



Financing Guidebook for Energy Efficiency Program Sponsors
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*New program summaries added July 2008.

Executive Summary

American homeowners have spent record sums to upgrade their living space and increase the value of their prized asset. This guidebook provides an overview of the market trends and financial issues that affect homeowner expenditures on home improvements, and outlines the role efficiency programs and special financing can play in encouraging greater investment in energy efficiency. It is intended for program sponsors who may be considering the development of a new home improvement program, or are considering ways to improve an existing one. Key findings are outlined below.

American homeowners spend significant funds to improve their homes. U.S. home improvement spending grew five percent per year between 2000 and 2005.¹ In 2005, the latest year for which data are available, American homeowners spent an estimated \$188 billion improving their homes.² This growth is being driven by several demographic and economic factors, including a steady rise in homeownership rates (especially among minorities); the continued aging of the U.S. housing stock; a growing preference for larger and more luxurious living spaces; and a trend among older baby boomers to upgrade their homes prior to retirement so they can age in place. Rising income levels and home prices, especially at the higher-end of the market, have provided the financial means for homeowners to pay for the desired improvements.³

Recent homebuyers are likely to make home improvements. Though homeowners make home improvement decisions in response to a number of different factors—such as equipment failure or the birth of a new child—one event known to spur significant expenditures is a home purchase. These improvements are usually made within the first two years of home ownership.

Energy-related improvements account for about 14% of home improvement spending. The most popular improvement projects include kitchen and bath remodels and room additions. However, in 2005 approximately 14% of expenditures (\$23 billion) were directed toward improvements that affect energy use, such as HVAC replacements, new windows, and insulation.⁴ Owners of older homes tended to spend more on these types of upgrades, on average, than owners of newer homes. Energy-related spending will likely increase as the U.S. housing stock ages and energy prices continue to climb.

Homeowners use a variety of options to pay for desired home improvements. Homeowners have demonstrated that they will spend money to improve their homes, both to enhance their quality of life and to increase the re-sale price of their home. The three most common sources of funds are the following:⁵

- **Cash (63% of Expenditures).** Over 85% of homeowners report using available cash to pay for at least some of their home improvement costs. The typical sources include savings or a sudden windfall such as a tax refund, bonus, or gift. Because no interest costs are incurred, cash is typically the least expensive method for financing a home improvement project.
- **Home Equity (18% of Expenditures).** As home prices have risen, many Americans have found themselves with significant equity in their homes. Homeowners can tap into this equity in a number of ways and use the proceeds to finance home improvements. This includes home equity loans, a home equity line of credit, or a cash-out refinance. Because such loans are secured by the home, interest rates tend to be lower than other types of loans. Any interest paid is also tax deductible, further reducing the net costs of these loans.
- **Personal or Unsecured Debt (12% of Expenditures).** Homeowners without cash or available home equity can borrow money using unsecured debt instruments. These include personal loans from a credit union, bank, or other lending institution, as well as credit cards. Unsecured financing has interest rates that are higher than home equity loans (because they are not secured), and the interest costs are not tax deductible.

¹ Joint Center for Housing Studies of Harvard University (JCHS), *Improving America's Housing 2007: Foundations for Future Growth in the Remodeling Industry* (2007).

² *Ibid*, Total U.S. remodeling spending in 2005 was approximately \$280 billion; \$188 billion of that was spent by homeowners on remodeling single and multi-family housing. The remainder was spent on general maintenance of and improvements to rental housing (p. 2, and Table A-1).

³ For more information on these and other trends affecting home improvement spending, see the JCHS remodeling reports published in 2007 and 2005.

⁴ JCHS, Harvard University (2007).

⁵ JCHS, Harvard University, *Home Improvement Finance: Evidence from the 2001 Consumer Practices Survey* (October, 2003).

Sponsor-provided financing gives homeowners another option.

Some homeowners lack sufficient cash or home equity, to pay for desired upgrades. Faced with using credit cards or taking out a personal loan, some may decide to delay or downsize a project. Many energy-efficiency program sponsors work with lenders to offer special financing to homeowners who participate in their home improvement programs. This financing is typically structured as unsecured debt, with limits of up to \$20,000, repayment periods up to 10 years, and starting interest rates similar to a personal loan (currently about 13%), though some program sponsors choose to reduce the effective interest rate offered to the homeowner by “buying down” the rate via a lump sum payment to the lender. This special energy-efficiency financing can be attractive to homeowners if the interest rate is lower than other options, or the borrowing process involves less hassle.

In addition, program-sponsored financing can make the difference for lower-income homeowners who may not have access to cash, home equity, or market-rate financing. Mainstream lenders typically will not issue them loans without special assurances from the program sponsor. Program sponsors can help address these barriers by offering special incentives or financing options targeted to these households. This could involve partnering with local community organizations, working with lenders approved by the Federal Housing Administration (FHA) to offer discounted FHA home improvement loans or streamlined 203(k) rehabilitation mortgages, or providing loan guarantees for select homeowners. Program sponsors can also form alliances with state energy-efficiency finance programs and housing finance programs to leverage resources to finance the incremental cost of efficiency improvements for lower income households.

Program sponsors can use special financing to improve overall program effectiveness.

Many homeowners do not *need* special program-provided financing to pay for energy improvements as they have accumulated savings and/or have access to attractive equity-based loan products. However, including special financing in an energy-efficiency program provides three important benefits for the program sponsor. First, when low interest rates are offered, special financing can be a promotional hook to attract homeowners’ attention. By promoting a special deal, the program sponsor can interest homeowners in its efficiency program, and then begin to recruit their participation. Second, when structured as a simple transaction with limited paperwork or time delays, special financing can help contractors close deals and encourage greater homeowner follow through. Third, program financing can be used to create a key financial connection among the program sponsor, the contractor, and the homeowner. It provides a mechanism for the program sponsor to achieve important program goals, such as requiring a comprehensive assessment, using only pre-screened and trained contractors, and installing recommended efficiency measures. Financing also provides a valid link for the program sponsor to conduct appropriate post-installation quality assurance and gather information for use in program evaluation.



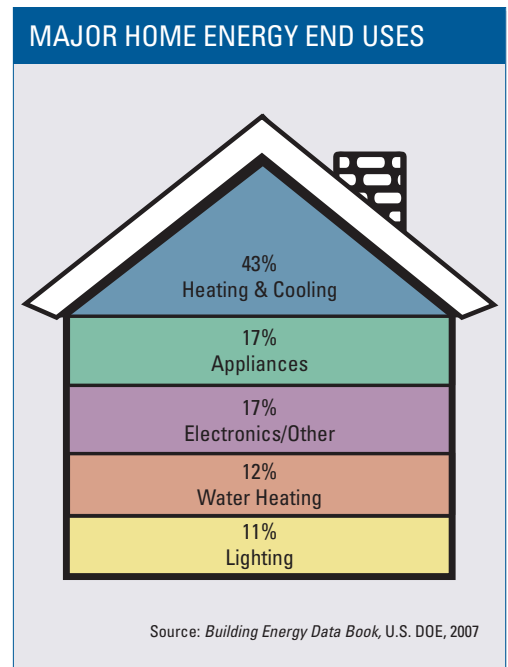
Introduction

U.S. households typically use up to 30 percent more energy than necessary to achieve the desired level of performance and comfort.⁶ This waste costs consumers money, stresses our energy supply systems, and unnecessarily creates air pollution from fossil fuels used to produce electricity. The impacts are local, national, and global, and the U.S. Government has increasingly recognized the need to improve the efficiency of existing housing in the United States.

The largest portion of household energy consumption—over 40 percent—goes toward warming the inside environment in the winter and cooling it in the summer.⁷ Homeowners can dramatically reduce this seasonal energy consumption by installing new heating and cooling equipment; sealing and insulating heating, ventilating, and air conditioning (HVAC) duct work; and improving the building envelope with air sealing, insulation, and upgraded windows. These efficiency measures are proven, cost-effective, and provide numerous benefits for homeowners, including increased comfort and improved durability. Yet many homeowners have not embraced these measures and significant energy-savings potential remains to be captured.

