



**BEST PRACTICES FOR ENERGY RETROFIT PROGRAM DESIGN**

# **FINANCING AND INCENTIVES RECOMMENDATIONS**

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This document is part of a series of reports developed by the Best Practices Committee of the Home Performance Resource Center to aid program managers, program designers and policymakers in the design and implementation of successful home energy retrofit programs. The series is based on nine case studies of state and local programs in California, Colorado, New Jersey, New York, Oregon and Texas, with analysis by four separate working groups focused on 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](http://www.hprcenter.org).

# FINANCING AND INCENTIVES RECOMMENDATIONS

## INTRODUCTION

Financing and incentives components make up the core of residential energy efficiency programs. Because of their potential for significant results, it is vital that financing and incentives programs be designed in ways that lead to the most energy savings and will help build a thriving, sustainable industry that can scale quickly.

Well-designed programs use financing and incentives as tools to leverage homeowner funds in ways that will maximize program-wide energy savings and energy savings per house. Program funds can subsidize societal benefits such as energy savings, while homeowners pay for the personal benefits of better home performance.

Successful programs also appeal to various kinds of customers. After looking at nine case studies, the Financing and Incentives Working Group did not find data to support focusing program funds on financing over incentives, or vice versa. Because some homeowners are more responsive to financing options and others to direct incentives, programs are most effective when they offer access to both. Ideally, incentives and financing should work together to increase consumer demand for home energy retrofits. Most importantly, financing and incentive programs should reward performance (in terms of measurable energy savings) instead of prescribing specific products or improvement measures. Thus, homeowners who pursue deeper retrofits will receive more substantial benefits.

The Financing and Incentives Working Group crafted recommendations to address several key questions:

- How should programs structure audit incentives?
- How can retrofit incentives best increase consumer demand and maximize energy savings?
- What kinds of financing structures are effective, and how should they be set up?
- What considerations should be given to programs in small vs. large areas?

## WHOLE-HOME ENERGY AUDIT STRUCTURE AND INCENTIVES

Whole-home energy audits are effective tools to diagnose home energy problems and provide homeowners with informed options for upgrades and retrofits. Audits alone do not save energy, so audit structures should be designed to maximize the number of energy retrofits that are performed as a result of energy audits. Programs can structure audits effectively in the following ways:

**No program-initiated free audits:** Homeowners who receive subsidized audits but fail to implement the recommended improvements divert program and contractor resources from successful home retrofits and interfere with the overall effectiveness of the program. Requiring program participants to pay for energy audits is an effective way to

screen out those “window shoppers” who are less likely follow through. Also, homeowners who pay an audit fee up front are more motivated to make good on that initial investment. New York Home Performance with ENERGY STAR, for example, has successfully incentivized home retrofits without providing free or subsidized audits. The program offers homeowners financing or rebates for the retrofit itself, and audit prices are set by each company.

The program subsidy should be low enough to increase demand and high enough to foster self-selection of the most motivated customers. For low-income homeowners, programs should partner with Weatherization Assistance Programs and other funding sources that provide low-income audit subsidies.

**Programs may consider partially subsidizing audit costs without setting audit prices:**

The market rate for a whole-home energy audit is between \$300 and \$600 depending on the region and the activities performed. In some markets that lack sufficient demand, the cost may be high enough to discourage many homeowners from considering an energy audit. Furthermore, a large upfront investment for audits signals to homeowners that subsequent retrofit measures will be similarly expensive. In reality, energy retrofits can be very affordable (especially after financing and incentives), so setting a lower price for audits in underdeveloped markets can bring consumer expectations more in line with actual retrofit costs. Many of the programs and companies interviewed for this report have found audit subsidies to be most effective when they reduce the upfront cost to homeowners to about \$100-\$200, subject to local cost-of-living and services provided. Job-reporting incentives may also be used to encourage auditors and contractors to report audits completed and gather data for program use.

