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# On-Bill Programs that Advance Multifamily Energy Efficiency

September 2013

*There is significant energy savings potential in our nation's multifamily rental housing stock. However, several barriers, including lack of upfront capital and misaligned incentives, have restricted efficiency investments in this building sector. A promising strategy to overcome these challenges is on-bill repayment programs that allow customers to pay back the cost of energy efficiency improvements through their utility bills. In this brief, Green For All and the National Housing Trust highlight several examples of existing on-bill programs and pilots and identify consistent program and policy attributes across these initiatives.*



Green For All is working to build an inclusive green economy strong enough to lift people out of poverty.



The National Housing Trust protects and improves existing affordable rental homes so that low-income individuals and families can live in quality neighborhoods with access to opportunities.

## Why Focus on Efficiency in Multifamily Rental Housing?

On average multifamily rental units have fewer energy savings measures than any other type of housing.<sup>i</sup> With nearly half of all very low-income renters residing in multifamily housing, the failure to reduce energy consumption adversely impacts those families least able to afford high energy bills.<sup>ii</sup> Energy costs can easily add up to 12 percent or more of a low-income family's budget<sup>iii</sup> (See Figure 1).

Just as the need is great, so are the opportunities. Multifamily energy efficiency has enormous potential for achieving savings of 15-30% through proven, high-return efficiency measures.<sup>iv</sup> Lower energy costs deliver savings and higher quality of life for tenants, and help preserve the affordable housing stock. Installing efficiency measures is also an opportunity to create quality jobs and career pathways for local and disadvantaged populations.