Nearly 100 utilities, states, and regional organizations—referred to here as energy-efficiency program sponsors—offer programs to spur consumer investment in heating- and cooling-related energy-efficiency improvements. Their home improvement programs range from simple to complex, and can include such elements as consumer education and outreach, technical assessments, contractor training, post-installation inspections, and financial incentives (often special energy-efficiency financing). Many homeowners have access to cash or market based financing and really do not need financial assistance from program sponsors to afford the efficiency upgrades. However, program sponsors have found that offering financing enhances the success of their programs by providing a marketing hook for consumers, serving as a platform for building a qualified contractor network, and providing a mechanism for gathering program evaluation data.

The purpose of this report is to help program sponsors understand how homeowners typically pay for home improvements, and the role special program financing can play in improving energy-efficiency programs. It provides background information on U.S. home improvement spending, identifies key sources of funds used to pay for improvements, outlines best practices in energy-efficiency home improvement program design, describes options for setting up a financing program, and provides summaries of six successful efficiency programs that have used financing in slightly different ways. Appendix A includes a more detailed overview of the various market-based loan products available to homeowners for financing home improvements.



⁶ The U.S. Environmental Protection Agency (EPA) estimates that by using ENERGY STAR qualified products and services, U.S. households can reduce energy use up to 30 percent and save \$600 a year on their utility bills without sacrificing comfort or performance.

⁷ The U.S. Department of Energy, 2007 Building Energy Databook.

Home Improvement Spending in the United States

NATIONAL TRENDS

In 2005, over 20 million U.S. homeowners implemented over 50 million home improvement projects, spending an average of \$9,080 per household.⁸ The total spending of \$188 billion was 36% more than in 2003. While growth slowed slightly in 2006, housing experts predict that the slowdown will be temporary.⁹ This significant growth is being driven by a number of social and economic factors.

First, the U.S. housing stock is aging (average age is 31 years), and homeowners must invest continually to maintain their homes. This leads to a steady stream of spending on roof replacements, electrical upgrades, and plumbing repairs. Second, homeowners have increased wealth—either from increased income or rising home equity—and many are choosing to spend some of that wealth on their home. In fact, the largest share of home improvement spending, and the area of the biggest growth, is discretionary projects designed to enhance aesthetics or quality of life, such as kitchen and bath remodels and room additions (See Table 1 for more details). Changes in cultural attitudes, such as a preference for larger living spaces and an increased focus on the home as a place to entertain friends and family, have also fueled the volume of remodeling and expansion projects.

Americans of all types take on home improvement projects, but two groups are responsible for the greatest spending: wealthy homeowners and baby boomers. Wealthier households are more likely to implement high-end projects, and they thus spend more per household than other homeowners. Owners of higher-end homes (valued over \$400,000) made up 17% of all homeowners, but were responsible for 41% of home improvement expenditures in 2005 (see Table 2). Baby boomers are investing heavily due to increased wealth and a desire to upgrade their homes for retirement. In 2005, baby boomers represented 45% of all homeowners but accounted for 54% of all expenditures. They are the wealthiest generation ever, and many are upgrading their homes with a desire to age in place. Even as the oldest baby boomers settle into retirement, spending by younger boomers (born 1955–1964) is expected to remain strong for years. A third group worth noting is recent homebuyers, who make up 18% of homeowners but account for 36% of home improvement projects. Homebuyers often make major improvements within a year or two of moving into a house. Recent research indicates that about 75% of homebuyers identify a list of desired projects at the time of purchase, and almost 90% work on these improvements within a year of moving in.¹⁰ Buyers who trade up are more likely to undertake larger, more expensive projects than first-time buyers.

TABLE 1. HOME IMPROVEMENT EXPENDITURES BY U.S. HOMEOWNERS (2005)

TYPE OF IMPROVEMENT	NUMBER OF PROJECTS	EXPENDITURES
Remodeling (kitchen, bath, room additions)	7.2 million	\$69.8 billion
Interior and exterior replacements (roofing, siding, window/doors, insulation, flooring)	17.6 million	\$51.4 billion
Property improvement (garage, driveway, retaining walls, etc.)	6.5 million	\$30.9 billion
Systems and equipment replacement (plumbing, electric, HVAC, appliances)	17.8 million	\$19.5 billion
Other improvements (porch/deck addition, disaster repair, other)	2.6 million	\$16.7 billion
TOTAL	51.7 million	\$188.3 billion

Source: *Foundations for Future Growth in the Remodeling Industry*, JCHS, Harvard University, 2007. Table A-1.

⁸ JCHS, Harvard University, 2007. Figures include single-family and multifamily owner-occupied housing.

⁹ Ibid.

¹⁰ JCHS, Harvard University. *Measuring the Benefits of Home Remodeling*. 2003. p.10, referring to a survey conducted by Hanley-Wood.

TABLE 2. DEMOGRAPHICS OF HOME IMPROVEMENT EXPENDITURES (2005)

	TOTAL HOMEOWNERS		HOMEOWNERS REPORTING PROJECTS		TOTAL EXPENDITURES		AVG. SPENDING PER HOUSEHOLD
	(000s)	(%)	(000s)	(%)	(\$ Millions)	(%)	(\$)
TOTAL	74,293	100%	20,742	100%	188,345	100%	\$9,080
Annual Income							
Under \$40,000	26,315	35%	6,242	30%	\$38,425	20%	\$6,156
\$40-80,000	24,894	34%	7,209	35%	\$49,069	26%	\$6,807
\$80-120,000	13,043	18%	4,047	20%	\$41,234	22%	\$10,189
\$120,000 and Over	10,010	13%	3,236	16%	\$29,605	16%	\$9,149
Home Value							
Under \$100,000	21,581	29%	5,543	27%	\$27,223	14%	\$4,911
\$100-150,000	12,339	17%	3,418	16%	\$18,386	10%	\$5,379
\$150-200,000	9,657	13%	2,800	13%	\$17,579	9%	\$6,278
\$200-250,000	6,611	9%	1,929	9%	\$15,791	8%	\$8,186
\$250-400,000	11,698	16%	3,434	17%	\$31,368	17%	\$9,135
\$400,000 and Over	12,406	17%	3,617	17%	\$77,999	41%	\$21,565
Age of Household Head							
Under 35	9,621	13%	2,778	13%	\$19,369	10%	\$6,972
35-44	15,339	21%	4,577	22%	\$51,763	27%	\$11,309
45-54	17,631	24%	5,201	25%	\$58,104	31%	\$11,172
55-64	13,962	19%	3,935	19%	\$34,816	18%	\$8,848
65 and Over	17,740	24%	4,251	20%	\$24,294	13%	\$5,715
Race							
White	59,159	80%	16,757	81%	\$153,758	82%	\$9,176
Black	5,953	8%	1,447	7%	\$13,164	7%	\$9,097
Hispanic	5,651	8%	1,610	8%	\$10,606	6%	\$6,588
Asian and Other	3,530	5%	927	4%	\$10,817	6%	\$11,669
Generation							
Echo (1975 and later)	5,398	7%	1,518	7%	\$8,895	5%	\$5,860
Gen X (1965-74)	12,769	17%	3,798	18%	\$42,208	22%	\$11,113
Younger Baby Boom (1955-64)	17,659	24%	5,212	25%	\$56,939	30%	\$10,925
Older Baby Boom (1945-54)	15,779	21%	4,590	22%	\$45,000	24%	\$9,804
Matures (1935-44)	10,822	15%	2,892	14%	\$21,482	11%	\$7,428
Pre-Depression (Before 1935)	11,865	16%	2,732	13%	\$13,820	7%	\$5,059

Data include single- and multi-family owner-occupied housing.
 Source: JCHS, Harvard University, *Foundations for Future Growth in the Remodeling Industry*, 2007, Table A-3

HOMEOWNER INVESTMENTS IN ENERGY EFFICIENCY

Every year U.S. homeowners replace aging heating and cooling systems and upgrade building shell components such as windows or insulation. In 2005, Americans spent \$23 billion on these energy-related projects, up from about \$15 billion in 1995.¹¹ While virtually all HVAC and window retrofits will increase efficiency compared to the old models they are replacing, market share data for ENERGY STAR qualified HVAC and windows indicate that many homeowners do not opt for the most energy-efficient choices when making replacement decisions. Program planners and policy makers tend to attribute this behavior to three commonly identified market barriers:

- **Limited awareness or motivation.** The majority of U.S. homeowners are unaware of the relative efficiency of their homes, what type of efficiency upgrades should be made, or how they would benefit. Even when aware, many consumers encounter conflicting priorities when determining which home improvement projects to address. Some homeowners choose to invest in aesthetic projects unrelated to energy efficiency (e.g., kitchen and bathroom remodeling, siding replacement, and wood flooring installation) over more mundane projects such as HVAC replacement or new insulation.
- **Limited access to knowledgeable and qualified contractors.** While there are many contractors who can install HVAC equipment or replace windows, relatively few are trained in the most energy-efficient design and installation practices. For example, many HVAC contractors neglect to perform an equipment sizing calculation before selecting a new air conditioner or furnace, and insulation contractors may not seal air leaks in the attic before laying down new insulation. Thus, when homeowners are making equipment replacement decisions, they may not be counseled effectively on the most energy-efficient options.
- **Limited financial resources to pay for upgrades.** Some homeowners lack cash and are unable or unwilling to take on additional debt. Others are restricted by low credit scores that hinder their ability to qualify for desirable financing. Approximately 27% of Americans have a credit score below 650, which puts them in a range less attractive to lenders and likely to limit their loan options or raise their interest rates.¹²



Future opportunities for energy efficiency investment are large. Two-thirds of the nation's housing stock is at least 25 years old, and the need for upgrading of systems and structures will provide opportunities to change out old HVAC systems and add insulation. Rising energy prices and growing concerns about climate change have made homeowners more aware of their energy consumption and more interested in finding ways to cut monthly utility bills. Consumer tax credits included in the 2005 Energy Policy Act have contributed to increased interest and encouraged actual investment. A survey conducted by a building products manufacturer found that 39% of homeowners planned to take advantage of the energy-efficient products tax credits in 2007—a significant increase from the 23% who reported that they took advantage of the tax credits in 2006.¹³

¹¹ JCHS, Harvard University. *Foundations for Future Growth in the Remodeling Industry*. 2007. Table A-10.

¹² MyFICO.com, the online consumer site of the Fair Isaac Company. FICO credit scores can range from 350 to 850, and the median score is 723.

¹³ The 2006 Energy Efficiency Tax Credit survey of 1,040 American adults conducted for building products manufacturer Johns Manville by Opinion Research Corporation.

PAYING FOR HOME IMPROVEMENTS

Homeowners can pay for desired home improvements in a number of ways. The most commonly used source of funds is savings, followed by home equity and unsecured credit (see Table 3). The various funding options for homeowners, along with their particular advantages and disadvantages, are outlined below (see Appendix A for more details):

- **Savings.** Many homeowners withdraw funds from their savings accounts or mutual funds, or apply a tax refund, bonus, or gift to pay for home improvements. Using cash or savings is typically the least expensive way to pay for a project—since no interest costs are involved—and it tends to be the preferred choice for homeowners who have funds available.
- **Home equity loan.** For homeowners with equity in their homes, borrowing on that equity can be an easy and relatively low-cost way to finance improvements. Formerly called a second mortgage, home equity loans commonly carry fixed interest rates over 5, 10 or 15-year terms. Approvals are usually quick and fees minimal. For more flexibility and even faster access to funds, homeowners can use a home equity line of credit (HELOC). The interest rate for a HELOC is variable, but borrowers can pay off the balance whenever they want as long as they continue to make regular interest payments. The interest on home equity loans and HELOCs is tax deductible, and this helps reduce the net interest cost paid by the homeowner. Home equity loans and HELOCs have been growing in popularity, with total borrowing in 2005 estimated to be over \$300 billion, compared to only \$30 billion in 1995.¹⁴ Experts estimate that anywhere from a quarter to a third of money borrowed through home equity loans or HELOCs is spent on home improvements.¹⁵

TABLE 3. HOMEOWNER EXPENDITURES ON REMODELING-BY SOURCE (2001)

FUNDING SOURCE	SHARE OF HOMEOWNERS ¹⁶	SHARE OF EXPENDITURES
AVAILABLE CASH (SAVINGS, TAX REFUNDS, GIFTS)	85.5%	63.4%
TOTAL HOME SECURED CREDIT	7.0%	17.7%
Home Equity Loan	2.9%	7.4%
Home Equity Line of Credit	2.2%	4.7%
Cash out Refinance	2.0%	5.5%
TOTAL UNSECURED CREDIT	22.1%	12.3%
Credit Card	20.2%	8.3%
Personal Loan	2.3%	4.1%
INSURANCE	5.1%	4.2%
OTHER	2.7%	2.5%
TOTAL	122.9%	100.0%

Source: JCHS, Harvard University. *Home Improvement Finance: Evidence from the 2001 Consumer Practices Survey* (October, 2003).

¹⁴ Greenspan, A and James Kennedy. *Sources and Use of Equity Extracted from Homes* (2007).

¹⁵ Ibid.

¹⁶ Share of homeowners adds to more than 100% because some homeowners reported more than one source of funds for their projects.

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- **Mortgage refinance with cash out.** Homeowners can also extract the equity in their homes and refinance at the same time. The interest rates can be the same as or slightly higher than regular mortgages, and are typically lower than home equity loans. However, there are often fees, or points, associated with a refinance, and many experts recommend this option only if a homeowner can take advantage of lower interest rates. Many homeowners have utilized this option, and Freddie Mac estimates that in 2006 homeowners extracted \$318 billion in equity as part of a refinancing transaction - almost 3 times more than was extracted in 2002.¹⁷ As with home equity loans, about one-third of the funds generated via cash-out refinances are spent on home improvements.¹⁸



- **Rehabilitation Mortgage.** Rehabilitation mortgages allow buyers of homes in need of repair to combine the home purchase and renovation costs in a single fixed-rate mortgage. These special loans can also be used for refinancing. One type of rehabilitation mortgage is the Federal Housing Administration's (FHA) streamline 203(k). This mortgage, offered only through FHA-approved lenders, can benefit cash-strapped homebuyers as it requires only a 3% down-payment.
- **Energy Improvement Mortgage (EIM).** The EIM allows borrowers to include the cost of energy-efficiency improvements in the mortgage at the time of sale or refinancing, without increasing the down-payment. EIMs are sometimes confused with EEMs, or energy efficiency mortgages, which are available to buyers of new homes that already meet specified energy-efficiency levels. EIMs are sponsored by federally insured mortgage programs (FHA and Veterans Administration) and the conventional secondary mortgage market (Fannie Mae and Freddie Mac). They can be beneficial for buyers of older homes in need of significant efficiency upgrades, but EIMs have not been widely used. Lenders familiar with EIMs cite several reasons for the low demand, including lack of lender and consumer awareness, the requirement to conduct a home energy assessment before obtaining the mortgage, and the need to establish a separate escrow account for the renovation funds.
- **Personal unsecured loan.** For homeowners without equity in their homes, taking out a personal loan can be a practical option. These loans can be originated through a bank, credit union, or other type of financial institution. They are usually limited to no more than \$35,000, and must be paid back within 10 years. Interest rates are typically higher than on secured home equity loans or lines of credit. Some lenders offer FHA Home Improvement Loans, which are backed with a federal loan guarantee and tend to have lower interest rates similar to a secured home equity loan.
- **Credit card.** Credit card debt is often subject to high compounding interest rates and is not usually a good way to finance major retrofits. Absent other alternatives, however, credit cards can be useful for smaller purchases or ones that the homeowner can pay off quickly.
- **Contractor-originated lien contracts.** Some contractors have arrangements with lending institutions that allow the contractor to offer loans called "lien contracts." Lien contracts involve placing a lien or deed of trust against a home, and if loan payments are not made the lender can foreclose on the property and sell it at public auction. If this happens, the homeowner rarely receives anything from the sale no matter how small the original debt. Because of numerous scams that have been perpetrated on unsuspecting homeowners, experts typically discourage consumers from using lien contracts.

¹⁷ Freddie Mac, Office of the Chief Economist. *Cash-out Refinance Report: 3Q2007* (2007).

¹⁸ Greenspan, A and James Kennedy, *Sources and Use of Equity Extracted from Homes* (2007).

Energy-Efficiency Home Improvement Programs

COMMON ELEMENTS OF SUCCESSFUL PROGRAMS

Program sponsors around the country offer a wide variety of home improvement programs for their customers or constituents. The simplest may include a basic outreach campaign combined with a low-interest loan to attract homeowners. The most sophisticated programs may provide one-stop shopping, offering homeowners education, multiple financing options, and direct access to qualified contractors. Common elements of the most successful programs are outlined below.

