

# Home Performance with ENERGY STAR<sup>®</sup>

# Sponsor Guide



**Version 1.1**  
**August 2011**

# Table of Contents

---

<b>Table of Contents</b> .....	<b>ii</b>
<b>Acknowledgements</b> .....	<b>iv</b>
<b>Introduction</b> .....	<b>v</b>
<b>EPA and DOE Support</b> .....	<b>viii</b>
<b>Acronyms and Abbreviations</b> .....	<b>x</b>
<b>Chapter 1 ENERGY STAR Brand and Requirements</b> .....	<b>1-1</b>
<b>Chapter 2 Program Planning (Section B)</b> .....	<b>2-1</b>
2.1 Introduction .....	2-1
2.2 Metrics by Which to Gauge the Success of the Program: Goals and Objectives .....	2-2
2.2.1 Implementation Schedule.....	2-2
2.3 A Budget Addressing Key Elements of Program Design .....	2-4
2.4 Contractor Participation Agreement: Recommended and Required Elements .....	2-5
2.5 Marketing/Media Plan.....	2-5
2.5.1 Target Market .....	2-6
2.6 Incentives Structure/Financing Plan .....	2-6
2.6.1 Program Design.....	2-7
2.6.2 Home Performance Protocols.....	2-7
2.6.3 Contractor Recruitment Plan .....	2-7
2.7 Program Evaluation.....	2-8
2.7.1 Contractor Training.....	2-9
2.7.2 Contractor Participation Agreement .....	2-9
<b>Chapter 3 HPA Summary Report (Findings and Recommendations)</b> .....	<b>3-1</b>
3.1 Scope of Work Review .....	3-2
3.2 Estimating Energy Savings .....	3-2
3.3 Estimating Energy Use for Different Purposes .....	3-3
3.3.1 Aggregate Energy Savings .....	3-3
3.3.2 Home Specific Energy Savings .....	3-3
3.3.3 Methods to Calculate Energy Savings.....	3-3
3.3.4 Energy Modeling to Create Deemed Savings.....	3-4
3.4 Energy Modeling Software for Use by Contractors .....	3-5
3.5 Actual Energy Usage .....	3-6
3.6 Limitations of All Methods of Energy Savings Estimations.....	3-7
3.7 Other Energy Performance Estimations .....	3-7

3.8	Estimating Programmatic Energy Savings.....	3-8
3.9	Installation of Measures .....	3-9
3.10	Inspection Results and Recommended Improvements.....	3-9
3.10.1	Introduction.....	3-9
3.10.2	Elements of the Summary Certificate .....	3-9
3.11	Post-installation Test or “Test-out” Protocols.....	3-11
3.11.1	Introduction.....	3-11
3.11.2	Program Oversight of Post Installation or “Test-out” Requirements .....	3-11
<b>Chapter 4 Quality Assurance Plan .....</b>		<b>4-1</b>
4.1	Introduction .....	4-1
4.2	Required Elements.....	4-2
4.3	Job Reporting Review .....	4-2
4.3.1	Optional Report Review Process.....	4-2
4.4	Example Job Report Review Evaluation.....	4-3
4.4.1	HPA Summary Report Review.....	4-3
4.4.2	Test-out Report Review .....	4-4
4.4.3	Example On-site Inspection Scoring Methodology.....	4-4
4.5	Test-out Report Review .....	4-7
4.5.1	Optional Report Review Process.....	4-7
4.6	On-site Inspection Protocols.....	4-8
4.7	Job Selection Protocol.....	4-8
4.8	Visual Inspections and Diagnostic Tests .....	4-9
4.9	Customer Discussion.....	4-10
4.10	Contractor Performance Record.....	4-10
4.11	Customer Feedback .....	4-11
4.12	Contractor Follow-up.....	4-12
4.13	Contractor Feedback and Corrective Actions .....	4-12
4.14	Example Contractor Feedback and Corrective Action Levels .....	4-13
4.15	Inspection Documentation .....	4-15
4.16	Program Data Reporting Requirements .....	4-15
4.17	Your Contractors.....	4-15
4.18	Quarterly Reporting.....	4-16
4.19	Annual Summary.....	4-17
4.20	Active Status Requirements.....	4-17
<b>Appendix A HPwES Partnership Agreement</b>		
<b>Appendix B Program Implementation Plan Template</b>		

# Acknowledgements

---

The Home Performance with ENERGY STAR Sponsor Guide would not be possible without the input of EPA and DOE's partners in the industry. This group includes the Home Performance with ENERGY STAR sponsor partners and stakeholders listed below. These individuals contributed their time and expertise to review and provide comments, which was invaluable to the creation of this Guide.

