



BEST PRACTICES FOR ENERGY RETROFIT PROGRAM DESIGN

CASE STUDY: NEW YORK HOME PERFORMANCE WITH ENERGY STAR

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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: NEW YORK HOME PERFORMANCE WITH ENERGY STAR

SUMMARY

The New York Home Performance with ENERGY STAR program provides homeowners with the choice of two low-interest financing options – Energy Smart loans offered through a network of third-party lenders, or ENERGY STAR Financing offered in association with Wisconsin-based Energy Finance Solutions (EFS). Rebates covering 10% of project costs up to \$3,000 for eligible improvements are available for homeowners who choose not to use either financing option. Additionally, the program offers a 50% matching grant up to a total of \$5,000 in grant monies for single-family homes (and up to \$10,000 for two- to four-family homes) for residents with total household income below 80% median income, by county. The program also works to grow the Home Performance industry in New York State by providing various incentives for contractors to get trained, purchase equipment and conduct marketing for their companies.

The program is managed by the New York State Energy Research and Development Authority (NYSERDA), a division of the New York State Department of Public Service, and funded by ratepayer surcharges levied on customers of the six investor-owned utilities in New York State. NYSERDA has contracted with Conservation Services Group (CSG), a Massachusetts-based nonprofit consultancy, to manage design and implementation of program operations.

FINANCING AND REBATE PROCESS

Homeowners who are interested in the program must first contact a qualified contractor, either on their own or using a list of approved contractors

PROGRAM PROFILE

Incentive Type:

Secured or unsecured loans, rebates and contractor incentives

Time Frame:

Launched in April 2001

Homes in Jurisdiction:

7,056,860 (2000 census)

Property Owners Participating:

29,661 HPwES projects completed since 2001; 12,652 projects completed from July 2006 to Dec. 2009

Investment:

Five-year budget (7/1/06-6/30/11) for all NYSERDA res. programs was \$147.3 mil.; combined 13-yr budget (1998-2011) for commerc. and res. programs is \$1.89 bil.; program funded by ratepayer surcharges

Energy Savings:

HPwES retrofits have saved 23.79 GWh/yr, 2.9 MW On-Peak/yr, 1,068,359 MMBtu/yr (incl. freeriding and spillover)

Carbon Abatement:

2.3 million tons annually for all NYSERDA programs

Finance Mechanism:

Financing provided through a nonprofit lender or by buying down interest rates through a network of private lenders

Jobs Created:

4,900 net additional jobs through 12/31/08 from all NYSERDA programs.

Web Site:

www.nyserda.org

provided by NYSERDA on the program's Web site. BPI accreditation is required for all participating contractors. The contractor performs a required comprehensive energy audit that includes a blower door test and combustion safety (thermal imaging is recommended by not required), and models home energy performance using the Targeted Retrofit Energy Analysis Tool (TREAT), a software application developed by Ithaca-based Performance Systems Development, LLC. The contractor may or may not charge a fee for the audit, and audit fees vary by contractor and region. Some contractors will deduct the cost of the audit from total project costs if the homeowner proceeds with a retrofit.

Based on the results of the assessment, the homeowner and contractor develop a retrofit plan, and the contractor provides the homeowner with information about financing and rebate options available under the program. Eligible improvements include measures and accessories determined by Home Performance with ENERGY STAR program guidelines; purchase of ENERGY STAR appliances; or purchase and installation of grid-tied wind turbine systems by a NYSERDA-eligible installer. The homeowner agrees to a work scope, which is reviewed by Conservation Services Group staff, and submits an application for the financing or rebate options as outlined later in this case study. Once the job is complete and a test-out has been performed by the contractor, the homeowner signs a certificate of completion verifying that the work has been performed in accordance with program standards.

For Energy Smart loans, NYSERDA works with participating lenders to buy down interest rates up to 4% (plus subsidies for low income loans), and issues payment directly to the contractor once the certificate of completion has been signed. For ENERGY STAR loans, the loan provider services the loan directly to the contractor. If the homeowner chooses a rebate instead of financing, NYSERDA pays the homeowner directly after the homeowner has paid the contractor.

CSG is responsible for obtaining all of the required forms from contractors for each job performed, including:

- A TREAT software upload of the home's energy performance based on the initial audit
- A contract signed by the homeowner specifically itemizing program-permissible work and subcontractors to be utilized by the contractor
- A customer information form verifying that the homeowner understands the work and the nature of the contract, and indicating which program incentives were selected by the homeowner
- A TREAT software upload of energy performance after the work has been completed
- A signed certificate of completion indicating that the described work was completed

NYSERDA requires third-party verification of 15% of completed projects Honeywell Utility Solutions, a division of Honeywell International Inc. that specializes in demand-side management programs, is under contract to provide quality assurance services for

the program. In cases where follow-up inspections reveal work has not been completed as described in the contract and certificate of completion, Honeywell contacts the contractor and requires that they complete the work. If the contractor refuses to return to the job site, they may be suspended from the NYSEDA list of participating companies.

