



BEST PRACTICES FOR ENERGY RETROFIT PROGRAM DESIGN

CASE STUDY: AUSTIN ENERGY RESIDENTIAL POWER SAVER PROGRAM

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This document is one of nine case studies conducted by the Best Practices Committee of the Home Performance Resource Center to examine government-run incentive programs that target residential energy efficiency retrofits and renewable power generation. These nine case studies were used to compile best practices recommendations for the design and implementation of successful home energy retrofit programs, specifically focusing on the areas of financing and incentives, marketing, workforce development and business models. Additional documents in the *Best Practices for Energy Retrofit Program Design* series are available online at www.hprcenter.org.

CASE STUDY: AUSTIN ENERGY RESIDENTIAL POWER SAVER PROGRAM

SUMMARY

The city of Austin, Texas, has implemented various Demand Side Management (DSM) efforts since 1982 to offset the need to develop additional electricity generation capacity; beginning in 1997, administration of the city's DSM initiatives was transferred to Austin Energy (AE), the nation's ninth largest community-owned public utility. Additionally, in compliance with a municipal Climate Protection Plan passed by the Austin City Council in February 2007, AE is working to achieve a 700 MW reduction in total electricity use by 2020 through a variety of energy efficiency and conservation measures, a goal that may be increased to 800 MW in the future. This goal includes 231 MW from existing residential buildings.

This case study focuses on Home Performance with ENERGY STAR rebates and financing options offered as components of the utility's suite of residential efficiency and DSM initiatives, which are collectively branded as the Austin Energy Residential Power Saver Program. The program is managed by Austin Energy, which serves 330,000 residential customers in the City of Austin and adjacent areas in Travis and Williamson counties. Funding for the Power Saver program is calculated into the base rate paid by all customers.

In 2008, Austin Energy's Residential Power Saver Program served a combined total of more than 44,000 customers. The Home Performance with ENERGY STAR program in particular produced a peak demand savings of 25 MW, with average energy savings of 10% and 25-30% cooling bill savings per participant.

FINANCING AND REBATE PROCESS

Property owners who wish to obtain Home Performance with ENERGY STAR financing begin by contacting AE's financing partner, Velocity Credit

PROGRAM PROFILE

Incentive Type:

Rebates and low-interest unsecured loans for whole-house energy retrofits

Time Frame:

DSM programs initiated in 1982; HPwES prog. launched in 2004

Res. Customers in Jurisdiction:

330,000

Property Owners Participating:

39,557 loans and rebates issued for res. retrofit measures from 1982 to 2008; in 2009, 2,600+ Home Perf. projects completed

Investment:

Budget for DSM programs is calculated into the base rate paid by all customers; 2008 HPwES operating budget was \$329,000 to disburse over \$2 mil. in rebates and financing

Energy Savings:

From 1982 to 2008, total energy savings of 116,991 MWh from Home Perf. rebates and loans; average savings for HPwES participants is ~1700 kWh/yr

Carbon Abatement:

2,824 tons CO₂ abated through Home Perf. Rebates and loans from 1982 to 2008; in 2008, 2,577 tons abated through HPwES rebates and 247 tons through HPwES loans

Finance Mechanism:

AE buys down interest rates through a partnership with a local credit union; 0% APR for 3 years, up to 6% for 10 years

Jobs Created:

Data not available

Web Site:

www.austinenergy.com

Union, for pre-approval. Applications may be submitted in person at any of five credit union offices, by fax, or online.

For both the loan and the rebate options, the homeowner requests an energy analysis from one or more contractors selected from a list of program-approved companies. Most participating contractors will provide a 30-minute visual assessment free of charge (without blower door or infrared testing) on which retrofit bids are based. Following the energy assessment, the contractor provides the homeowner with retrofit recommendations and cost estimates, as well as information about the rebates and financing options that are available. (The program allows homeowners to seek bids from more than one qualified contractor.) When the homeowner has selected a bid, the company arranges for AE to review the energy analysis report and bid estimates and sign off on the proposed work.