COMPREHENSIVE HOME ASSESSMENTS

Energy-efficiency program sponsors began offering what were often called “energy audits” in the 1970s after rising energy costs increased consumer interest in energy consumption. The purpose of these audits was usually consumer education, and consisted of a simple survey of the home, recommendations for no- or low-cost improvements, and identification of more extensive upgrades that the homeowner could implement if desired. Sometimes the auditor provided educational materials and free energy-saving products, such as weather-stripping.

In recent years, these audits—or home energy assessments—have become much more comprehensive. Many program sponsors use them in their residential efficiency programs, both as a mechanism to attract participation, and as a means to enhance program cost-effectiveness by customizing the recommendations and incentives for each homeowner. Some program sponsors have a team of consultants that perform baseline checkups and then refer homeowners to qualified contractors. In other programs, participating contractors conduct the home energy assessment, allowing the homeowner to get the analysis and installation performed by a single entity.

The most well-known and nationally recognized home energy assessors are Home Energy Rating System (HERS) raters. HERS raters undergo training and are qualified under the Mortgage Industry National Home Energy Rating System Accreditation Standards, which set the national procedures for home energy ratings. HERS raters are trained and certified by training providers accredited by the Residential Energy Services Network (RESNET). A comprehensive HERS assessment will typically include a top-to-bottom walk-through of the home, use of a blower door to measure air leakage, use of a duct blaster to measure duct leakage, and the use of an infrared camera to detect cold and hot spots and air movement in the walls. The last step is to recommend cost-effective upgrades for the homeowner. This type of assessment can take two to three hours to complete and cost a few hundred dollars.

Some program sponsors will provide free assessments to homeowners to get their foot in the door. Unfortunately, there is mounting evidence that few homeowners actually make improvements after a free assessment. As a result, some program sponsors ask homeowners to contribute at least part of the cost for the assessment, which helps ensure that homeowners are more vested in the process and less likely to back out after the assessment is complete.

HOME PERFORMANCE WITH ENERGY STAR

Home Performance with ENERGY STAR is a joint DOE/EPA program that utilizes a whole-house approach to improving energy efficiency and comfort while protecting the environment. For utilities, Home Performance with ENERGY STAR can help meet energy-efficiency and renewable-energy mandates, deliver peak demand reductions, delay or avoid energy supply investments, and consolidate program delivery. More information can be found at www.energystar.gov/homeperformance.



HOME PERFORMANCE WITH
ENERGY STAR



CONTRACTOR NETWORK

Many programs include a network of participating or eligible contractors who have undergone some level of training and/or pre-screening. Having an established contractor network helps program sponsors ensure that homeowners are satisfied with equipment installations, and that projected energy savings are achieved. It can take several years to develop and cultivate a good contractor network.

In addition to recruiting and signing up contractors, it is necessary to develop a training and certification system. Training can include both classroom and field sessions and should focus on building science principles, diagnostic testing, and proper installation techniques. Some program sponsors also offer training on sales techniques to help contractors promote energy-efficiency upgrades more effectively to homeowners.

To make sure training is effective, and to ensure contractors are performing adequately, programs can include written exams and field oversight. Some program sponsors set up a system for spot-checking a proportion of each contractor's jobs, and will remove from the program contractors who do not meet the established standards. Increasingly, large program sponsors are turning to outside organizations to assist with contractor certification and oversight. One such organization is the Building Performance Institute (BPI), which offers support for program sponsors who want to create a contractor network. BPI and RESNET are joining forces to create a certification that both BPI technicians and RESNET raters can qualify for—the Home Performance Analyst. Another option is to employ non-profit consumer advocate organizations to perform contractor screening. These organizations typically charge contractors to perform an independent screening of their licenses, bonding, insurance, financial integrity, and references. They can also provide complaint resolution services.

HOMEOWNER FINANCING AND INCENTIVES

As mentioned previously, program sponsor financing is not essential in helping homeowners pay for improvements—many homeowners can access cash or various market-based financing—but it is an important element of good program design. Program sponsors who include financing and/or rebates in their programs can attract interest from homeowners at all income levels and reduce the upfront cost of investing in efficiency measures. Financing is a beneficial mechanism for defining what measures the homeowner installs and who they hire to do the installation, thereby helping program sponsors improve energy savings and cost effectiveness of their programs. Program sponsors typically require that homeowners who take advantage of their energy-efficiency financing or rebates use participating contractors to do the installation work. In addition, many require that only efficiency measures identified during a home energy assessment are eligible for rebates or inclusion in a loan package.

There are three general types of financial incentives offered by program sponsors:

1. A special loan (either market rate or at a reduced interest rate)
2. A lump-sum rebate based on the total upgrade cost
3. Product-specific rebates (e.g., \$300 toward a high-efficiency furnace)

BUILDING PERFORMANCE INSTITUTE (BPI)

BPI is a non-profit organization formed in 1993 to provide third-party certifications of weatherization contractors. It now operates an integrated certification, accreditation, and quality assurance program for building industry professionals. BPI establishes technical standards and administers certification tests for technicians. It also accredits contracting firms that meet several criteria, including the employment of BPI certified technicians. Some program sponsors require that contractors be accredited by BPI to participate in their program. For more information on BPI, visit www.bpi.org.



Some program sponsors only offer one of these incentives, while others offer homeowners a choice. For example, a program sponsor may offer a loan with a discounted interest rate, or a cash rebate of equivalent value for homeowners who decide to finance the upgrade themselves. Many programs include special incentives for lower-income households, including higher rebates or lower interest rates on the loan. Rebate payments and loan disbursements are generally made after installation work is complete, with loan disbursements almost always routed straight to the contractor.

Energy-efficiency financing offered by program sponsors is typically structured as unsecured debt (no home equity required), with repayment terms of up to 10 years, low or no fees, and quick approvals. Lenders offer these loans at market rates of interest. To secure a lower rate for consumers the program sponsor can “buy down” the rate by making a payment to the lender at the time the loan is originated. While consumers sometimes have the option to include non-efficiency-related products in the special loan, they typically must install one or more eligible measures to qualify.¹⁹ Contractors can actively promote loans to homeowners during their marketing and in-home sales efforts. In some programs, the contractor manages the loan paperwork for the customer, working with customers to fill out the forms and then obtaining lender approval. This system benefits both the customer (streamlined service) and the contractor (closing more deals).

MARKETING AND OUTREACH

An essential element of any efficiency program is outreach to inform customers about the opportunity to save energy, reduce utility expenses, and help the environment. Program sponsors spread the word in a variety of ways, including utility bill inserts, Web site content, press releases, newspaper story placement, and radio and newspaper advertisements. If the program also includes participating contractors, they conduct marketing efforts as well. Program sponsors can also work with local real estate agents and lenders. Real estate agents develop a close relationship with homebuyers and have the ability to provide information about energy-efficiency programs and funding before financing is set and the home is purchased.

Another method for motivating homeowners is to provide them with a historical energy usage profile and a list of recommended improvements. This can be informative for both existing and new homeowners. Some utilities include historical energy usage on monthly bills. The ENERGY STAR program offers the Home Energy Yardstick online tool (www.energystar.gov/yardstick), which helps homeowners compare their home’s energy use to similar homes across the country, and recommends energy-saving home improvements. ENERGY STAR also offers the Home Energy Advisor that provides homeowners with recommended improvements for typical homes in their area (www.energystar.gov/homeadvisor).