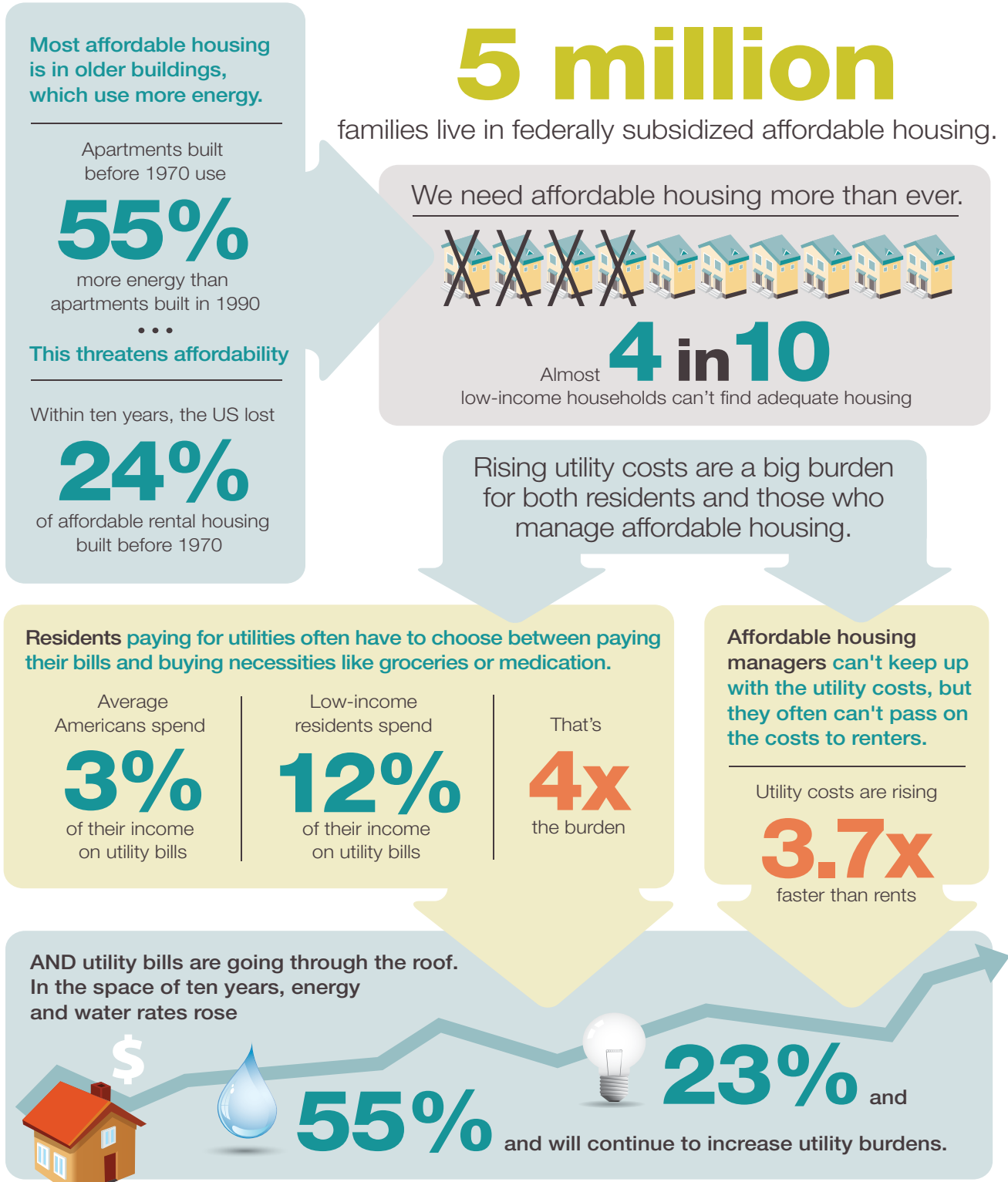
## The Role of On-Bill Programs

Multifamily building owners face two main challenges when accessing energy efficiency. One is the up-front cost coupled with the difficulty owners face accessing capital. Another barrier unique to multifamily housing is called the "split incentive"; in buildings that have individual utility meters for each residential unit, savings would accrue for the tenant, so the property owner has little motivation to pay for efficiency upgrades.

On-bill energy efficiency programs allow building owners to borrow capital for efficiency improvements and pay it back through a surcharge on the utility bill, which is offset at least in part by a lower bill. In this way, customers are able to access energy efficiency at no up-front cost,

FIGURE 1

THE NEED FOR ENERGY EFFICIENT MULTIFAMILY AFFORDABLE RENTAL HOUSING



We need energy and water efficiency upgrades to keep utility costs low, keep housing affordable, and protect low-income households. 

Data sources for this infographic can be found at [www.greenforall.org/mpower/](http://www.greenforall.org/mpower/).

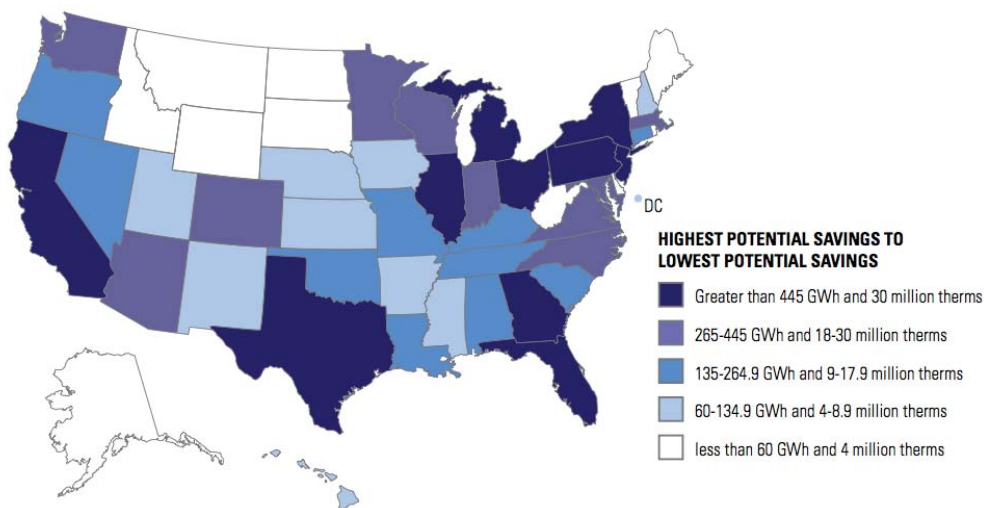
reap immediate benefits, and pay back the cost of the upgrade using a portion of the savings. After the cost of the upgrade is repaid, the customer reaps the entirety of the savings. On-bill programs overcome the split incentive since the surcharge goes to the beneficiary of the upgrades. On-bill programs expand access to efficiency upgrades, and make repayment simple and intuitive.