PROGRAM DEVELOPMENT

In 1996, the New York State Public Service Commission (PSC) called for a Systems Benefit Charge (SBC) to fund energy efficiency programs and clean energy research. The SBC is added to the utility bill of every customer of the six investor-owned utilities in New York. During that time, NYSEDA staff began meeting with officials from the U.S. Environmental Protection Agency (EPA) to discuss implementation of a market-based Home Performance program that would use the ENERGY STAR brand. In 1998, the PSC approved three-year funding for SBC programs. (Additional funding was approved by the PSC in 2001 for five years, and then again in December 2005 for five more years, through June 30, 2011.)

In 1999, Conservation Services Group won a competitive solicitation for designing a Home Performance program for the state, and in 2001, CSG was granted the contract to implement the program. NYSEDA currently outsources program marketing and implementation to CSG and maintains nine internal staff who are responsible for different aspects of the program, including workforce development, residential programs for one- to four-family homes, and quality control and assurance. CSG manages all “groundwork” operations for the Home Performance program.

NYSEDA requires BPI accreditation for all participating contractors, and works with the Building Performance Contractors Association of New York State (BPCA/NYS), a building performance industry association, to help maintain contractor quality in the program.

The program has been evaluated rigorously and modified along the way. For example, the program was originally designed only to provide energy improvement financing, but in 2004, the program began offering rebates as an alternative to financing.

Marketing

One of the most notable components of NYSEDA’s program is the diversity of its approaches to marketing and outreach. Initially, the program focused its marketing efforts on recruiting and educating contractors, and on building consumer demand for Home Performance services. The marketing program included a significant paid media campaign (with advertisements on television, radio and in newspapers), a public relations campaign, and special events. The program also recruited Steve Thomas, a well-known home construction television personality, to be a paid spokesperson for the first few years.

The program also launched an innovative co-op marketing fund to spur long-term growth in the industry. The co-op marketing fund incentive reimburses contractors for

50% of marketing costs on a tiered scale (based on the number of jobs completed through the program each year) up to the first \$100,000 per year; and 25% for marketing costs over \$100,000 up to the total maximum co-op fund of \$150,000. The program requires pre-approval of marketing materials and requires specific mention and visual placement of program-supported materials.

The co-op fund complements other program marketing strategies: While program-run marketing campaigns build public awareness about the available financing and rebate options, co-op marketing fund helps contractors market their services directly to customers. The co-op fund capitalizes on the inherent value of the contractor-customer relationship in recruiting new customers and converting leads into retrofits. The program spent \$23.7 million on co-op marketing efforts for all residential programs through December 2009.

Additionally, NYSERDA has established a statewide network of partners that includes contractors, builders, multifamily partners, retailers, manufacturers and other stakeholders. This process is facilitated at the local level by agency-employed community coordinators. These partnerships work to develop local coalitions, educate the public and implement energy efficiency strategies in every region of the state.

Workforce Development

The New York Energy Smart Market and Community Support Program, which supports several NYSERDA programs including Home Performance with ENERGY STAR, includes a workforce development component to help grow the industry in the state. The program has invested \$9 million in job training and supports various training programs, including a program run by Hudson Valley Community College that had 1,750 participants complete BPI-recognized training in 2009.

The program also provides 75-100% training subsidies for workers who complete training to become BPI Building Analysts or BPI Specialists (Heating, Shell or Cooling). After at least one technician in a company attains BPI certification at the Specialist level, the company becomes eligible to receive BPI accreditation by fulfilling other BPI requirements.

The program also provides subsidies to help participating contractors cover the cost of initial equipment purchases.

Finance and Incentive Models

As stated previously, New York homeowners can choose either of two low-interest energy improvement financing options, or apply for a direct rebate. Rebates and financing may not be combined for a single retrofit project.

ENERGY STAR Financing provides up to \$15,000 or \$20,000 (depending on the homeowner's credit score) of unsecured funding for terms of three, five, seven or 10 years. This option only is available for one- and two-family owner-occupied homes. The financing is offered through Energy Finance Solutions, a service provided by the

Wisconsin Energy Conservation Corporation, a nonprofit organization that designs and implements energy efficiency and renewable energy programs in partnership with government agencies, utilities and private businesses.

The New York Energy Smart Loan Fund provides up to \$20,000 of secured or unsecured financing (or \$30,000 for customers of Con Edison) for residents of one- to four-family buildings via a network of participating financial institutions. The program buys down interest rates by up to 4% (or 6.5% for Con Edison customers) for a term of 10 years.

Homeowners who choose not to receive financing can apply for a direct rebate covering 10% of project costs for eligible energy efficiency improvements, up to a cap of \$3,000. This option was introduced in 2004, in part because contractors were not reporting many small jobs when customers did not need to use program financing. Program staffers say that contractor reporting on small jobs has increased dramatically since the rebate option was added.

Alternate incentives are available for applicants who meet certain low-income thresholds. Low-income subsidies for single-family homes can cover 50% of eligible project costs up to \$5,000, or up to \$10,000 for two- to four-unit residential buildings.