Companies may choose to charge even less for their own customers, depending on local market forces and on the availability of retrofit financing and incentive programs. Homeowners should always be informed of the level at which audits are being subsidized, so they know the true value of the service they are receiving.

**Whole-home energy audits should be BPI-compliant:** The Building Performance Institute standard provides proven methodology along with rigorous training and continuing education requirements for auditors to ensure that customers receive accurate, high-quality audits.

**Make audit fees refundable:** Upon completion of a mid- to large-scale energy retrofit, the audit price should be refunded to the homeowner or deducted from the cost of the job, so the upfront cost of the audit ultimately becomes part of the homeowner’s investment in energy retrofit measures. For example, New Jersey Home Performance with ENERGY STAR refunds the initial \$125 audit fee for retrofit projects that exceed \$2,500. This structure simultaneously encourages adoption of energy audits among motivated homeowners and boosts conversion rates from the audit phase to project completion.

**Audit incentives should be deployed in combination with retrofit incentives and financing:** Incentivizing audits alone will lead to a lower audit-to-retrofit conversion

rate, so audit incentives should be provided along with retrofit incentives and financing. In Boulder, for example, audit incentives alone (provided through the Residential Energy Action Program) did not result in a significant percentage of audits converting into retrofits. Boulder has since added a PACE financing option, increased their homeowner follow up program and is launching new programs that focus directly on retrofits.

## RETROFIT INCENTIVES

Retrofit incentives are a key component of residential energy efficiency programs, and they are an effective use of taxpayer and ratepayer dollars because they leverage substantial homeowner investment to achieve significant energy savings. Customer incentives produce short-term spikes in demand for home retrofits that will help scale the industry to meet ambitious energy efficiency goals. Incentive programs should be structured to maximize program-wide energy savings as well as per-house energy savings.

**Emphasize performance over products:** Incentive programs should be designed to achieve maximum energy savings in cost-effective ways, not to promote specific products or services. Because every home is unique, programs should give auditors, contractors and customers the ability to design retrofits that will achieve the most energy savings possible given the homeowner's individual energy needs and budget.

**Incentives should increase as energy savings increase:** New Jersey Home Performance with ENERGY STAR is a good example of this type of graduated incentive structure. For projects with an estimated energy savings of 5-25%, the program provides incentives to cover 10% of project costs up to a cap of \$2,000. If the estimated energy savings exceed 25%, the program covers 50% of project costs up to \$10,000. Programs should configure their incentive structures to align with the proposed federal REEP and HOME STAR Gold programs, both of which tie higher incentives for deeper energy savings.

**Make direct incentive payments to contractors (instead of to customers):** Deducting incentive amounts from overall project costs charged to the consumer can enable the contractor to put aside customer credit concerns and reduce the need for customers to make large deposits before work begins. Upon verification of work, the contractor receives the incentive funds directly from the program.

**Process incentive payments quickly:** Delayed processing of incentive payouts can be a significant barrier for new contractors entering the industry. Payment processing times should be as short as possible – ideally not to exceed two weeks.

**Grow the industry by incentivizing a BPI-certified contractor base:** In addition to homeowner incentives, New York Home Performance with ENERGY STAR provides incentives and rebates to contractors to help small-scale contractors grow. In New Jersey and New York, all retrofit work must be completed by contractors who are BPI-certified program participants. The program provides a 5% rebate per job with a \$500 cap (which can cover audit costs); a 2% rebate to subcontractors; and funds to subsidize marketing, worker training and equipment costs. In New Jersey and New York, all

retrofit work must be completed by contractors who are BPI-certified program participants. These incentives give many contractors the ability to invest in workforce development, while other contractors are able to pass on those savings to customers. Either way, contractors and customers benefit.

**Make consumer incentives compelling and easy to obtain:** Retrofit incentives should be packaged in a way that is easy for customers to understand, with incentive amounts set high enough to motivate incremental homeowner investment. New Jersey Home Performance with ENERGY STAR provides incentives up to 50% of overall project costs for deep retrofits, which can drive substantial incremental decisions. Programs should use customer and contractor surveys to get feedback on a program's ease of use.