If the customer opts for financing, AE faxes the bid to Velocity and Velocity sends loan closing documents either to the homeowner or (at the homeowners request) to the contractor. The company then completes the job and contacts AE to schedule an inspection. Once an inspection has made and the work approved, the homeowner signs the inspection report and the company faxes the report to Velocity. Velocity pays the company within 24 hours.

The contracting and inspection process is identical for homeowners who choose to receive rebates in lieu of financing. After the retrofit is complete, AE inspects the work and issues a final inspection report. The homeowner then signs the report and pays the contractor the full cost of the improvements. Rebate checks are issued to homeowners by mail within two to four weeks of inspection and approval of the work.

PROGRAM DEVELOPMENT

A residential energy efficiency program has existed in the city of Austin since 1982, initially under the direction of the city's housing department, and later administered by the Environmental and Conservation Services Department. In 1997-1998, all of Austin's DSM programs (residential, commercial and green building) were consolidated and placed under the administration of Austin Energy. AE now builds program costs into electricity rates to finance more than \$17 million dollars annually in energy efficiency incentives and rebates. In the first quarter of 2004, Austin Energy changed the name of its prior Total Home Efficiency Program and began marketing it as Home Performance with ENERGY STAR. Austin Energy was awarded the national ENERGY STAR Award for Sustained Excellence in 2008, 2009 and 2010.

Program Management

Austin Energy has more than 80 employees managing DSM programs and had a \$6.4 million operating budget for residential efficiency programs in 2008. The Home Performance with ENERGY STAR program has three administrative staff members and six staff inspectors who inspect and approve completed retrofit work. In 2008, program

operating expenses totaled \$329,000, and the program disbursed more than \$2 million in rebates and financing.

Marketing

Austin Energy has a \$443,000 marketing budget for residential energy efficiency programs. Given the high cost of paid media, the program has focused its marketing efforts on very aggressive grassroots outreach activities. Residential Power Saver sends out approximately 750,000 utility bill inserts and other direct mail pieces to their customers every year. The program also conducts face-to-face customer outreach at community events. AE models many of its marketing materials on resources provided by the national Home Performance with ENERGY STAR program. The program also complements private-sector marketing efforts by local retrofit contractors by maintaining an online directory of approved companies at the Austin Energy Web site.

Workforce Development

The residential energy efficiency program had four participating contractors when it started in 1982. By 2008, the program had grown to include 90 contractors.

In 2009, Austin adopted an Energy Conservation and Disclosure (ECAD) ordinance that requires homes over 10 years old to undergo an energy audit before the property is sold, with the audit reports provided to prospective buyers and to Austin Energy. Following passage of this ordinance, Austin Energy worked with the Austin Institute of Real Estate and Austin Community College to develop a training program that has trained more than 200 ECAD energy auditors (who must be RESNET- or BPI-certified) to perform the required evaluations.

Austin Energy is continuing to work on an additional training program through Austin Community College that is focused on commercial energy efficiency. AE also has developed programs with Austin Community College to prepare students for green collar jobs in the energy efficiency industry. Some are a requirement for the federal weatherization money that Austin Energy receives.

Finance and Incentive Models

Austin Energy offers a choice of rebates or low-interest unsecured energy improvement loans (not requiring a lien on the property) to owners of single-family homes, town homes, condominiums or rental properties for a variety of measures covered under the Home Performance with ENERGY STAR program, including:

- Installation of energy-efficiency air conditioners or heat pumps (standards exceed local energy code requirements and national appliance manufacturing standards: 14 SEER/11.5 EER or greater)
- Duct repair and sealing
- Additional attic insulation
- Solar screens, window film, Low-E glass

- Caulking and weather stripping
- Installation of attic radiant barrier reflective material

Customers must choose between rebates and financing (they cannot use both rebates and financing for the same project). Rebates cover up to 20% of improvement costs or \$1,575 (whichever is less).