## **Technical Reviewers**

Steve Baden, Residential Energy Services Network  
Amy Beley, ICF International  
Andrew Fisk, New York State Energy Research and Development Authority  
Jim Fitzgerald, Conservation Services Group  
Asa Foss, SENTECH  
Jerry Hannah, National Grid  
Sue Hanson, Wisconsin Energy Conservation Corporation  
Bruce Harley, Conservation Services Group  
John Jones, New York State Energy Research and Development Authority  
Pat Justis, Missouri Department of Natural Resources  
Joe Kuonen, Building Performance Institute  
Emily Levin, Efficiency Vermont  
Michael L'Ecuyer, ICF International  
Jim Maletta, North Star Energy Consulting  
Marc Milin, ICF International  
Casey Murphy, ICF International  
Paul Norton, National Renewable Energy Laboratory  
Bob O'Brien, National Grid  
William J. Parlapiano III, BP Consulting  
Bob Pfeiffer, Wisconsin Energy Conservation Corporation  
Patricia Plympton, Navigant Consulting  
Ed Schmidt, Northeast Energy Efficiency Partnerships, Inc.  
Greg Thomas, Performance Systems Development  
David Weitz, Conservation Services Group  
Larry Zarker, Building Performance Institute  
Bill Zwack, SENTECH

# Introduction

---

Home Performance with ENERGY STAR (HPwES) offers whole-house solutions to increasing the energy performance and comfort of existing homes while improving the environment. The program is delivered by local Program Sponsors that recruit and train home improvement contractors and consultants (here after referred to as “contractor”) who are qualified to perform home performance assessments (also called comprehensive home energy audit). The assessment includes the heating and cooling systems, windows, insulation, flow of air into and out of the house, as well as a safety check of combustion appliances. Based on this assessment, participating contractors offer solutions to solve home comfort problems and reduce energy usage while decreasing the carbon footprint of the home. Another important element of HPwES is that, upon project completion, the contractor assesses the home’s performance again (a “test out”) to document that specified improvements were properly installed to maximize the promised energy savings. Finally, all participating contractors are subject to quality assurance (QA) reviews by the third-party sponsor to ensure that projects meet program standards and homeowners receive high-quality work. The goal of HPwES is to turn building science based recommendations into improved homes.

The first step of starting a HPwES program is to develop an implementation plan that explains the scope and objectives of the program. The implementation plan includes the policies and procedures that will ensure the success of the local program and compliance with National ENERGY STAR requirements and aligns with the Partnership Agreement signed by the Sponsor. This Guide was developed to provide guidance on the development of a Home Performance with ENERGY STAR program. It is organized to align closely with the Partnership Agreement.

Each Section of this Guide covers the following topics:

- Introduction with a general overview of the topic.
- Description of Required elements that highlight key elements that a sponsor will address and those that are optional.
- Recommended Elements to enhance program design and deployment
- Examples or templates, where applicable, that provide a visual illustration of required or recommended elements. These examples and templates are available only for Program Sponsor use and can be customized by request.

**The recommendations in this guide are not meant to be a ‘one-size-fits-all’ manual for developing a successful HPwES Program, as regional factors and organizational preferences are important and will vary. This guide does provide perspective on the major components of program design and delivery that are required and those that are recommended for local sponsors to implement.**

This Guide covers the following topics:

1. ENERGY STAR: Brand Requirements
2. Program Planning - Provides general guidance to develop a HPwES Program Plan. Each plan will be different, but the planning process includes common elements every program must consider.