**Prescriptive lists of retrofit measures can be used as a stepping-stone to growing the home retrofit market and industry:** Prescriptive lists can be an attractive selling point to customers and contractors who are not familiar with the whole-house, performance-based approach. Some programs, including the Boulder, Sonoma County and Palm Desert programs, provide incentives based on lists of individual measures that qualify for rebates. Prescriptive incentives should be less attractive than performance incentives; while the measures on these lists may be generally effective, their implementation is not tailored to individual homes. Moreover, list-driven incentives do not allow for a science-based prioritization of retrofit measures, so customers with budget limitations are less likely to make optimal decisions about the most cost-effective solutions.

Programs using incentives for prescribed products or services should strive to use the incentives to build customer demand for performance-based work, and train program contractors in the whole-house approach. For example, in Pennsylvania, contractors who complete work covered by prescribed incentives must complete a one-day overview training in Home Performance, which may lead to increased whole-house work in the future.

**Incentivize both labor and materials for cost-effective energy-saving measures:** Air sealing and insulation augmentation are among the most cost-effective ways to reduce household energy consumption. However, the existing Federal Residential Energy Efficiency Tax Credit is limited to the materials costs of home energy retrofits. Because labor accounts for much of the cost of Home Performance retrofits, a strong incentive program will provide incentives for both materials and installation costs.

**Prioritize safety:** BPI whole-home energy audits frequently identify health, safety and durability concerns in addition to opportunities for energy conservation. While home energy incentives typically focus on energy savings and cost-effectiveness, programs also should create special allowances for homeowners to address health, safety and durability concerns. This is most critical in cases where homes fail combustion safety tests and immediate repairs are needed.

## FINANCING

Strong consumer financing programs have been shown to help homeowners overcome key barriers to energy retrofits. Retrofit programs have the ability to offer financing options that can reduce or eliminate upfront retrofit costs and loan interest rates, and address the concerns of homeowners who are reluctant to invest in energy improvements for a home they expect to sell before the improvements pay back. Programs should create attractive financing plans and give customers maximum flexibility to choose the financing option that best fits their needs.

**Buy down interest rates by providing low-interest or no-interest loans:** Some programs are able to provide no-interest loans for qualified energy retrofits, including unsecured personal loans (as with New Jersey Home Performance with ENERGY STAR) or Property Assessed Clean Energy (PACE) financing (as with Long Island Green Homes). Others, including New York Home Performance with ENERGY STAR (unsecured loans) and, to a limited extent, Boulder's ClimateSmart PACE financing program, make below-market interest rates available to energy retrofit customers. These financing options have been shown to increase customer demand significantly.

**Offer customers various financing options, including unsecured, secured and innovative financing programs like PACE:** Customers' needs vary, so programs should provide different pathways for homeowners to finance home retrofit projects. For some, mortgage-backed financing poses problems, so unsecured financing options are critical. For others, secured financing like PACE or Energy Efficient Mortgages may be more attractive if it provides longer terms and better rates. PACE financing specifically appeals to customers who are concerned about loan transferability.

**Code home retrofit loans distinctively:** Energy efficiency loans (secured or unsecured) should be coded as such to create an actuarial record that proves they have lower rates of default, so better terms can be negotiated in the future.

**Enhance financing terms as retrofits go deeper:** New Jersey Home Performance with ENERGY STAR provides below-market 5.99% financing for retrofits that have projected energy savings of 5-25%, and interest-free financing for retrofits that have projected energy savings of 25% or more.

**Include an option for secured financing:** PACE financing programs in Babylon, Palm Desert, Boulder, Berkeley and Sonoma County have been very successful at increasing interest in the programs. PACE programs eliminate an important barrier to energy retrofits, the high upfront cost. Additionally, the repayment obligation generally stays with the property, not with the owner, so the benefit and the remaining cost of the improvements automatically transfers to subsequent owners if the property is sold before the improvement loan is paid off.

