



BEST PRACTICES FOR ENERGY RETROFIT PROGRAM DESIGN

BUSINESS MODELS RECOMMENDATIONS

MARCH 2010

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.

BEST PRACTICES FOR ENERGY RETROFIT PROGRAM DESIGN

BUSINESS MODELS RECOMMENDATIONS

INTRODUCTION

The success of home energy retrofit programs relies on a thriving home retrofit industry that can deliver high-quality solutions and energy savings in efficient ways. Programs that can best facilitate industry growth will give the industry maximum flexibility to innovate and develop efficient business models; provide consistency and flexibility so businesses (which often work within, outside of, and across programs) are not constantly forced to adapt their business practices to disparate program environments; and include provisions to help companies launch and reduce unneeded barriers to entry.

In developing business models recommendations, the Business Models Working Group set out to answer to the following questions:

- How should programs be structured to help grow and sustain an effective Home Performance industry capable of retrofitting millions of homes?
- How can programs help create a market that encourages the private investment necessary to expand industry capacity?
- What can programs do to allow for innovation in technology and business models?
- How can programs help create and maintain industry standards?
- How can programs facilitate collaboration between auditors and contractors?
- Should auditors and contractors work for the same company?

GROWING THE INDUSTRY

Foster predictability for the industry: To help companies prepare for program participation and adapt to changes in the regulatory environment, programs should clearly communicate goals and requirements, develop long-term structures to minimize shifts in program design, and announce scheduled changes well in advance. When changes are necessary, programs should institute a change notification period during which industry participants have an opportunity to comment on the proposed changes. Program notices and updates can be distributed easily and affordably via e-mail to participating contractors and auditors.

Coordinate with other programs to synchronize requirements: Many companies work inside, outside and across programs; consistency among programs helps these companies function more efficiently. In the Northeast, the New York and New Jersey Home Performance with ENERGY STAR programs and Long Island Green Homes all use BPI as their standard for certification and accreditation.

Keep it simple: Unnecessarily complicated rules and procedures can inhibit efficient business operations.

Remove barriers to entry: Companies entering a program should not be burdened with unnecessary paperwork, structural, or manpower requirements. Programs should enable electronic processing of forms, and make the program easy for contractors entering the market, while maintaining standards:

Incentivize companies to develop and grow their businesses: Because contractors may not have the capital to expand rapidly enough to meet program goals, programs should provide subsidies as needed to help contractors get off the ground and start building their businesses. For example, the New York Home Performance with ENERGY STAR program subsidizes contractor-run marketing, training and equipment purchases for Home Performance uses. Contractors receiving these kinds of incentives and subsidies should be required to show that they are completing a minimum number of jobs, so program dollars are not wasted supporting companies that are not succeeding in the marketplace. The New Jersey Home Performance with ENERGY STAR program requires that, after their first year of participation, companies must complete a minimum of 10 jobs per year to qualify for business incentives and subsidies. Also, any incentives for contractors should be structured to complement strong consumer incentives and financing programs that build market demand.

Cover a portion of project costs up front for trusted contractors with strong track records: Small companies often need the most assistance to scale their businesses to meet program goals. On a typical home improvement job, customers provide a down payment, pay for a portion of the project as work begins, and cover ongoing materials costs. But in programs that pay rebate amounts directly to participating contractors after project completion, companies without adequate cash reserves will have a hard time entering the market and scaling their businesses. In Palm Desert, the program allows homeowners to request a “progress payment” of up to 50% of the loan amount, provided that at least 75% of the project materials have already been delivered. Programs can relieve some of this financial burden by paying qualified contractors a percentage of project costs in advance.

Allow and incentivize companies to bring in their own leads, in addition to leads generated by the program: Some programs devote disproportionate resources to direct lead generation. While programs should work to generate leads for contractors, programs may choose to assist high-performing contractors by providing funds for companies’ own lead generation campaigns, as some programs have done through co-op marketing efforts. This allows programs to leverage contractor resources and expand program reach, and gives contractors the ability to develop their own brand identities and business models. As stated above, contractors should be required to meet certain thresholds for jobs completed in order to be eligible for subsidies.

Program design should recognize the variety of tasks performed by each weatherization worker in the course of a typical work day: Some programs have applied work rules to weatherization that were originally designed for large commercial projects. Such rules ignore the multifaceted nature of weatherization work, which typically involves one or two people working in cramped crawl spaces or attics, and

application of insulation materials wherever needed, including pipes, ducts and structural elements of the home. For home weatherization, it isn't practical to employ separately trained professionals for each surface (such as sheet metal or pipes) that is touched by the insulation or sealing materials, and it is difficult to accurately document the amount of time spent interacting with each building material. Thus, labor guidelines for home energy retrofits should allow greater flexibility than is typical of larger commercial weatherization projects.

Where state or local prevailing wage requirements exist, create prevailing wage categories that are comprehensive for each worker: There are currently instances, such as ARRA-funded programs in the Washington State, where work performed by a single worker during a day on the job must be divided into various state prevailing wage categories. This can create significant confusion, especially when vastly different wage rates apply to different phases of a single task.