3. Program Requirements
  - a. Contractor Participation Agreement Requirements and Recommended Elements
  - b. *Home Performance Assessment (HPA) or "Test-in"* - Defines the minimum requirements and recommendations for assessing a home's energy performance under the HPwES program. The local HPwES program can either meet or exceed National HPwES requirements.
    - 1) HPA Intake Form – a template to facilitate the delivery of an HPA that can be used by Program Sponsors as a template to provide to their participating contractors
  - c. Homeowner HPA Summary Report Form –an example of how to summarize HPA information and recommendations for the customer in an easily understandable and compelling manner that could assist the participating contractor sell energy improvements. The Homeowner Summary Report can also be used to report information to the Program Sponsor for QA tracking.
  - d. Estimating Energy Savings MORE
  - e. Post-Installation Tests or "Test-out" – Defines the minimum level of diagnostic and visual inspections to be completed by participating contractors at the conclusion of a job.
    - 1) Test-out Report Form – a sample form for the test-out data and installed measures which can be provided to the local Program Sponsor for QA tracking
    - 2) HPwES Summary Certificate – recommendations on issuing a summary certificate that lists the work completed and organizations involved. This certificate can be presented to the homeowner by the local program sponsor after receipt of the Test-out Report Form and completion of the QA review process.
    - 3) HPwES Certificate Template – an example template that Program Sponsors can customize for their use.
4. Quality Assurance Requirements and Protocols – defines the minimum requirements for program QA that applies to participating contractors. To use the HPwES logo, sponsors and EPA need assurance that contractors participating in the program are a legitimate business (licensed & insured) and have properly trained personnel to deliver efficiency improvements. Programmatic QA starts with recruitment of professional businesses that sign a Participation Agreement with the sponsor that spells out the program's "rules of engagement". This Participation Agreement defines, among other programmatic details (incentives, reporting, certification requirements, marketing, data management, etc) how the sponsor will ensure quality delivery from it's participating contractors. Starting with:
  - a. Job Reporting File Review – defines requirements and provides recommendations for developing program policies and procedures to perform QA reviews. The job reporting review focuses on the Homeowner HPA Summary and Test-out Reports, and the contracted scope of work. It provides guidance on what to look for in the paperwork review process and next steps to follow if issues with paperwork indicate further investigation is warranted.
  - b. On-site Inspection Protocols – defines requirements and provides recommendations for developing program policies and procedures for performing on-site inspections on participating contractors' completed jobs. Provides guidance on the on-site inspection process, sampling rates, and a contractor performance scoring methodology.

- c. Customer Feedback – defines and provides guidance on meeting the requirement of obtaining customer feedback on participating contractor’s work completed through the development and use of customer surveys.
- d. Contractor Feedback and Corrective Action – provides recommendations for how to provide feedback to participating contractors on the results of a QA review (including paperwork, on-site, and customer survey). This guidance provides recommended corrective action levels and contractor de-listing procedures

This guide denotes which aspects are required program elements per the Partnership Agreement, found in Appendix A. Some Headings indicate the corresponding section in the Partnership Agreement (e.g, for Quality Assurance Requirements relevant to file review, the section will denote “Section D, part 2”). This document provides guidance on required elements for a Home Performance with ENERGY STAR program and recommended measures to enhance your program.

# EPA and DOE Support

---



At the National level, EPA and DOE offer a variety of tools for program development and design, recruiting contractors, marketing to homeowners, and sales training for contractor participants. These tools are offered free-of-charge to Program Sponsors and discussed further below:

- **Program Design:**
  - **Consumer-recognized brand:** Program Sponsors can download and use this logo in promotional materials, including Web sites and advertisements.
  - **Program start-up assistance:** EPA and DOE can provide assistance to sponsors and utilities interested in exploring and planning a HPwES Program. We strongly recommend contacting EPA/DOE early in the process of building your HPwES plan.
  - **Program Development Fact Sheets:** Program Sponsors can download program development fact sheets covering key program elements including contractor recruiting, contractor and consultant business models and quality assurance.
  - **Case-by-case program development support:** Program Sponsors may request additional support from EPA and DOE beyond what is listed above
  - **Logo Use Guidelines:** EPA can provide you with training resources toward training your staff and contractors how to use the logo correctly
  - **HPwES Symposium:** Once a year at the Affordable Comfort Incorporated National Conference we provide sessions to strengthen our sponsor's program with a HPwES specific track and a distinct session just for our sponsors.
  - **Insurance Q&A:** This document provides guidance on requiring insurance and good business practices from your contractors
  - **Marketing tools:** Google Adwords, Pitch Book, HPwES banner for promotional events (recruiting contractors or homeowners), ability to reserve HPwES booth for conferences and outreach events, introductory HPwES video, high resolution graphics
- **Marketing to Homeowners:**
  - **Home Energy Yardstick:** Program Sponsors can host ENERGY STAR's Home Energy Yardstick on their web site to help homeowners take the first step toward HPwES. The Yardstick can be a great screening tool to determine how serious a homeowner may be regarding improving the performance of their home.
  - **Utility Bill Disaggregating Tool:** Sponsors can provide this tool to contractors to disaggregate utility bills of prospective customers to determine how energy is used in homes.
  - **Consumer Brochure:** Program Sponsors and participating contractors can use this brochure to educate homeowners about the benefits of HPwES.
- **Recruiting Contractors:**

- **Contractor Business Development Guide:** This special edition of Home Energy Magazine includes several contractor business success stories that can help Program Sponsors educate contractors about the whole-house contracting business model.
- **Sales training for contractors:** Since home performance contracting is significantly different than other home improvement services due to its comprehensive nature, program sponsors recognize that participating contractors are more successful if they educate their homeowners and change their sales tactics accordingly. This training focuses on teaching in-office and in-home strategies to help participating contractors educate homeowners on the benefits and therefore sell comprehensive home performance improvements. EPA and DOE's resources are limited, therefore please contact us to see if this training is available.
- **Marketing Toolkit / Consumer Video:** This online tool allows sponsors and participating contractors to create customized marketing materials, such as ads, fact sheets, and direct mail pieces, to promote HPwES.
- **Support your Program's Kick Off with a Recruitment Event:** Working with Affordable Comfort, Inc.(ACI), augment your program kickoff event with a "Profit from HP" ½ day session designed to motivate / educate contractors on the business value of delivering HP services. EPA and DOE have limited resources for these activities so make your request as early as possible.

# Acronyms and Abbreviations

---

ACCA	Air Conditioning Contractors of America
ACI	Affordable Comfort, Inc.
AFUE	Annual Fuel Utilization Efficiency
AHRI	Air Conditioning, Heating, and Refrigeration Institute
ANSI	American National Standards Institute
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc.
ASTM	American Society for Testing and Materials
BPI	Building Performance Institute
CAZ	combustion appliance zone
CFL	Compact Fluorescent Lamp
CO	Carbon Monoxide
DEER	California Database for Energy Efficiency Resources
DHW	Domestic Hot Water
DOE	U.S. Department of Energy
DSM	demand-side management
EER	Energy Efficiency Ratio
EF	Energy Factor
EPA	U.S. Environmental Protection Agency
HPA	Home Performance Assessment
HPwES	Home Performance with ENERGY STAR
HVAC	Heating, Ventilation, and Air Conditioning
IPMVP	International Performance Measurement and Verification Protocol
LiUNA	Laborers' International Union of North America
MESA	My ENERGY STAR Account
NAHB	National Association of Homebuilders
NAPEE	National Action Plan for Energy Efficiency's
NARI	National Association of the Remodeling Industry
NEAT	National Energy Audit Tool
NFPA	National Fire Protection Association
NHPC	National Home Performance Council
QC	Quality Control
RESNET	Residential Energy Services Network
SEER	Seasonal Energy Efficiency Ratio
SSE	Steady State Efficiency
WAP	Weatherization Assistance Program

# Chapter 1

## ENERGY STAR Brand and Requirements

---

ENERGY STAR is a nationally recognized label across products, appliances, new and existing homes. More than 17,000 businesses and organizations have become ENERGY STAR partners. The brand identity is a valuable asset, which must be properly used and protected. Proper and consistent use of the logo builds value and reinforces sponsor and contractor connections to the larger national program. EPA tracks all logo use and actively works to protect the trademark and the words “ENERGY STAR.”