### Benefits to Utilities

Utilities play a critical role in creating on-bill energy efficiency programs by providing the mechanism through which the borrower can repay the loan. In return, utilities stand to benefit because the upgrades generate energy savings that allow utilities

to meet state-mandated energy-saving goals, and on-bill programs promote access to existing utility rebate and direct install incentives. In addition, efficiency programs can reduce arrearages, especially among low-income populations. Finally, on-bill repayment mechanisms need not be limited to electricity and gas utilities: as with Windsor Efficiency PAYS<sup>®</sup>, a water bill can also serve as the vehicle for the surcharge.

FIGURE 2  
ANNUAL SAVINGS BY STATE WITH 15% ELECTRIC AND 30% NATURAL GAS EFFICIENCY IMPROVEMENT IN MULTIFAMILY BUILDINGS



Source: CNT Energy and American Council for an Energy-Efficient Economy. 2012. *Engaging as Partners in Energy Efficiency: Multifamily Housing and Utilities*

### Building Successful Multifamily On-Bill Programs

Green For All and the National Housing Trust have assembled four case studies of on-bill energy and water efficiency programs that serve the multifamily sector in California, Kansas, New Jersey, and Oregon. Below, we have identified four program and policy factors that substantially contribute to the success of all on-bill programs, but are especially important for on-bill programs that serve the multifamily sector.

**Third Party Financing.** Not all utilities have the capacity or inclination to provide financing for efficiency upgrades. State legislation allows utilities to use their bills as repayment mechanisms for third party loans. The third party financiers handle the underwriting and hold the loans, while the utility simply provides the use of a familiar and effective payment mechanism – the utility bill. This opens the door to partnerships that leverage funds from both the public and private sectors to expand access to efficiency upgrades.

#### On-Bill Financing vs. On-Bill Repayment

There is an important distinction between the two models of on-bill programs. On-bill financing uses utility capital to finance efficiency upgrades. On-bill repayment involves a third party capital provider, such as financing institutions, that finances the efficiency upgrades while the utilities provide the repayment mechanism.

**Assisting Utilities.** Some utility billing systems do not accommodate adding a surcharge to an existing bill. As in New York and Oregon, public utility commissions and legislators can provide utilities with financial and technical assistance to lower the costs of transitioning to a new billing system.

**Expanding Access.** Utilities have cost-benefit analyses and cost-effectiveness tests that do not necessarily reflect the higher burden of utility costs and health issues that face low-income residents. Public utilities commissions can tip the balance in favor of low-income efficiency by incorporating a “low-income adder” to utilities’ cost-benefit analyses.

**Appropriate Financing Terms.** Customers are more likely to participate if they are confident that their energy savings will exceed loan payments. To address this, on-bill programs should require no up-front payment, incorporate incentives to reduce the cost of efficiency measures, and allow an appropriate repayment period—one long enough to allow the energy savings to cover the loan payments, so that customers immediately benefit from the energy savings. PSE&G’s program, for example, reduces owner costs through grant incentives and allows owners of affordable multifamily properties to repay project costs over a 10-year period as compared to a typical 5-year repayment term. Similarly, MPower Oregon and Windsor Efficiency PAYS® do not require payment before building owners start to accrue savings.

## Case Studies

These four case studies are presented in the following pages:

**Programs specific to multifamily:** On-bill programs that are specifically designed to serve only the multifamily sector.

- PSE&G New Jersey Multifamily Program
- MPower Oregon

**Programs that include multifamily:** On-bill programs that successfully serve the multifamily sector in addition to single-family homes.

- MidWest Energy How\$mart® Kansas
- Windsor Efficiency PAYS®

## Sources

<sup>i</sup> Gary Pivo, 2012. Energy Efficiency and its Relationship to Household Income in Multifamily Rental Housing.

<sup>ii</sup> Ibid

<sup>iii</sup> Caster, Laura and Mabli, James. Mathematica Policy Research, Inc. 2010. Low-Income Household Spending Patterns and Measures of Poverty.