For energy improvement financing, Austin Energy buys down interest rates through a partnership with Velocity Credit Union, allowing qualified property owners to lock in interest rates ranging from 0% APR for 3 years to 6% for 10 years. The minimum loan amount is \$1,500, and retrofit financing is only available for improvements implemented by program-approved companies according to the procedures outlined above in the Financing and Rebate Process section of this report. Two distinct loan options are available:

Loan Option 1, Energy Improvement/AC Replacement

- Up to \$11,000 for single-family homes or duplexes
- 0% APR for three years, 3.5% APR for five years, 4.5% APR for seven years or 6% APR for 10 years (2% added for applicants with a credit score of 639 or below)
- Closing costs subsidized up to \$400
- Must be used to make all recommended weatherization improvements, improve duct systems, install up to two new high-efficiency AC or heat pump systems, convert window unit(s) to high-efficiency central AC or heat pump system, and perform required duct system testing

Loan Option 2: Residential Optional Measures

- Up to \$8,500 for single-family homes and up to \$11,000 for duplexes and two-HVAC replacement or window-unit-to-central-AC conversion
- 1.9% APR for three years, 3.5% APR for five years, 5% APR for seven years or 6% APR for 10 years (2% added for applicants with a credit score of 639 or below)
- No closing costs up to \$400
- Can be used to install a new high-efficiency central AC or heat pump system and perform required duct system testing, improve duct systems, install attic insulation up to R-38 (duct sealing and testing required), install solar screens or window film, install radiant barrier to underside of roof decking

Other Residential Efficiency and DSM Initiatives

Austin Energy's Power Saver Program encompasses several other components intended to reduce residential energy consumption and peak demand, including:

- Free walk-through energy analysis
- Free weatherization, energy analysis and home energy improvements for qualified low-income, elderly or disabled customers
- Incentives for customers who agree to cycle their air conditioners during periods of peak demand using programmable thermostats

- A refrigerator recycling program designed to remove inefficient refrigerators from service and recycle 98% of materials
- Installation in apartment buildings of water heater timers that cycle off during periods of peak demand
- Subsidized duct diagnostic testing for \$50 per unit in multifamily buildings, conducted by National Balancing Institute-certified contractors, with rebate opportunities to help offset the cost of recommended improvements

Energy Conservation Audit and Disclosure (ECAD) Ordinance

As previously mentioned, Austin adopted an ordinance in June 2009 that requires all sellers of homes over 10 years old that are located within the city of Austin or receive energy from AE to obtain a City of Austin ECAD audit, unless the home meets specific exemption criteria. Failure to obtain an energy audit before the sale is completed results in a class C misdemeanor with fines ranging from \$500 to \$2,000. The seller must provide a copy of the energy audit to the prospective buyer prior to the time of sale, and submit a copy of the energy audit to AE within 30 days of closing the sale. The goal of the ordinance, according to Austin Energy and the Austin Board of Realtors, is to make energy efficiency “an information tool to change the culture of buying and selling homes.”

Contractor Equipment and Training Rebate

Austin Energy assists local contractors with the purchase of specialized testing equipment and offers rebates to employers for HVAC and Home Performance training seminars. These benefits are available only to companies that are currently registered to participate in the Austin Energy Home Performance with ENERGY STAR program, and hold current vendor registration with the City of Austin’s Purchasing Department. Participating companies also must complete a minimum of four Home Performance with ENERGY STAR jobs every six months to qualify for equipment and training subsidies.

METRICS AND FEEDBACK

Austin Energy reports that from 1982 through 2008, Home Performance rebates and energy improvement financing resulted in peak demand savings of 95 MW, and total energy savings of 116,991 MWh. On average, participants in the Home Performance with ENERGY STAR program save approximately 1700 kWh per year. During the same time period, the utility’s combined residential programs achieved peak demand savings of 433 MW, and energy savings of 414,445 MWh. Cumulatively, the program has served 555,519 participants overall (including individuals who have received program benefits more than once).

The cost of demand reduction calculated as total allocated expenses per kW for all AE residential programs has been about \$428 per kW. The cost for Home Performance programs has ranged from \$525 to \$675 per kW, whereas generating the same amount of electricity is estimated to cost about \$700 per kW.

In fall 2009, feedback from auditors and contractors indicated that the majority of ECAD audits were happening *after* the negotiation period of the sale – more as an afterthought as sellers scrambled to avoid the associated fine. However, real estate industry representatives have reported that, after an adjustment period, agents are now effectively guiding buyers and sellers to use the audit as a negotiation tool during the sale.