### Web Linking

Sponsors have the opportunity for their online listing on the ENERGY STAR website (displayed at [www.energystar.gov/index.cfm?c=home\\_improvement.hm\\_improvement\\_hpwes\\_partners](http://www.energystar.gov/index.cfm?c=home_improvement.hm_improvement_hpwes_partners)) to be web linked to their own web site.

- Ensure your site meets the ENERGY STAR Web Linking Policy, detailed at [www.energystar.gov/weblinking](http://www.energystar.gov/weblinking). All of the required information must appear on the same page.
  - 1) Display the ENERGY STAR Partner logo in compliance with the Identity Guidelines at [www.energystar.gov/logos](http://www.energystar.gov/logos).
  - 2) Reference or provide a reciprocal link to the ENERGY STAR Web site, [www.energystar.gov](http://www.energystar.gov).
  - 3) Include a brief description of your organization's participation in ENERGY STAR.
- Once these requirements are met, email [homeperformance@energystar.gov](mailto:homeperformance@energystar.gov) to request that your web site be reviewed for web linking. Be sure to provide the specific address for the web page that you wish to link to.

The hyper link from the ENERGY STAR Web site will be directed to the webpage on the partner's site that contains these required elements.

Note that meeting the Web Linking Policy is optional. Active Partners who do not wish to have a hyperlink to their website will continue to be listed on the ENERGY STAR website. However, we strongly encourage all sponsors to establish this hyperlink for ease of overall program consistency and review.

### ENERGY STAR logos

As a Partner of Home Performance with ENERGY STAR who has signed a Partnership Agreement, you have the privilege to use both the ENERGY STAR Partner logo and the Home Performance with ENERGY STAR logo. You can download both logos at [www.energystar.gov/logos](http://www.energystar.gov/logos) or through accessing MESA at [www.energystar.gov/mesa](http://www.energystar.gov/mesa). Only participating contractors in our HPwES programs have the privilege to utilize the Home Performance with ENERGY STAR logo and can download this logo through accessing MESA.

Use the Home Performance with ENERGY STAR logo to promote a comprehensive, whole-house energy-efficiency improvement service in accordance with Home Performance with ENERGY STAR criteria outlined in the Home Performance with ENERGY STAR Partnership Agreement. The logo may be used in marketing and advertising materials to educate consumers or to show that a company provides services that clearly contribute to the integrated improvement of homes' systems as recommended by EPA's ENERGY STAR Program.

### **Correct Use of Graphic**

Use of the logo includes Promotional and Educational material, and Web Sites. Use of the logo may also include T-shirts, hats, letterhead, business cards, and other stationery; and company-owned cars and vans, etc.

Because Home Performance with ENERGY STAR is a relatively new service in several markets, it is recommended that the following language appear next to the Home Performance with ENERGY STAR logo where applicable for educational purposes: "Working to deliver whole-house energy savings to improve comfort and help protect the environment."

Any display of the ENERGY STAR logos must adhere to the Identity Guidelines. Please review the full Guidelines at [www.energystar.gov/logos](http://www.energystar.gov/logos).

The Program Sponsor, as agreed to in the Home Performance with ENERGY STAR Partnership Agreement, is responsible for ensuring that Program participants use the graphic consistent with the terms of these guidelines. Additionally, Program Sponsors should approve Program participants' use of the Home Performance with ENERGY STAR Marketing Graphic in marketing and advertising campaigns as well as Program facts that feature the ENERGY STAR name prior to final production or printing.

## 2.1 Introduction

One of the best ways to start a Home Performance with ENERGY STAR (HPwES) program is to begin by reviewing the [www.energystar.gov/homeperformance](http://www.energystar.gov/homeperformance) web site. After reviewing our site, feel free to contact us for more preliminary information. Your next step should be to set goals for your program to achieve, assessing the barriers that inhibit energy efficiency retrofits in your chosen target market and preparing a plan to overcome those barriers. A HPwES template for a HPwES program plan is available that allows potential sponsors to focus on key delivery elements. However, every market is different and each plan is tailored to the specific market conditions of the sponsor. This section highlights the key ingredients needed to develop a HPwES Program Plan. For a simplified outline of suggested sections to include in your plan, please refer to HPwES Program Plan Template in Appendix A