<sup>iv</sup> CNT Energy and American Council for an Energy-Efficiency Economy. 2012. Engaging as Partners in Energy Efficiency: Multifamily Housing and Utilities.



1101 30th Street, NW, Suite 100A  
Washington, D.C. 20007  
Phone: 202-333-8931  
nhtinc.org  
Twitter: @NatIHsingTrust



1611 Telegraph Avenue, Suite 600  
Oakland, California 94612  
Phone: (510) 663-6500  
greenforall.org  
Twitter: @GreenForAll

# PSE&G's Residential Multifamily Housing Program

New Jersey's largest utility, PSE&G, has developed a successful approach to overcoming a number of the obstacles that have prevented multifamily housing from being effectively served through previous utility energy efficiency programs. The Residential Multifamily Housing Program is an on-bill financing program that aims to preserve affordable housing and reduce carbon emissions. The program provides upfront interest-free financing and incentives to cover the cost of eligible energy efficiency improvements. It was designed collaboratively with the New Jersey Housing and Mortgage Finance Authority (NJHMFA). PSE&G has committed \$39 million of its own capital to the program since it launched in 2010.

## Context

Location:  
**New Jersey**

Program Start Year:  
**2010**

Total Capital:  
**\$39 Million**

## Program Outcomes<sup>1</sup>

(As of June 2013)

Number of Projects & Units  
Enrolled in Program:  
**506 buildings: 16,258 apartments**

Annual Energy Savings Achieved:  
**Electricity: Over 9.7 GWh**  
**Nat'l Gas: Over 2.5 Million Therms**

Cost Effectiveness  
**Utility Cost Test: 1.39**  
**Total Resource Cost: 2.9**

**On-Bill Financing.** Customers receive upfront payments to cover all project costs. PSE&G cost incentives buy down the payback period of the efficiency measures, reducing the overall cost of the project to the customers. Customers repay project costs through zero percent on-bill financing over a term of 5-10 years.

**Comprehensive Energy Upgrades.** PSE&G covers the cost of third-party energy audits to identify energy saving measures. Measures with a simple payback of 15 years or less are considered cost-effective and may be eligible for installation (assuming the entire project is cost-effective).

**Partnership with NJHMFA.** PSE&G worked with NJHMFA to market the program to multifamily owners at minimal cost to the utility.

**Driving Owner Demand.** The program is fully subscribed and has a waiting list of customers interested in participating. The program's success can be attributed to the overall program structure, which eliminates first-cost premiums and converts a capital cost into an expense that can be paid over time. The program allows owners to realize cost savings immediately and before repayment begins.

## PSE&G's Innovative Collaboration with the NJHMFA

PSE&G worked closely with NJHMFA in designing the financing terms of the program to ensure that affordable multifamily owners were able to participate. Owners of affordable housing are permitted to repay the project costs over a 10-year term rather than a 5-year term for market rate properties. The longer repayment period results in lower energy bills for affordable multifamily properties.

## Challenges and Lessons Learned<sup>1</sup>

**Flexible Building Assessment.** PSE&G recognized that not every multifamily property requires an investment-grade building assessment. The use of less expensive audits when possible helps projects meet the cost-effectiveness test by keeping total expenses down.

**Match Progress Payments to Project Cash Flow Needs.** Instead of providing customers three equal progress payments, PSE&G monitors the progress of the project and provides multiple smaller payments according to the cash flow needs of the project. This eliminates the need for the owner to pay out of pocket to bridge project costs as measures are installed.

<sup>1</sup> Source: ACEEE, Leaders of the Pack: ACEEE's Third National Review of Exemplary Energy Efficiency Programs, Research Report U132

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# MPower Oregon

MPower Oregon offers a simple, integrated solution for lowering energy and water-related operating costs for affordable housing properties. MPower delivers immediate savings at no up-front cost, and the property owner pays for the upgrade from the savings generated through effective efficiency upgrades. As a pilot program under EEAST (Energy Efficiency and Sustainable Technology) legislation, MPower is able to work with all investor-owned utilities in Oregon for on-bill repayment. MPower Oregon is a subsidiary of the Network for Oregon Affordable Housing (NOAH), which acts as the fund manager and assembles all streams of funding into a revolving loan fund. Other partners include the Energy Trust of Oregon (ETO), Enterprise Community Partners, and Green For All. Primary funding is from the U.S. Department of Housing and Urban Development, NOAH, Craft3, Clean Energy Works Oregon, the MacArthur Foundation, and the Energy Trust of Oregon.