Home Performance companies know the importance of paying workers fairly. However, subdividing work performed by a single worker into separate categories creates problems on the job site, where workers must understand the fine distinction between closely related job categories, and can end up completing tasks that carry wages three times higher than those applicable to similar tasks requiring identical effort and skill. Employers must carefully avoid abuse or errors, and workers must deal with paychecks that vary unpredictably from job to job and week to week. The burden of paperwork and fear of liability for inevitable errors prevents industry growth, and inefficient processes threaten to increase costs to homeowners.

Federal prevailing wage guidelines have been crafted to ensure that a single wage applies to all sealing and insulation work done by a typical weatherization worker. In locations where state and local prevailing wage laws apply to weatherization work, regulatory agencies should ensure that the applicable wage categories can be practically applied to a small crew weatherizing a home. Ideally, a single wage category should apply for all home weatherization work.

The best Home Performance companies around the country have highly motivated workers and engage in the kind of responsible contracting practices that lead to well-trained, well-compensated and healthy workforces. Owners and employees of these companies are proud of the culture and proactive working relationships they have created within their respective organizations. Programs should leave internal working relationships up to the discretion of each company and its employees.

Programs should be designed to:

- Be impartial and pressure-free regarding workers' affiliation with organized labor
- Steer away from restrictions and requirements on established or new companies that would favor certain contractors depending on their affiliations with organized labor
- Ensure a quality workforce based on applicable certifications and accreditations achieved rather than on the specific training program(s) a worker has attended

Some programs are considering hiring restrictions that would require workers to have specific organized labor affiliations, or incentives that establish a preference for work performed by workers with such affiliations. Other programs have considered granting certification authority to organized labor organizations that also represent and train workers; this results in a clear conflict of interest that would undermine the integrity of the third-party certification system that the Home Performance industry has already established.

SETTING INDUSTRY STANDARDS

Develop clear pathways to contractor and auditor certification: Confusion about program requirements can lead to decreased contractor participation. Programs should clearly outline the steps companies are required to take to get certified, and allow all contractors and auditors who meet those requirements to join the program.

Require appropriate certification and accreditation, and implement strict quality control measures: Programs should require auditors and key contractor personnel to be certified according to the principals put forth by the Building Performance Institute (BPI). Programs should adopt national certification and accreditation guidelines that follow standards as dictated by organizations like BPI. Currently there is a lack of accredited contractors in many parts of the country, but the long-term goal should be to require accreditation for all participating contractors. Furthermore, rigorous quality control mechanisms should be put in place to ensure that work is performed to high standards.

Require test-outs for all jobs, with deeper quality assurance inspections on a fraction of jobs completed under the program: All projects should include a test-out conducted by either the contractor or a third party-auditor. If routine test-outs are performed by the contractors who complete the work (as is required by many industry-accepted certifications), programs should implement third-party oversight that includes random field-testing on a percentage of all completed retrofits. Many programs provide a job completion and reporting incentive (e.g. 5% of the job cost up to \$500) to the contractor or auditor who performs the test-out.

Programs might consider conducting random field tests at a level that can be adjusted based on the level of the incentive (i.e., a minimum 5% test rate for average incentives up to \$500, 10% for average incentives up to \$2000, etc.). Inspectors should inform contractors about when inspections will occur, so contractors can keep customers informed and can address any post-inspection issues promptly.

Train city and county building inspectors in Home Performance: Some building inspectors are not fully aware of new building and remodeling techniques that incorporate building science and whole-house thinking. Building inspectors should receive comprehensive training in Home Performance so they understand new techniques in building science and can apply that knowledge when inspecting jobs.

THE AUDITOR-CONTRACTOR RELATIONSHIP

Of the programs studied for this report, one program uses auditors who are independent from retrofit contractors; two require all audits to be performed by the contractor who completes the work; and three allow either model. The relationship between contractors and auditors has been the subject of much discussion and debate. While some prefer to require independent third-party auditors to ensure the integrity of retrofit recommendations, others believe that audits should be performed by contractors in order to ensure maximum process efficiency and higher audit-to-retrofit conversion rates. This is an aspect of program design that ultimately depends on local program goals, so our consideration of the auditor-contractor relationship includes both specific recommendations and general considerations that programs should take into account regarding the auditing process.

Programs should allow contractors to perform audits and market audit services as a package with energy retrofit work: Many homeowners prefer to hire one company to conduct the audit and also complete the retrofit, which can simplify the overall retrofit experience. In addition, some contractors refund all or part of audit costs to customers who complete a retrofit, potentially reducing the overall cost to the homeowner. Several programs that require audits, including New York and New Jersey Home Performance with ENERGY STAR, Long Island Green Homes and Clean Energy Works Portland, have had strong audit-to-retrofit conversion rates using companies that provide the audit and go on to complete the retrofit work. The Home Performance Resource Center believes that an “all-in-one” approach to home retrofits can increase the audit-to-retrofit conversion rate.