POST INSTALLATION INSPECTIONS AND QUALITY ASSURANCE

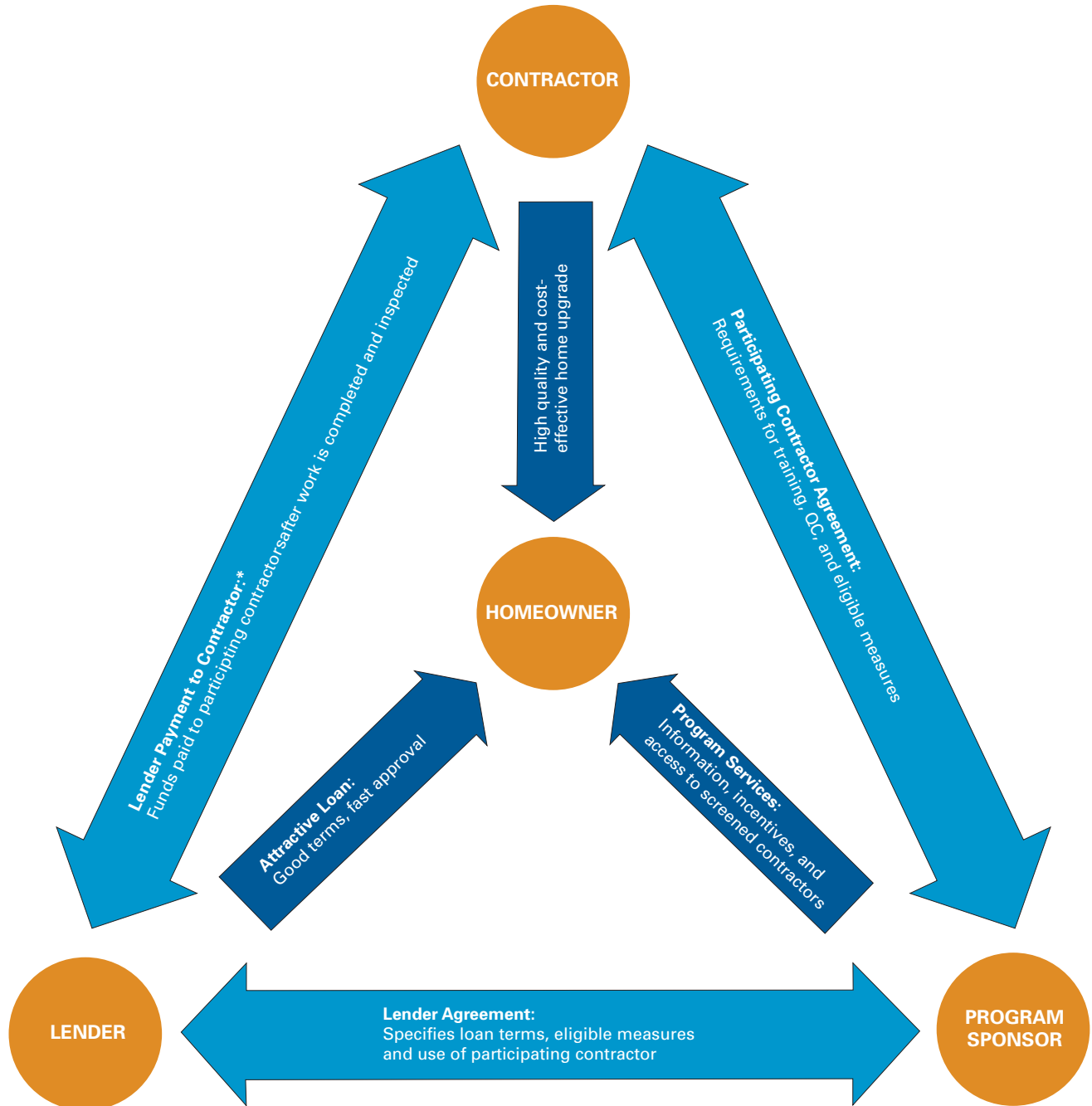
To ensure work is done properly and the equipment is actually installed, many program sponsors inspect completed jobs. Some will inspect all jobs, while others randomly inspect only a portion of jobs completed by each participating contractor. Quality assurance inspections can be performed by in-house personnel or contracted out to a third party. Inspections serve a critical role in reassuring homeowners that participating contractors will be held accountable for their work, and helps build trust in the program sponsor.

REBATES VERSUS LOANS: WHAT DO CONSUMERS PREFER?

Many program sponsors offer both low-interest loans and product rebates. Their programs have shown that customers will tend to select one incentive over the other, based on their financial situation. Homeowners with cash on hand or access to cheap funds on their own are more inclined to take the cash rebate. Homeowners with less available cash or no available equity in their home tend to opt for the low-interest loans through the program sponsor. Offering both types of financial incentives allows program sponsors to meet the needs of a wider consumer audience.

¹⁹ Some eligible measures commonly included in energy-efficiency programs include high-efficiency heating and cooling systems; solar and high-efficiency domestic hot water systems; attic, wall, and crawl space insulation; air sealing; duct sealing and insulation; programmable thermostats; photovoltaic systems; and high-efficiency windows. (For more information on products and specific rebate amounts for individual home improvement programs, consult www.dsireusa.org, or www.energystar.gov/rebatefinder.)

USING FINANCING TO PROMOTE QUALITY ENERGY-EFFICIENCY IMPROVEMENTS



* Note: For programs using retail installment contracts, contractors execute an agreement with the lender allowing them to offer loans directly to homeowners. The homeowner would still make monthly payments to the lender.

SETTING UP A FINANCING OPTION

In the past, some program sponsors used their own funds to operate a loan program, but negative experiences with bad debt led most to abandon this approach. Now most work with outside lending organizations to establish energy-efficiency financing for homeowners. There are two basic methods: 1) work with a local bank to set up a customized version of a regular unsecured consumer loan; or 2) hire a loan program administrator to offer a turn-key service using a retail installment contract. Each is described below.

A number of program sponsors form partnerships with one or more local banks or credit unions, and then refer eligible homeowners to the participating lenders. The lender screens potential recipients, determines creditworthiness, issues the loan, and handles ongoing collection of loan payments. The financing is typically unsecured consumer loans. No home equity is required, but the homeowner must be deemed creditworthy by the lender to qualify. Starting interest rates for such loans can be high, though program sponsors can provide a lump-sum payment to the lender to “buy-down” the interest rate to a lower level. To be eligible for the reduced interest rate, homeowners must follow certain rules outlined by the program sponsors, such as the inclusion of eligible measures and the use of participating contractors to do the work. Austin Energy and MassSave are two program sponsors that use this approach. They are featured in program summaries below.

Program sponsors that want more control over loan terms, or greater ability to leverage contractors in the sales process, can work with an outside loan program administrator to develop a special financing product called a retail installment contract (RIC). A RIC is a financial arrangement that allows a consumer to purchase goods or services from a contractor on credit, using a special contract that fixes the finance charge and number of payments or “installments.” RICs are unsecured debt with simple interest and no origination fees or pre-payment penalties. Consumers may be familiar with RICs as they are a common way to finance the purchase of a new car. Unlike a loan, the RIC can be originated by the contractor at the time of sale, according to rules established by the lender. This allows contractors to take the financing paperwork on sales calls, and to execute it with the customer in the convenience of their own home. In addition to being a valuable sales tool for contractors, RICs provide extra benefits to borrowers by enabling them to assert a future claim against the lender if there is a problem with the installation. This provision makes lenders very motivated to oversee the quality of the contractors participating in their RIC program. Wisconsin Energy Conservation Corporation and NYSERDA are two program sponsors that have contracted with loan program administrators to operate a RIC-based program.

A number of loan program administrators specialize in developing RICs for energy efficiency program sponsors (see sidebar above). The funds for these RIC loan programs are provided by Fannie Mae, a government-backed lending institution best known for consolidating home mortgages. Several program sponsors have successfully utilized RIC-based financing, and information about their programs is included in the following section.

LOAN PROGRAM ADMINISTRATORS THAT WORK WITH PROGRAM SPONSORS

AFC First Financial
1005 Brookside Road
Allentown, PA 18106
Phone: (610) 433-7486

Energy Finance Solutions
431 Charmany Drive
Madison, Wisconsin 53719
Phone: (800) 969-9322

Viewtech Financial Services
5109-D East La Palma Ave.
Anaheim, CA 92807
Phone: (714) 695-3375

HOW RICS WORK FOR PROGRAM SPONSORS

INVESTOR (CURRENTLY FANNIE MAE)

Sets loan terms and eligibility criteria. Purchases loans from loan program administrators. Services loan re-payment.

LOAN PROGRAM ADMINISTRATOR

(firms such as AFC, EFS, and Viewtech that administer the loan programs for individual program sponsors) Creates customized loan forms. Processes interest rate buy-downs. Coordinates with participating contractors.

PARTICIPATING CONTRACTORS

Sign up through program sponsors and then execute agreement with the Loan Program Administrator. Take loan forms to customer homes and upon approval originate the loans.