## Context

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Location:

**Oregon**

Program Start Date:

**March, 2013**

Total Capital:

**\$8.1 million in program funds**

Utilities:

**Portland General Electric, NW  
Natural, and Pacific Power**

Website:

**[mpoweroregon.com](http://mpoweroregon.com)**

## Program Targets

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Number of Upgraded Units by 2014:

**2,550**

Target Cost Savings:

**20-25%**

**On-Bill Repayment.** MPower aggregates grants and incentives so that customers repay only 75% of the total project investment through a monthly fee on their utility bill. The monthly payment is designed so that the property owner experiences immediate savings.

**Comprehensive Energy and Water Upgrades.** MPower takes a whole-building approach, beginning with a streamlined investment-grade building assessment at no cost to the client. Measures address both common and tenant areas, and include insulation, boiler replacement, air sealing, appliance replacement, and water-savings measures such as dual low-flow toilets and aerators for showers and faucets.

**Marketing Through Trusted Messengers.** MPower, together with NOAH and ETO, compiled a list of qualifying projects based on existing data and relationships. MPower continues to build support and raise awareness with public officials, community action agencies, utilities, housing owners, service providers, and tenant groups.

**Partnering with a General Contractor.** MPower works with general contractor Walsh Construction, which is the contractor of choice for many affordable housing owners in Oregon. Walsh Construction oversees work by pre-approved subcontractors selected through the High Roads Advisory Committee and approved by Walsh.

### High Road Principles for Local Economic Development

MPower's High Road Principles target the inclusion of economic equity for historically underrepresented communities and economically disadvantaged populations. These principles provide a framework and benchmarks to support local contractors, and create jobs that pay family-supporting wages, provide worker compensation, and lead to careers and pathways out of poverty.

### Challenges and Lessons Learned

MPower spent some time redesigning its building assessment process in order to 1) meet ETO's requirements to access utility incentives, and 2) produce an actionable scope of work for MPower's integrated efficiency upgrades. By working closely with ETO, MPower has been able to streamline access to utility incentives as well as refine a scope and cost estimate that closely reflect the needs of MPower and the property owners it serves.

# Windsor Efficiency PAYS®

Windsor Efficiency PAYS® is designed to bring water efficiency to Windsor residents, with the ambitious goal of reaching 2,000 participants, equal to nearly a quarter of the utility's residential customers. Windsor has already passed its multifamily goal of 200 units, as well as serving over 150 single-family residences and continues to build on its past success. The model is based on the Energy Efficiency Institute's Pay-As-You-Save® model, and was developed through a \$650,000 grant from the U.S. Department of Energy administered by the Sonoma County Regional Climate Protection Authority.

## Context

Location:

**Windsor, California**

Program Start Date:

**August 2012**

Total Capital:

**\$4 million in Program Funds**

Utility

**Public Works Department of the Town of Windsor**

Website:

**windsorefficiencypays.com**

## Program Outcomes

(As of April 2013)

Number of Upgraded Multifamily Units:

**227**

Average Annual Water Savings per Multifamily Building:

**566,000 gallons**

Average Bi-Monthly Utility Cost Savings Per Multifamily Property:

**\$2,260**

Total Project Cost per Multifamily Property:

**\$24,778**

Repayment Rate:

**Over 99.9%**

**On-Bill Finance.** Repayment for efficiency upgrades takes place through the water bill on a bi-monthly basis for 5-15 years, depending on the measures. Each payment is capped at 75 cents for every dollar of estimated total bill savings from measures that generate water, waste-water, and energy savings. The surcharge is assigned to the water utility meter and includes utility shutoff in the case of non-payment.

**Water Conservation in a Package.** Efficiency measures primarily address water conservation, with the added benefits of associated energy savings. The Basic Package includes high-efficiency toilets, showerheads, and faucet aerators.