A HPwES Sponsor is responsible for overseeing the program's implementation and work completed by participating home performance contractors. Sponsors have traditionally been State, county or municipal governments, public utilities, or nonprofit organizations chartered by a state or public utility to implement energy efficiency programs. Yet any organization that can meet the criteria (as detailed in this guide) of HPwES will be considered. In general, sponsors commit to providing third-party oversight of improvements completed by participating home performance contractors, protecting the ENERGY STAR brand, and serving the public's interest. The Sponsor organization funds the program, but may decide to contract with other organizations (i.e. program implementation contractor) to assist with planning and day-to-day implementation of the program. The Sponsor is required to submit a program plan detailing the program requirements for which the Sponsor is responsible, which are outlined in Section B of the Partnership Agreement, and described in more detail below. The Implementation Plan Template (Appendix C) provides sponsors with a guideline for developing a program plan that meets the required elements of a HPwES program which include:

- Metrics by which to gauge the success of the program
- A budget that addresses key elements of program design
- Contractor participation agreement which details program requirements
- Marketing Plan
- Incentives Structures and financing options, if applicable
- Description of energy savings estimation tools or estimation protocols
- Program evaluation plan

The Program Plan will identify the sponsoring organization and describe the relationship with other organizations that may assist with program implementation.

## 2.2 Metrics by Which to Gauge the Success of the Program: Goals and Objectives

Table 1 shows the potential per home energy savings for different regions of the country. You will want to conduct your own analysis to determine what is possible in your market.

<b>Table 1 Potential Per Home Energy Savings</b>				
	<b>Census Region</b>			
	<b>Northeast</b>	<b>Midwest</b>	<b>South</b>	<b>West</b>
Electricity (kWh)	1400	1700	4600	1400
Natural Gas (Therms)	400	400	200	200
	<b>Summer</b>		<b>Winter</b>	
Peak Demand (kW)	1.6		0.9	
Typical Improvements	Increase attic insulation; insulating crawl spaces or rim joists; duct sealing, repair and insulation; air sealing; and installing programmable thermostat, energy-efficient heat pump, air conditioner, furnace, boiler, lighting or windows.			

### 2.2.1 Implementation Schedule

An implementation schedule is a useful tool for a program sponsor to prioritize activities, and assist in planning and implementing a program. The schedule identifies, for all stakeholders, the key tasks and when they must begin and be completed.

Table 2 shows an example schedule for implementing a HPwES program.

**Table 2 Example Implementation Schedule**

Activity	Months in Year One												Months in Year Two												Years 3+		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1 - 12		
Notify ENERGY STAR of intent																											
Establish advisory board																											
Establish goals and objectives																											
Perform market assessment																											
Review draft plans with ENERGY STAR																											
Select pilot/expansion markets(s)																											
Select program design/audit tool																											
Define home performance delivery																											
Develop contractor recruitment Plan																											
Develop results tracking system																											
Develop Marketing Plan																											
Develop incentive/financing Plan																											
Develop quality assurance Plan																											
Identify/Develop Training																											
Prepare implementation Plan																											
Send Plan to ENERGY STAR																											
Identify/recruit contractors																											
Train/equip contractors																											
Launch marketing campaign																											
Implement quality assurance protocols																											
Implement results tracking																											
Explore program expansion																											

## 2.3 A Budget Addressing Key Elements of Program Design

Sponsoring a HPwES program is a significant commitment and requires a long-term investment of substantial financial resources and time. Therefore, organizations should consider the costs before making a commitment to sponsor a program. A budget will help Program Sponsors estimate what a program will cost and how to prioritize activities based on goals and available resources.

Table 3 shows an example budget. Actual costs will vary depending on the size and scope of the program, goals and geographic range.