HOMEOWNER

Apply for loan through contractor. Payments made to Investor (or its designee).

Energy Efficiency Program Summaries

MASSSAVE HEAT LOAN PROGRAM

MassSAVE is the new name for the Massachusetts Residential Conservation Services Program, which has been available since 1980 as a residential rating service. It underwent a massive redesign in 2001 and now provides energy information and services to all Massachusetts residential energy users. It is sponsored by the state's investor-owned utilities, as well as the Cape Light Compact, and is funded via the public good charge.



Financing Options

For National Grid, NSTAR Electric, and Berkshire Gas, the program is provided as a Home Performance with ENERGY STAR branded service. MassSAVE has arrangements with a number of local lenders to provide unsecured consumer loans. The sponsoring organizations subsidize the interest rates to make the loans attractive to homeowners (3% for regular homeowners and 0% for low-income households). Homeowners can borrow up to \$15,000 with repayment over five or seven years. The sponsors have found that centralized financing approved by phone is an extremely customer-friendly mechanism. Many of the sponsoring utilities also provide product rebates for certain measures, which can be combined with the HEAT loan to further reduce the costs of an upgrade.

Program Process

The homeowner begins by requesting a home energy assessment through MassSAVE. The energy advisor will identify energy-efficiency needs and determine what improvements are eligible for financing. The homeowner must then secure written contractor price proposal(s) for installation of the improvements. Some measures can be provided directly by program-supervised contractors as well. The price proposals are submitted to MassSAVE for review and approval. Once approved, the homeowner receives a HEAT Loan Authorization Form from MassSAVE and must then apply for a loan from a participating lender. After all improvements are installed, MassSAVE conducts a post-installation inspection.

Eligible Measures

- High-efficiency heating systems
- Oil, natural gas, or propane hot water boilers, furnaces, and steam boilers
- High-efficiency heat pumps
- Solar and high-efficiency domestic hot water systems
- Attic, wall, and basement insulation
- Air sealing measures
- Duct insulation and duct sealing
- ENERGY STAR qualified windows (replacements for single-pane windows only)
- ENERGY STAR qualified thermostats

Results

National Grid, one of the MassSAVE sponsors, reported that for its service territory (1.3 million customers) there were over 4,900 energy assessments completed and approximately 600 MassSAVE HEAT Loans issued in 2006, totaling \$4 million. Nearly 200 of the projects financed used 0% five-year loans (currently discontinued), and the remaining used 3% seven-year loans. The average loan was around \$6,800. The majority of loans were used for replacement heating systems (468 projects); the rest were for air sealing and insulation (200), domestic hot water upgrades (210), and window replacements (114).

WISCONSIN ENERGY CONSERVATION CORPORATION (WECC)

The Wisconsin Focus on Energy program is managed by the Wisconsin Public Service Commission, and is implemented by WECC, with assistance from the Energy Center of Wisconsin and other marketing and evaluation subcontractors. It is funded with public benefits charges; program services are available to customers of the utilities that contribute funds.



WECC oversees the Home Performance with ENERGY STAR Program, which includes an in-home assessment and rating, assistance with contractors, cash-back rewards, and a post-installation inspection. The cash-back rewards vary by program year. The program also offers financing options.

Financing Options

WECC offers homeowners financing through Energy Finance Solutions (EFS). The financing is an unsecured retail installment contract (RIC), and is available to homeowners with FICO scores of 620 or above. Prepayment of the loan, either in full or in part, is allowed at any time without penalty. There are no fees or charges for loan application or origination, and no points at closing. The minimum loan amount is \$1,000 and the maximum is \$10,000. To qualify for the subsidized financing, homeowners must install at least two of the eligible efficiency measures and use a program-approved contractor to perform the installation.

Starting on October 1, 2007, the Home Performance with ENERGY STAR Program made financing available at a subsidized interest rate of 9.99%. (Prior to that date market interest rates of 13.49% to 14.25% were available.) Homeowners who take advantage of the subsidized financing cannot receive cash-back rebates, which are available on some measures.

Program Process

Homeowners begin by scheduling an in-home assessment with a program consultant. The consultant provides an objective, third-party report of recommended solutions, and leaves behind a list of participating contractors for the homeowner.

The homeowner then selects a contractor and determines the efficiency measures they would like installed. Homeowners who desire financing can contact EFS directly to obtain an application, or they may be pre-approved by phone or online. The contractor will forward to EFS a copy of the signed contract for work, and upon approval EFS will draft a loan agreement for the homeowner to sign.

Once the homeowner has had all work completed, the consultant follows up with a post-installation inspection. Results are submitted to the Home Performance with ENERGY STAR Program and, upon approval from the program and receipt of the EFS certificate of completion (executed by the customer and contractor), EFS will submit payment to the contractor for the work performed.

Eligible Measures

- Natural gas or liquid propane water heaters
- Insulation (attic, wall, floor, sill box, interior and exterior foundation, sidewall)
- Air sealing
- Chimney liner (for poor drafting units only)

Results

Since 2001, nearly 10,000 homes have been evaluated under the Home Performance with ENERGY STAR Program, including 1,900 in the past year. WECC estimates that during the two-year period of July 2005 through June 2007, the program has secured gross energy savings of 1.26 million kWh/year and 800,000 therms/year. Peak load reductions are estimated to be 600 kW. Most of the savings are attributed to attic and wall insulation, and air sealing.

NEW YORK STATE ENERGY RESEARCH AND DEVELOPMENT AUTHORITY (NYSERDA)

NYSERDA's Home Performance with ENERGY STAR program is a comprehensive and coordinated program for guiding homeowners through a whole-house upgrade. Participating contractors conduct in-home assessments, install eligible measures, and can help homeowners secure financing. Only contractors who are fully accredited by the BPI are eligible to participate in the program.



Financing Options

NYSERDA provides several choices to help homeowners pay for upgrades. ENERGY STAR financing is offered by participating contractors, and processed by EFS. These RICs have a limit of \$15,000 or \$20,000, depending on the homeowner's credit score and desired loan term. The current interest rate is 5.99%. To help homeowners who can't qualify for the EFS financing product, NYSERDA also offers a loan in partnership with EFS and American General Finance (AGF) which is available to homeowners with credit scores as low as 550. It has a maximum loan term of five years and a maximum loan amount of \$10,000. It was launched in 2006 with a special introductory annual percentage rate (APR) of 4.99%. Energy Smart Loans are offered through a number of participating New York state financial institutions. These loans can be either secured or unsecured. The interest rate is bought down by NYSERDA by 4 percentage points for up to 10 years. Homeowners who choose to forgo program financing may be eligible to receive a rebate equal to 10% of the cost of certain energy-efficiency improvements, up to a maximum of \$3,000.

NYSERDA offers additional subsidies to low-income homeowners under its Assisted Home Performance with ENERGY STAR program. NYSERDA will pay up to 50% of the costs associated with the energy-efficiency improvements, up to a maximum of \$5,000 per household or \$10,000 for a two- to four-family building. The subsidy may be combined with other financing options or other low-income programs.

Program Process

Homeowners receive an in-home assessment from a participating contractor. They can then hire that contractor, or another participating contractor, to do the recommended work. Homeowners can work through the contractor to secure financing, apply for an ENERGY SMART Loan, or decide to finance the improvements themselves and receive a rebate equivalent to the interest rate subsidy provided to other program participants. Once the energy upgrades are complete and NYSERDA signs off on the work scope, payment is made directly to the contractor.

Eligible Measures

- Insulation upgrades
- Air sealing
- Duct sealing
- Heating system repair or replacement
- Domestic hot water heating upgrades
- ENERGY STAR appliances and lighting
- Other cost-effective energy saving measures

Results

In 2006 there were over 4,000 projects completed, representing \$31.8 million of work. About \$12.3 million (1,507 homeowners) was covered by the Assisted Home Performance with ENERGY STAR subsidy and \$15 million (2,283 homeowners) was financed with the 10% homeowner incentive. Additionally, NYSERDA expended \$4.4 million (592 homeowners) on ENERGY STAR loans; \$1.1 million on the Energy Smart Loan Fund; and \$455,442 (50 homeowners) on AGF loans. The average ENERGY STAR loan was \$7,512 and the average 10% homeowner financing incentive was \$6,589.