**Outreach and Marketing.** Before program launch, residents received bill inserts and mailers. Unless they choose to opt out of this service, contractors associated with the program can call customers directly to schedule an assessment.

**Qualified Contractors.** A Windsor Efficiency PAYS® Certification Agent designates qualified contractors after contractors undergo training on appropriate installation of measures, PAYS® program education, and a written exam.

### On-Bill Finance on the Water Bill

Windsor Efficiency PAYS® is a water on-bill program, where the Town of Windsor acts both as the utility and financier. The program provides water and energy savings, a critical nexus for efficiency initiatives in California. On top of the Basic Package described above, residents who desire additional resource-saving products or services can opt for the Basic Plus package that includes drought-resistant landscaping, compact fluorescent lightbulbs, and high-efficiency clothes washers. The program also offers co-pay measures for a hot water circulation pump and high-efficiency refrigerator.

## Challenges and Lessons Learned

Windsor Efficiency PAYS® selects measures that simultaneously offer water, wastewater, and energy savings. The program combines high-return water savings measures with higher-cost measures in order to maximize the total amount of water saved. Bundling measures in this way simplifies utility billing, streamlines costs for customers, ensures sufficient revenues for lead contractors, and prevents cherry-picking among measures (for example, low-flow toilets are often not appealing to customers, but can produce high savings once installed and can increase in appeal as part of a package).

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# Midwest Energy How\$mart®

How\$mart® is an on-bill financing energy efficiency service provided by Midwest Energy, a gas and electric cooperative serving western and central Kansas. Midwest Energy customers can receive comprehensive cost-effective energy efficiency measures without paying any upfront costs. How\$mart® is available to residents of both owner-occupied and renter-occupied housing, and generates total annual savings of 2.19 GWh and 260,000 therms of gas.

## Context

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Location:  
**Kansas**

Program Start Date:  
**July 2007**

Total Capital:  
**\$5.7 Million in Utility Investment**

Electric Cooperative:  
**Midwest Energy, Inc.**

Website:  
**[mwenergy.com/howsmart.aspx](http://mwenergy.com/howsmart.aspx)**

## Program Outcomes

(As of August 2013)

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Number of Upgraded Homes:  
**972, including 136 rental units**

Annual Energy Savings Achieved:  
**Electricity: 2.19 GWh**  
**Natural Gas: 260,000 Therms**

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**On-Bill Finance.** How\$mart® removes the first cost and split incentive barriers of investing in energy efficiency. First, Midwest Energy pays for the cost-effective measures in full upon installation. Customers then repay the cost to Midwest Energy through a monthly surcharge on the utility bill, and the charge is capped at no more than 90% of the expected energy savings. Residential customers have 15 years to repay the cost of the upgrade, and the repayment obligation is tied to the meter so that the party who benefits from the energy savings is responsible for continuing payments.

**Energy Efficiency Measures.** An extensive evaluation of the whole building structure identifies cost-effective efficiency measures. Any measure expected to deliver savings equal to or more than its cost must be included in the final scope of work. There is no cost of the energy assessment to the customer unless they decide not to pursue the identified measures. About two-thirds of energy assessments result in the installation of the upgrade.

**Contractor Selection.** Midwest Energy maintains a list of participating contractors. A customer can request to have their contractor of choice added to the list.

### Reaching the Rental Market

It is particularly difficult to penetrate the rental housing market with energy efficiency services because of the split incentive barrier. Midwest Energy designed How\$mart® to overcome this obstacle. The party that directly benefits from the energy savings is responsible for paying the surcharge, thereby removing a disincentive to landlord participation when it is the tenant who enjoys the lower bills. Since the repayment obligation is tied to the meter, it survives changes in tenancy. Landlords use disclosure forms provided by Midwest Energy to inform new tenants about the repayment obligation as part of the lease agreement.

### A Win-Win for Midwest Energy and Customers

Midwest Energy enjoys improved customer satisfaction from the How\$mart® program, and considers it part of its suite of utility services. 97% of How\$mart® participants have reported high satisfaction with Midwest Energy compared to 85% of all customers receiving general utility services but not participating in How\$mart®. Midwest Energy is able to fully recover the program costs, and the program has proven to be a low-risk endeavor with very few defaults.