<b>Budget Category</b>	<b>Pilot Phase*</b>	<b>Year1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
Management	\$156,000	\$160,000	\$225,000	\$242,000	\$259,000	\$276,000
Program Development	\$52,000	\$53,000				
Contractor Recruitment	\$65,000	\$323,000	\$323,000	\$323,000	\$323,000	\$323,000
Training/Certification	\$29,000	\$59,000	\$88,000	\$88,000	\$88,000	\$34,000
Mentoring	\$13,000	\$25,000	\$38,000	\$38,000	\$38,000	\$14,000
Marketing	\$78,000	\$191,000	\$305,000	\$467,000	\$627,000	\$770,000
Contractor Job Incentives		\$39,000	\$117,000	\$234,000	\$351,000	\$468,000
Homeowner Incentives		\$216,000	\$647,000	\$1,295,000	\$1,942,000	\$2,589,000
Infield Inspections (QA)		\$18,000	\$40,000	\$68,000	\$83,000	\$98,000
Evaluation	\$25,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000
<b>Total</b>	<b>\$418,000</b>	<b>\$1,124,000</b>	<b>\$1,823,000</b>	<b>\$2,795,000</b>	<b>\$3,751,000</b>	<b>\$4,612,000</b>
Contractor Goal	10	31	63	94	125	136
Job Goal	0	250	750	1500	2250	3000

\*Pilot Phase is typically 6 months to 1 year focused on contractor infrastructure building

Designing a HPwES program starts with defining the goals and objectives the Program Sponsor want to achieve. Achieving energy savings from home retrofits tends to be the primary goal driving Sponsor interest in HPwES. How much energy, and how soon it needs to be achieved will be key questions that will direct your program design. Once you can establish how much energy you plan to save you can break it down into more discreet objectives such as how many homes will need to be improved? What type of improvements will achieve these results; and how many contractors will be needed?

## 2.4 Contractor Participation Agreement: Recommended and Required Elements

While voluntary, participation in the program provides benefits and privileges to contractors, and requires a commitment from the contractor to follow program requirements. In order to maintain a good relationship with participating contractors, the expectations of both parties must be documented in a mandatory participation agreement. This agreement will specify the contractor's commitment to follow program requirements as well as the sponsor's obligations to the participating contractors. There are several key areas a sponsor must address in a participation agreement. Within these key areas, there are recommended elements by EPA (US Environmental Protection Agency) and DOE (US Department of Energy) to bolster program oversight and quality assurance. These key areas include:

- **Explanation of Agreement:** Includes sponsor program background, and explanation of agreement
- **Sponsor Commitments:** Services and support that the program will make available to participating contractor
- **Participating Contractor Commitments:** denotes contractors agreement to play an active role in HPwES by providing high-quality building performance services to its customers
- **Logo Usage:** The Sponsor must address logo usage to ensure protection of the ENERGY STAR brand
- **Business Practices:** Sponsor must determine appropriate business practices for Participating Contractors

Elements of the Contractor Participation Agreement are discussed in further detail in Section 3.

## 2.5 Marketing/Media Plan

Although many homeowners have heard of ENERGY STAR, most have not heard about Home Performance with ENERGY STAR. Program Sponsors play a very important role in educating consumers about the process and benefits of HPwES. The Program Sponsor's public reputation and credibility are very valuable in persuading homeowners to consider making whole-house energy efficiency improvements.

A marketing and media plan that explains how the Program Sponsor will promote the program to local homeowners is essential. Even though contractors are responsible for marketing their company and selling renovations, a program sponsor should promote the program and the value of a whole-house approach using a variety of tactics including: advertising, public relations campaigns, bill inserts, Web sites, media interviews, and special promotional events. The plan should include specific examples of how HPwES will be used in sales and marketing materials and web sites.

ENERGY STAR provides marketing materials such as brochures and a marketing toolkit to help program sponsors and participating contractors educate homeowners about Home Performance with ENERGY STAR.

An Energy Makeover Contest is a creative way to promote energy efficiency. Contest organizers award a major energy efficiency retrofit to the winning contest participant in a highly visible demonstration. The home, chosen for its inefficiency, produces dramatic energy savings. Because the Energy Makeover Contest can be designed to specifically attract consumers to a whole-house approach, it is a promising promotional tool for existing Home Performance with ENERGY STAR programs. The contest also can be used as a tool to launch a Home Performance with ENERGY STAR program.

### **2.5.1 Target Market**

Every market has different challenges and opportunities that will shape the program design and implementation strategy. An evaluation of local market conditions can provide useful background information. This information may include:

- Local energy issues, such as projected cost of energy, utility deregulation activities, air pollution and energy delivery and supply capacity;
- Coordination with other utility demand-side management (DSM) programs and incentives
- Population and housing stock demographics, including predominant age and style of homes, average homeowner income, average homeowner buying habits, average energy consumption and cost-effective energy improvements;
- Local workforce environment, including number of contractors skilled in residential energy assessment and/or retrofit, local licensing requirements, and contractor training and education opportunities.