Programs should consider making the services of independent auditors available to customers: Some homeowners have a lower level of trust in an audit provided by the same contractor who will implement the recommended retrofit measures. Such customers should be allowed to contract with an independent auditor. If an independent auditor performs the audit, programs should work to ensure effective communication between the auditor and the contractor (see below).

Recommendations for Programs Utilizing Integrated Contractors

Specific considerations for programs with an *all-in-one* model include:

- Ensuring customer trust in the honesty of an audit
- Third-party verification of work done
- Enabling a wide variety of contractors, even those who do not have audit experience, to become part of the industry (so they can join the industry without needing to provide audit services)

Implement mechanisms to help ensure customer trust in audits: Programs that promote or allow the industry-accepted combined auditor-contractor model should take steps to ensure that consumer trust in audits is maintained at high levels. For example, many programs employ energy advisors that work with customers and

advocate for their needs. These advisors can provide on-site contractor oversight and may be present at the time of the audit or when the work is being done, although this approach is costly. Other programs require contractors to perform fully comprehensive analysis and reporting on every audit, with a percentage of all contractor audits randomly field-checked by third-party auditors. This approach allows for fewer quality assurance auditors while maintaining the high standards that the Home Performance industry supports.

Either way, public outreach is essential, as customers have the highest level of confidence if they have been informed about the quality-control mechanisms that are in place and about certification and accreditation requirements for program-approved contractors.

Third-party verification: Third-party verification of work done is particularly important in programs where auditing and retrofit implementation are provided by a single contractor. Austin's Home Performance with ENERGY STAR program conducts inspections on every job, while others, like New Jersey Home Performance with ENERGY STAR, conduct third-party inspections on a percentage of each company's jobs.

Design pathways for a wide variety of contractors to join the industry: Guidelines that require contractors to have auditors on staff can dissuade some companies from joining the industry. For example, a company with an HVAC background but no auditor on staff would be excluded from transitioning into comprehensive Home Performance retrofit work. Programs using the all-in-one model should consider allowing such companies to partner with or subcontract with program-approved independent auditors. Additionally, programs should not limit the ability of contractors to provide comprehensive Home Performance solutions, and therefore should always allow the lead contractor on a project to create partnerships or subcontract work as necessary to meet these goals.

Recommendations for Programs Utilizing Independent Auditors

Specific considerations for programs with an *independent auditor* model include:

- Ensuring effective methods of communication and information transfer between auditors and contractors so that audits produce actionable work scopes for contractors
- Creating a smooth conversion process leading from audits to retrofits
- Training auditors and contractors on the latest in building science and retrofit techniques
- Limiting contractor liability for audit errors

Design systems to ensure that audits produce actionable work scopes for contractors: In instances where audits are performed by independent auditors, contractors often complain of having to re-do audits because they don't have access to the information they need from the auditor. With effective systems of communication in place, including data transfer mechanisms and data protocols, contractors will be able to better use audit information as an actionable work scope sufficient to bid for and complete

retrofits. Furthermore, if independent auditors and contractors work together more effectively, the conversion rate from audit to retrofit is likely to increase.

Programs should work with local contractors and auditors to design standard elements within audit reports that are easy for auditors to generate and useful for contractors when developing bids and conducting retrofits. For example, the New Jersey Home Performance with ENERGY STAR program requires auditors to enter data, which (minus any bid information) is then accessible to any other contractor from whom the customer requests a bid.

Provide additional training to independent auditors: To avoid situations where inadequate third-party audit reports force contractors to perform secondary audits, program-approved auditors should receive additional training to produce actionable work scopes (including detailed photographs) that go beyond what might be included in a standard audit report. With such detailed actionable work scopes in hand, homeowners can obtain bids with fewer or no site visits, which saves everyone time and money and can be important in a resource-constrained environment.

Develop mechanisms to protect contractors from liability for independent audit errors, and vice versa: Some contractors participating in the New York Home Performance with ENERGY STAR program routinely conduct secondary audits of homes that have already been audited by third-party auditors, because contractors are liable for any mistakes made by the original auditor. Programs should explore ways to solve this liability issue, as the additional cost of secondary audits limits profitability and growth potential in the industry.

CONCLUSION

The ambitious job creation and energy reduction goals that are driving the creation of home energy retrofit programs can only be met if programs are structured to facilitate a thriving, efficient and trustworthy Home Performance industry. Programs should set stable and consistent guidelines and rules that give companies as much predictability and flexibility as possible, and work with other programs to ensure that companies can easily work inside, outside and across programs. Effective programs will provide assistance to help companies expand, and include program features that remove barriers to entry. Finally, programs should give companies the leeway to test and create innovative business models, so the industry can operate at maximum efficiency and continue to provide the highest level of quality to American homeowners.



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.

Home Performance Resource Center

P.O. Box 55587

Washington, DC 20040-5587

Phone: (415) 728-9775

Fax: (415) 520-5662

www.hprcenter.org

The Home Performance Resource Center is supported by Efficiency First, the Building Performance Institute (BPI) and the Energy Foundation.

