful third-party mechanisms that have produced persistent savings along with high marks for customer satisfaction, such as National Grid's program in Massachusetts, SMUD's program for residential customers, and the Keystone home energy loan program in Pennsylvania. These programs demonstrate that well designed and administered programs offers unique benefits. But utilities are cautious about these programs because of the risk inherent in alternative financing programs.

In late 2009, IEE informally polled its members on the potential benefits and risks of alternative financing mechanisms. Of the several benefits commonly identified by respondents, the primary advantage was that these mechanisms lower the upfront cost of investment for the consumer, either by integrating it into the customer bill or by providing a different avenue through which the customer can pay for the measure. On-bill programs have the advantage of unifying the charges on one bill, thus simplifying the process for the customer. Financing programs can also be integrated or cross-marketed with other utility-administered efficiency programs, such as direct measure incentives or targeted customer outreach programs. Public sector entities, which often do not have the discretionary capital for up front efficiency investments, can also directly benefit from these programs. Some third-party and on-bill financing programs have been structured to provide zero percent interest for specific measures, which results in a higher adoption rate and higher customer satisfaction. Depending on the type of program, the loan amounts for these zero-interest programs are provided by a third party or state/utility funds, and interest from the loans is bought down through system benefits charge revenues or a unique state fund.

However, these programs also pose risks to utilities, and, according to the responses received, utilities do not want to act as lenders. As lenders, the utilities would have to consider potential federal and state regulatory reporting requirements, adding to the administrative costs of the programs. Additionally, utility lenders would have to evaluate credit risk, restructure the billing

process, add accounting resources, find additional funding sources, and ultimately manage exposure to non-payment. As stated above, some utilities administer on-bill programs, where a third party assumes these risks.

Most IEE members are unlikely to advocate for a utility financing program for the residential sector. Utilities believe that third-party financing programs are the preferred mechanism for the residential sector, where credit histories vary and the investments are comparatively small. Banks or financial institutions financing these programs provide the funds and are responsible for evaluating the credit risk of potential recipients. Utilities can continue focusing on their core business and avoid acting like banks.

However, for the commercial sector, where the individual investments are larger and it is easier to evaluate credit risk, several utilities offer zero-percent on-bill financing programs. Capital for the loans is provided through revenue from a system benefits charge, state funds, the utility itself, or a combination of sources.

On-bill financing programs also present challenges related to non-payment penalties. Since payment for an efficiency investment is separate from delivery and energy charges, utilities are faced with the question of whether they can interrupt service for non- or partial-payment of loans. This issue is complex and could result in consumer backlash.

## **ROLE FOR ELECTRIC UTILITIES**

The majority of IEE members were in favor of alternative financing mechanisms, but the overall sentiment is that utilities do not want to act as banks. Considering the lack of available and affordable financing for efficiency measures, greater energy efficiency savings can be realized if utilities work with other entities to structure financing for energy efficiency investments. Ideally, such programs could provide low- to zero-interest loans that communicate both savings and payment amounts clearly on the customer's bill but would not saddle utilities with the risk associated with lending.

Utilities are much more inclined to offer alternative financing mechanisms if the default risk and credit evaluation duties are handled by an entity more suited to the task. This is particularly important in the residential market, where third-party financing mechanisms put the utility in a much less risky position. However, a state or federal entity would likely need to buy down debt to keep interest rates low. From the utility perspective, the typically lower risk profile of larger customers makes on-bill financing much more feasible for the commercial and industrial sectors.

State programs, such as PACE programs or RLFs, also present significant opportunities. PACE programs can be designed so that state and city governments collaborate with electric utilities and thus coordinate community- and state-wide efficiency efforts. Given utility access to customer use data and their energy expertise, utilities can help recommend and prioritize efficiency measures, monitor energy savings over the term of the loans, and help identify which communities and sectors to target. RLFs could be similarly structured so that collaboration between utilities and state energy offices is encouraged. Like PACE loans, the RLFs are not associated with the customers' energy bill. However, PACE loans have the advantages that they are built on top of an existing structure – property taxes – and have lower operating costs than RLF programs, suggesting a higher likelihood of long-term sustainability.

Alternative financing mechanisms, such as on-bill financing, third party lenders, PACE programs, and RLFs, offer alternative solutions for overcoming a major barrier to making energy efficiency investments; this is especially important in the residential and commercial retrofit markets. By using such mechanisms, utilities, in collaboration with other entities, can play a vital role in making it easier for consumers to invest in energy efficiency.



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