Because the ECAD ordinance has only been in effect for several months, its impact on Austin’s Home Performance industry remains to be seen. Feedback from Austin Energy, Home Performance contractors and the Austin Board of Realtors indicates that the ordinance caused an initial “flooding” of the city by energy auditors (Austin Energy’s online list of participating auditors increased from four to 115 in just four months). Some noted that because responsibility for the audit falls directly on the seller of the home, there isn’t as much of an incentive for them to invest in the recommended energy efficiency improvements because they will no longer live in the home.

One seasoned auditor interviewed for this study reported that his business had effectively doubled thanks to the ordinance, though he was unsure about how many of those audits had converted to retrofits. The pool of those getting audits may have changed as well – because all sellers are required to get audits, the audit customer base has expanded beyond early adopters. Homeowners who aren’t tuned into energy efficiency are sometimes frustrated about the audit requirement at first, but then after the audit have a better understanding of all the energy they have been losing over the years.

RECOMMENDATIONS

Marketing and Consumer Education: The success of the Residential Power Saver Program can be attributed in part to the fact that the ENERGY STAR brand is already familiar to many American consumers (largely as a result of the ENERGY STAR appliance rating system), and that most Austin-area residents are already customers of Austin Energy. These factors have reinforced the credibility of the program and opened direct lines of communication to potential participants via utility bill inserts and other existing marketing channels.

Involvement of Local Contractors: The success of the Power Saver Program also has been enhanced by close collaboration between Austin Energy and local contractors during the design and implementation of retrofit initiatives. Input from contractors regarding program marketing and cost-effective retrofit measures has helped Austin Energy design programs that operate efficiently and accommodate the needs and concerns of participating homeowners.

SUMMARY OF RECOMMENDATIONS

- Leverage established brands (such as ENERGY STAR) and existing utility-customer relationships to enhance marketing and outreach efforts
- Involve local contractors at all stages of program design and implementation
- Coordinate with local businesses and training programs to expand the local contractor pool as demand for retrofit services grows
- Develop a system for third-party verification and quality assurance

Coordinate Supply and Demand: In association with local businesses and training organizations, programs should develop strategies to increase the local supply of retrofit contracting services as demand for these services grows. Austin Energy's support for contractor training and equipment purchases has dovetailed nicely with the financing and incentives that have stimulated consumer demand.

Quality Assurance: By requiring inspection and approval of all work done under its Home Performance with ENERGY STAR program, Austin Energy is able to ensure the quality and performance of each retrofit.

SOURCES

This report is based in part on interviews and e-mail correspondence with Greg Hall, President & CEO, Apple Energy Group, LLC; Carlos Cordova, Corporate Communications, Austin Energy; Justin Marler, Co-Founder, Energy Action; Earl Hairston, Staff Executive, Austin Board of Realtors; and Matthew Phillips, Residential Coordinator, Austin Energy Residential Energy Efficiency Program.

Interviews and background research were conducted for the Home Performance Resource Center by Jacob Weiss and Elizabeth Redman.

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www.energystar.gov/ia/home_improvement/downloads/FinancingGuidebook.pdf

U.S. Environmental Protection Agency, State and Local Climate and Energy Program. *Encouraging Energy Efficiency Improvement in New and Existing Homes* (Webcast Presentation Slides, May 21, 2009)

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www.epa.gov/slclimat/documents/pdf/residential_transcript_energy.pdf

Program-Related Web Sites:

Austin Energy: www.austinenergy.com

Velocity Credit Union: www.velocitycu.com

Austin Institute of Real Estate: www.austininstitute.com

National ENERGY STAR Program: www.energystar.gov



The Home Performance Resource Center is a national 501(c)(3) nonprofit organization formed to conduct public policy and market research in support of the Home Performance industry. The Resource Center develops research materials for policymakers, energy program managers and industry stakeholders to promote job creation, economic recovery, lower household energy bills and deep reductions in residential carbon emissions through improved home energy efficiency.

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