AUSTIN ENERGY

Austin Energy's efficiency programs date back to 1982 and are some of the most comprehensive in the country. Austin Energy is a community-owned electric utility and a department of the City of Austin.



Financing Options

Austin Energy works with a local lender, Velocity Credit Union, to offer loans with fixed interest rates of between 0% and 6.5%, depending on the duration of the loan. The maximum loan amount ranges from \$8,500 to \$11,000 and is based on the specific home improvement(s) the customer is undertaking. Homeowners can select a three-, five-, seven-, or ten-year term. Loans with higher maximums are available to owners of homes and duplexes that require more substantial efficiency improvements.

Program Process

The first step in this program is for a homeowner to request a home energy analysis and have a participating contractor provide recommendations and bids for cost-effective energy improvements. The homeowner then elects or waives an on-site bid approval by Austin Energy. Regardless, Austin Energy is responsible for submitting the bid to the lender for loan closing, allowing the contractor to begin work immediately thereafter. After the upgrades are completed, Austin Energy provides a quality installation inspection. In addition to the inspection, all contractors are previously trained in home performance improvements and duct air blasting techniques. Austin Energy ensures that all contractors follow strict installation standards, resulting in lower callbacks after the final inspection. Upon verification and completion the customer must sign a Completion Certificate, which is sent to the lender. The contractor is then paid directly by the lender.

Eligible Measures

- Duct sealing
- Duct replacement
- Air conditioning system replacement
- Window to central air conditioning system conversion
- Other cost-effective measures

Results

During 2007, 248 homeowners received loans under the program, producing estimated energy savings of 493,024 kWh. Rebates were paid to 1,712 homeowners, saving an estimated 3,403,456 kWh.

KEYSTONE HOME ENERGY LOAN PROGRAM

The Keystone Home Energy Loan Program—or Keystone HELP™—is a public-private partnership in which two Pennsylvania agencies are cooperating to offer energy loans under a single private-sector marketing umbrella. The program was launched by AFC First Financial (AFC) in January 2006, and offers financing for both energy-efficiency and renewable-energy improvements. AFC is responsible for marketing, contractor recruitment, training and management, and loan processing. Funding for the loans is provided by the Pennsylvania Treasury Department and the Pennsylvania Housing Finance Agency. Keystone HELP is endorsed and promoted by all of the state’s regulated utilities



Financing Options

Keystone HELP offers both secured and unsecured loans to all credit-qualified Pennsylvania homeowners regardless of income level. The unsecured loan is a fixed-rate loan of \$1,000 to \$10,000 with terms up to 10 years. Because the Pennsylvania Treasury Department provides the funds for these loans the interest rates and repayment terms are significantly better than what homeowners can typically obtain from traditional financing sources. Keystone HELP employs a “sustainable” financing model that recycles re-paid funds to support new loans. Keystone HELP/AFC is also the statewide energy lender for the Pennsylvania Housing Finance Agency’s secured home renovation program, which makes loans up to \$35,000. These larger loans, secured by home equity, can be for terms of up to 20 years.

Program Process

To be eligible for the Keystone HELP loans, homeowners must have the work done by an approved Keystone HELP contractor/dealer. Over 650 contractor/dealers in the heating, cooling, remodeling, and renewable energy specialties are participating in the program. The loan process is simple and customer friendly. Consumers can apply on-line or by calling the Keystone HELP call center. The contractor submits his estimate showing the qualifying improvements, the customer completes the simple loan paperwork, and the contractor is paid in full immediately upon satisfactory completion of the work. On the secured loan program independent energy audits are conducted.

Eligible Measures

A wide variety of home upgrades can be financed through Keystone HELP, so long as at least 65% of the costs are attributable to eligible ENERGY STAR or other efficiency and renewable-energy improvements, including:

- ENERGY STAR qualified HVAC systems and related work
- ENERGY STAR qualified windows, doors, and roofing
- Insulation
- Solar water heaters, Solar PV systems, and small wind systems
- Other efficiency upgrades identified via a “whole house” energy assessment

Results

In the first two years of the program over 2,400 Pennsylvania homeowners have used Keystone HELP financing to complete over \$14 million in energy-efficiency improvements. With the expansion of the program into larger secured loans this volume is expected to more than double. Borrower approval rates have been running at approximately 70% with exceptional credit performance at lower than 1% delinquency.

SOUTHERN CALIFORNIA GAS COMPANY AND SAN DIEGO GAS & ELECTRIC

Southern California Gas Company and San Diego Gas & Electric promote the Fannie Mae Energy Loan to their customers, and have retained Viewtech Financial Services to market and administer these loans in their territory.



Financing Options

The program offers a simple interest, no-fee RIC financing option, in amounts from \$2,000 - \$25,000. Contractors participating in the program can carry the finance applications, which are completed by customers in their homes. The two utilities do not currently provide any additional buy-down of the interest rate, but separate rebates are available on some measures. After Viewtech approves a loan, the company takes assignment of the RIC from the contractor and then “sells” the RIC to Fannie Mae.

Program Process

Interested homeowners contact Viewtech to request a list of participating contractors. To be included in the program, contractors must undergo a background check by the non-profit League of California Homeowners (LCH). Contractors pay LCH for the initial screening as well as annual “re-certification.” LCH confirms licenses and bonding with State agencies, checks customer references, and verifies financial integrity using business credit agencies and vendor inquiries.²⁰

Participating contractors bring financing paperwork to the homeowner, and then submit it to Viewtech for processing. Once the loan is approved (usually within 24 hours), the homeowner can schedule the work. Contractors must secure a signed Completion Certificate from the homeowner prior to receiving their funds. Viewtech conducts random on-site verifications of projects to ensure jobs were completed.

Contractors are subject to a formal complaint resolution process undertaken by Viewtech and LCH. Contractors must also adhere to a “Code of Conduct” established by LCH and comply with a Blanket Purchase Agreement (“BPA”) signed with Viewtech. This creates a “two-pronged” quality control process and maintains an “arm’s length” relationship between participating contractors and the utilities.

Eligible Measures

Customers are permitted to finance a wide range of home improvement upgrades, based on the rules established by Fannie Mae. Water conservation improvements are also eligible.

Results

Since 1998, 18,392 loans, totaling approximately \$161 million, have been processed through Fannie Mae. 1,320 of these loans, totaling approximately \$11 million, received interest rate buy-downs to 9.9%, funded by Southern California Gas Company to target certain ENERGY STAR measures.

²⁰ For more information on LCH, visit www.homeowners.org.

Conclusions and Recommendations

Although many homeowners can access cash and/or market-rate financing for home improvement projects, program sponsor-provided financing can be an effective tool for encouraging and facilitating action by homeowners to make energy-efficiency home improvements. It can also act as the “glue” that connects key program components, making them work together in achieving the program’s energy savings goals while also building positive relationships between the program, its customers, and participating contractors and lenders. Based on information gathered from program sponsors, implementers, and lenders, financing can be used to strengthen residential energy-efficiency programs in the following ways:



- **Generate homeowner interest.** Special loans with low interest rates can attract homeowners’ attention and entice them to learn more about an energy-efficiency program. National Grid, an electric utility in New England, found that offering energy efficiency loans at a 3% interest rate was very effective at generating interest in their program. Special financing can also attract the interest of local home improvement contractors, encouraging them to get involved in the program or promote it to their customers.
- **Promote comprehensive whole-house improvements.** To ensure that an entire home’s energy use is evaluated, some program sponsors require that customers receive a comprehensive home energy assessment prior to undertaking any work. This identifies all possible efficiency measures that make sense for a given home. To maintain program cost-effectiveness, financing is offered only for the measures that are deemed cost effective in the assessment. To encourage customers to install as many recommended measures as possible, program sponsors can offer loans with longer repayment periods, and use tiered incentives that reward greater levels of investment (e.g., a lower interest rate for installing more of the measures recommended in the energy assessment).
- **Encourage customer follow-through.** Many program sponsors offer home energy assessments, but a common problem has been encouraging customers to follow-through with the recommendations. Financing can address this challenge by providing fast loan approvals and low fees to make the funding process as easy and affordable as possible for the homeowner. NYSERDA has found that allowing participating contractors to execute loan paperwork in the customer’s home at the time of sale is a very effective way to increase closure rates. A retail installment contract or RIC allows contractors to originate loans directly for homeowners rather than referring them to lenders.
- **Enhance contractor quality oversight.** To encourage higher-quality installations and more reliable energy savings, many program sponsors require homeowners to use pre-screened contractors for all installation work as a condition of obtaining special financing. It is then possible to use the leverage of possible customer referrals to encourage local contractors to become active participants in the program, such as by attending training classes on home energy efficiency and distributing education and outreach materials to homeowners. Over time, this can create a valuable contractor network and stimulate improved installation practices. An additional tactic for enforcing the performance of contractors is to have the lender issue loans (and pay contractors) only after a post-installation inspection.
- **Provide assistance for lower-income homeowners.** While program sponsors can work with loan program administrators to offer special financing, this financing is usually limited to homeowners with sufficient income and credit scores. To ensure program services and the benefits of those services are accessible to all customers, program sponsors may wish to consider developing financing options tailored for lower-income homeowners. This could include partnering with local community organizations, working with an FHA-approved lender, or providing loan guarantees. Sponsors could also look to partner with affordable housing stakeholders such as state energy offices and state housing finance agencies to leverage resources and maximize incentives that can offset the incremental cost of efficiency upgrades.