**Incorporate best practices in the design of municipal financing programs:** Robust underwriting criteria can both protect the interest of homeowners as well as ensure that programs can access capital at affordable rates. A [Policy Framework for PACE Financing](#) released by the White House on Oct. 18, 2009, serves as a great resource for

local governments that are designing programs. In addition to setting underwriting criteria, some municipalities have chosen to take steps to achieve greater economies of scale. Larger programs are generally able to achieve lower interest rates, so municipalities may consider opting into larger programs like the CaliforniaFIRST program.

**Strive for secured financing assessment amounts that are less than projected energy cost savings:** Long Island Green Homes works with program participants to structure their payments to be 80% or less of their projected energy cost savings, so homeowners will start saving money from day one. This appealing financial proposition has prompted 80-90% of interested customers in Babylon to take action and purchase a home retrofit. Lower assessment amounts may not be as achievable when customers opt for deeper retrofits and renewable generation (program priorities).

**Secured financing programs should prioritize energy efficiency measures first before funding renewable energy options:** Programs that promote a cost-effective "efficiency first" loading order will use available program funds more effectively to reduce overall demand on local utilities. The resulting reductions in fossil fuel consumption and peak demand can facilitate investment in renewable energy generation and go farther toward meeting greenhouse gas reduction targets. The Sonoma Energy Independence Program is moving to require that homeowners conduct a full diagnostic energy audit and achieve energy savings of at least 10% in order to qualify for PACE financing. Also, in the most recent phase of Palm Desert's Energy Independence Program, 50% of the financing has been set aside for efficiency measures.

**Federal Energy Efficient Mortgages should be easier to access:** Homeowners should have access to the Energy Efficient Mortgage market even when they are not purchasing or refinancing a home.

**Make financing options easy to understand and obtain:** The New Jersey Home Performance with ENERGY STAR loan approval process is designed to be easy and fast, providing loan approval within 30 minutes while the contractor is still in the house. Use customer and contractor surveys to get feedback on program ease.

## Considerations for Small Jurisdictions

**Cooperate with larger programs:** Small jurisdictions should consider partnering with other jurisdictions to standardize program design and drive down implementation overhead costs. Standardization makes it easier for participating contractors to comply with program rules over multiple jurisdictions. Local jurisdictions also should strive to coordinate their programs with larger state and national retrofit programs.

**Nurture the industry:** In small jurisdictions where the Home Performance industry is just getting off the ground, program design should emphasize contractor participation and workforce development. Small jurisdictions can benefit from simplified processes such as prescriptive lists and mandatory cooperation between industry participants (such as the round-robin audit assignment system and pricing mandates used by Long

Island Green Homes). Over time, all programs should move toward a free-market approach with whole-home energy audits as the baseline diagnostic and primary driver of retrofit decisions.

### **Considerations for Larger Jurisdictions**

**Embrace free-market principles:** Programs in more mature markets should spur demand in a way that enables a thriving private industry and encourages free-market competition. Program design should allow contractors and auditors to be creative in building operational efficiencies and developing product offerings and customer service. This is the best way to foster fair pricing and profitability while upholding quality of service.

**Prioritize quality assurance:** Programs should require all contractors performing retrofit work to be BPI-certified and fully licensed in their appropriate trades.

### **CONCLUSION**

Programs should be designed to leverage homeowner investment in concert with affordable financing and compelling incentives to maximize program-wide energy savings and energy savings per house. While programs based on prescriptive lists of approved measures can make sense for smaller and less mature markets, all programs should move toward a model that rewards performance, not products, and provides more substantial benefits for homeowners who pursue deeper retrofits. Audit incentives should be subsidized but not free, and financing and incentive structures should prioritize cost-effective efficiency measures before providing incentives for renewable power generation.



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 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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