In addition to providing incentives and financing to consumers, the New York Home Performance with ENERGY STAR program provides incentives for contractors to enter the home energy retrofit industry and apply the whole-house Home Performance philosophy. Contractor benefits include:

- 75-100% reimbursement for qualified training, upon completion of the course.
- Discounted prices on diagnostic Equipment for new participating contractors
- 25% subsidy for contractor marketing efforts
- Business leads from NYSERDA
- Permission to suggest program-sponsored low-interest loans

METRICS AND FEEDBACK

As of Dec. 31, 2009, more than 29,661 homes in New York had been improved to use up to 40% less energy. As of March 2007, the average annual saving per household was \$742, and by the end of 2009, annual customer savings from all SBC-funded programs was \$680 million. The Home Performance with ENERGY STAR program has resulted in overall energy savings of 23.79 GWh of electricity, including estimated freeriding and spillover effects. This includes the low-income Assisted Home Performance Program (6.936 GWh per year, 0.8 MW On Peak per year, and 362,209 MMBtu per year saved).

As of Dec. 31, 2009, there were 958 BPI-certified technicians in the program and 246 participating BPI-accredited companies. By Dec. 31, 2008, 4,900 net additional jobs were created from all SBC-funded programs.

Program staff have reported that when the 10% cash rebate was introduced in 2004, most homeowners with larger projects used the financing option rather than the rebate. As of late 2009, most homeowners were opting for the cash rebate instead. These

homeowners could be taking out low-interest loans from other lending institutions instead of using program financing, because program financing does not allow rebates to be combined with loans. In June 2009, 360 homeowners chose the Homeowner Financing Incentive rebate, while 30 homeowners opted for the Energy Smart Loan Fund and 41 chose ENERGY STAR Financing.

RECOMMENDATIONS

Incentivizing Private Industry Growth: Rather than serving as an intermediary between the homeowner and the contractor, programs should value the contractor-customer relationship in recruiting new leads and converting them to retrofits. The New York Home Performance with ENERGY STAR program allows homeowners to hire any BPI-certified contractor for retrofit work, and provides companies with incentives and subsidies to help facilitate private-sector growth.

Significant and Diverse Marketing: Programs should include strong paid advertising components in their marketing strategies, and consider ways to gain visibility and credibility in the marketplace as the New York program did by engaging television personality Steve Thomas as spokesperson. The co-op marketing component has been successful at leveraging contractor marketing investment and growing the industry.

Encouraging Retrofits and Supporting Integrated

Contractors: While the New York program requires energy audits for all applicants, retrofits are strongly emphasized to encourage action rather than just customer education. This approach also supports an integrated contractor model in which a single company provides the energy audit and project implementation.

Contractor Inclusion and Buy-in: NYSERDA has demonstrated how close communication between contractors and program managers can improve outcomes and grow the industry to meet local demand.

Data Collection and Evaluation: Programs should develop systems to track relevant data including participation rates, energy savings (to-date and projected) and jobs created or retained, and use the data to inform future adjustments and improvements in program design. NYSERDA produces quarterly evaluations and other detailed reports encompassing data from all of its SBC-funded programs.

SUMMARY OF RECOMMENDATIONS

- Support industry growth and allow companies to form relationships with customers
- Use paid advertising if sufficient marketing funds are available, and look to co-op marketing strategies to extend the reach of program investments
- Encourage retrofits, not just audits, and support an integrated contractor model
- Work closely from the start with private-sector participants and solicit their feedback regularly
- Collect data, analyze and adjust

SOURCES

This report is based in part on interviews and e-mail correspondence with Damien Hodkinson, Co-Founder, True Energy Solutions; James Quirk, Senior Project Manager, NYSERDA Residential 1-4 Family Programs; and Pasquale Strocchia, President, Integral Building and Design, Inc.

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

Publications:

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Michigan SAVES. *Energy Efficiency Program Summary: Home Performance with ENERGY STAR* www.michigansaves.org/resources/CaseStudies/NYSERDA%20Program%20Summary%20v3.pdf

New York State Energy Research and Development Authority. *New York's System Benefits Charge Programs Evaluation and Status Report, Year Ending December 31, 2009: Report to the Public Service Commission, Final Report* (March 2010) www.nyserda.org/sbc_annual_programs_status_2009.pdf

New York State Public Service Commission. *05-M-0090: System Benefits Charge* (last accessed March 7, 2010) www.dps.state.ny.us/sbc.htm

Program-Related Web Sites:

NYSERDA: www.nyserda.org

New York Home Performance with ENERGY STAR: www.getenergysmart.org/SingleFamilyHomes/ExistingBuilding/HomeOwner.aspx

Conservation Services Group: www.csgrp.com

Honeywell Utility Solutions: <https://buildingsolutions.honeywell.com/Cultures/en-US/Markets/Utilities>

Energy Smart Loan Program: www.nyserda.org/resloanfund.asp

Wisconsin Energy Conservation Corporation: www.weccusa.org

Building Performance Contractors Association of New York: www.home-performance.org

Performance Systems Development, LLC (TREAT): www.psdconsulting.com/software/treat



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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