Appendix A-Home Improvement Loan and Mortgage Products

LOAN PRODUCTS				
<p>HOME EQUITY LOANS (SECURED)</p> <p>Home equity loans are the most common mechanism for funding major home improvements. Homeowners tap into the equity they have built up in their homes, and the loan is secured by a deed of trust against the home. These loans are sometimes referred to as second mortgages. The interest rates are typically the lowest available and the interest payments are tax deductible, making them very attractive to homeowners. Homeowners can borrow on the equity of their home in two general ways.</p> <ul style="list-style-type: none"> • Home equity loan, which entails receiving a lump sum from a lender, a set repayment schedule, and a fixed interest rate. • Home equity line of credit (HELOC) allows the homeowner to withdraw funding as needed, often by just writing a check or using a credit card. Only a minimum payment is due every month. HELOCs generally offer variable interest rates and changing monthly payments. <p>Current home equity loans have rates around the prime lending rate, such as “prime + 0” or even “prime -1%”). Home equity loans are originated by banks, credit unions, and mortgage lenders.</p>				
ELIGIBILITY	INTEREST RATE	FEES	LOAN LIMITS	PROCESSING TIME
Must have equity in home (appraised value greater than loan balance)	Approximately 8%	2-5%; often waived or eliminated since loan is small.	Generally limited to 100% of equity.	30-90 days, but can be much faster.
<p>PERSONAL OR HOME IMPROVEMENT LOANS (UNSECURED)</p> <p>Homeowners who are unable or unwilling to leverage their home equity can apply for an unsecured loan at a credit union, bank, or other lending institution. Some are marketed specifically as “home improvement loans.” Customers qualify based on their credit score and perceived ability to repay the loan. Interest rates are fixed and tend to be higher than home equity loans (since they are not secured), but lower than most credit cards. Interest rates are often on a sliding scale linked to the borrower’s credit score. Loan terms of up to 10 years are possible.</p>				
ELIGIBILITY	INTEREST RATE	FEES	LOAN LIMITS	PROCESSING TIME
Must be Creditworthy	Two-year bank personal loans averaging above 11.8%. Credit unions are lower than banks.	Vary but are negligible compared to other financing.	Usually \$1,000 to \$35,000.	1-3 days

FHA HOME IMPROVEMENT LOAN

Any homeowner can take advantage of FHA Title 1 Home Improvement loans to pay for home upgrades, including energy-efficiency improvements. The loans are unsecured and no home equity is required. They are offered only through FHA-approved lenders, but there is a large base of participating organizations. Because of a HUD guarantee, the loans are offered at market rates similar to home equity loans. This makes them more desirable in some cases than a regular home improvement loan. For loans over \$7,500, a lien is applied to the home's deed. This requires slightly longer to process and includes origination fees.

ELIGIBILITY	INTEREST RATE	FEES	LOAN LIMITS	PROCESSING TIME
Must be creditworthy, but eligibility rules are more flexible. No income limits.	Market rate similar to home equity loans.	Typically 1% or \$150 above \$15,000	Up to \$25,000	2-3 hours

CONTRACTOR-ORIGINATED LIEN CONTRACTS

Consumers can often access financing directly from contractors installing measures in their home. Many contractors have arrangements with lending institutions, sometimes through the supplying dealer or manufacturer, to offer home improvement loans called "lien contracts." With a lien contract, a bank, credit union, or financial institution agrees to purchase a remodeling or home improvement loan contract from an approved contractor. Similar to a mortgage, there is a lien on the property and if the homeowner defaults on payments, the home is foreclosed to pay back the lender.

ELIGIBILITY	INTEREST RATE	FEES	LOAN LIMITS	PROCESSING TIME
Creditworthy.	Above market rates.	No closing costs.	Up to \$20,000 or more, depending on credit score.	Approved at point of sale. Contractor is paid directly by lender.

CREDIT CARDS

Consumers can pay for improvements via credit card, and then pay the investment off over time. Typically the most expensive way to finance an improvement, unless the credit card company offers a promotional rate and the homeowner pays the expense off within the time period of the promotion.

CRITERIA	INTEREST RATE	FEES	LOAN LIMITS	PROCESSING TIME
Clean or decent credit history.	Average 13.44% - 14.56% but can be much higher. Sometimes lower rates offered for 6-12 months.	Varies. Usually negligible, but late fees can be high.	Based on credit score and history.	(N/A)

MORTGAGE PRODUCTS

REHABILITATION MORTGAGE

Allows homebuyers to combine the home purchase and estimated renovation costs into a single mortgage at the time of purchase. Loan amount is limited to 90% of the estimated value of the home after the renovations are completed. Offered by many lenders, and usually has an interest rate slightly higher than for a regular mortgage. Can be used for new sale or a refinance.

ELIGIBILITY	INTEREST RATE	FEES	LOAN LIMITS	PROCESSING TIME
Creditworthy buyer of existing home. Can cover all types of home repair and improvements, including energy efficiency.	Market rates typically higher than regular mortgages.	Regular + charges for appraisal and inspections.	90% of the estimated value of the home after the renovations are completed.	30–90 days

FHA STREAMLINE 203(K) REHABILITATION MORTGAGE

Similar to regular rehabilitation mortgage. Allows consumers to combine purchase price and up to \$35k of renovation costs into a single mortgage at one fixed interest rate. The loans can only be originated by FHA-approved lenders, and the homeowner must meet a variety of requirements. Mortgages only require a 3% down payment and interest rates are lower than for regular rehab mortgages. Can be used for new sale or a refinance.

ELIGIBILITY	INTEREST RATE	FEES	LOAN LIMITS	PROCESSING TIME
Creditworthy. No income caps. Can cover all types of home repair and improvements, including energy efficiency.	Market rates.	Up to 1% origination fee + supplemental fees and appraisals as determined by lender.	Maximum loan amount set by FHA; varies by county. Add up to \$35,000 to mortgage for improvements.	60–90 days for processing. All improvements must be completed within 6 months.

ENERGY IMPROVEMENT MORTGAGE (EIM)	<p>EIMs allow the inclusion of additional funds in the mortgage to cover cost-effective energy-efficiency improvements, without requiring additional down payment. Can be issued at time of sale or refinance. EIMs can be attractive to homebuyers who put all of their available cash into a down payment for a fixer-upper that will require some immediate improvements to be habitable. Allows the homeowner to make the needed improvements right away without any up-front costs, and to finance the payments over the term of their mortgage (up to 30 years). If current interest rates are the same or lower than rates on older mortgages, some homeowners can benefit by refinancing their current loan with an EIM. Doing this would enable them take out a larger loan to cover energy-efficiency costs associated with a major remodel/ addition, HVAC replacement, or major building shell improvement.</p>			
CRITERIA	INTEREST RATE	FEES	LOAN LIMITS	PROCESSING TIME
<p>Creditworthy. Must have a HERS rating done. Only cost-effective energy upgrades can be included.</p>	<p>Market rates.</p>	<p>Standard + HERS rating.</p>	<p>Fannie Mae allows up to 115% of home value; generally depends on utility savings; up to \$417,000.</p>	<p>30-180 days (home purchase in 30 days; improvements and released escrow within 90 days).</p>