After evaluating the market conditions, consider selecting one pilot location for the initial launch of the program. Pilots typically set a goal to improve 50-100 homes. Selecting a pilot location to launch the program can help focus available resources, allow for testing of ideas and refining the program's design and delivery, and increase the overall likelihood of program success. Once the program has demonstrated success in the pilot phase, consider how to increase the scale of the program and expand to additional markets

## **2.6 Incentives Structure/Financing Plan**

Because home performance projects typically include comprehensive renovations, costs frequently rise above the level that homeowners are able to pay out-of-pocket. To encourage homeowners to make improvements Program Sponsors may consider offering financial incentives or a financing solution with an attractive interest rate.

Three general principals are recommended for any HPwES incentive plan. First, incentives are only awarded for the completion of energy efficiency improvements recommended in a home performance assessment by a participating contractor. Second, increase the incentive amount such that comprehensive improvements are encouraged. One way to achieve this is to define categories of improvements and base the incentives on the category and number of improvements completed.

Third, offer incentives to both the participating contractors and the homeowners who are improving the energy performance of their homes; this facilitates participation and retention of quality contractors.

## **2.6.1 Program Design**

The design of every HPwES program will be slightly different, but all programs must meet the requirements of the Partnership Agreement (See Appendix A).

Some common program design elements include:

- Home Performance Protocols
- Contractor Recruitment Plan
- Contractor Training
- Contractor Participation Requirements
- Marketing/Media Plan
- Incentive/Financing Plan
- Quality Assurance Plan

## **2.6.2 Home Performance Protocols**

The Program Plan describes how HPwES will be delivered to homeowners. It explains how contractors deliver a Home Performance Assessment (also called a comprehensive energy audit), and summary report; follow best practice work standards and post-installation tests after work is completed.

If HPwES will be delivered as a higher tier of an existing rebate or audit program or as a replacement of a previous program, provide details on how the integration or transition will occur.

## **2.6.3 Contractor Recruitment Plan**

A common market barrier to improving home energy performance is a limited supply of qualified home performance contractors. Even if homeowners get recommendations from an energy audit to improve their home, they typically don't know who is qualified to make the improvements. Developing a strong network of professionals, skilled in whole-house assessment, diagnostic testing, and installation best practices, is essential to a successful HPwES program.

Successful Program Sponsors have developed a contractor recruitment strategy that identifies and recruits highly motivated and successful contractors to participate in the program. Activities may include speaking at NARI (National Association of the Remodelers Industry), NAHB (National Association of Builders) or ACCA (Air Conditioning Contractors of America) Chapter meetings, cold calling reputable contractors, or hosting a Profit from Home Performance workshop to introduce the business opportunity. Networking with utility, state, municipal, distributor, and contractor stakeholders can help identify and recruit likely candidates.

Some Program Sponsors offer contractors incentives to participate such as discounts on training or financing to purchase equipment. Subsidizing training, certification, or equipment will encourage

contractor participation, but should be contingent on completing specific milestones, such as passing certification tests and reporting test-out information (for completed home improvement projects). Another idea is to provide incentives for completed jobs to encourage quality assurance reporting. However, the incentives need to be big enough to get a contractor's attention (\$100-\$300).

Sometimes a tiered incentive or caps may be appropriate so all contractors are motivated and not just one large contractor. In some markets these incentives may not be necessary to spur contractor participation and interest in the program. Program Sponsors should evaluate their market and survey contractors before designing their incentive offerings.

## **2.7 Program Evaluation**

Program Sponsors must track the number of contractors participating, the homes improved and on-site quality assurance inspections completed. This information must be reported to EPA and DOE quarterly for the purpose of national program evaluation. In addition, Program Sponsors are encouraged to evaluate their program accomplishments annually and complete a detailed review every three years. An electronic system for reporting and tracking program results will help streamline this process and should be developed and implemented before the program is launched

## **2.7.1 Contractor Training**

Contractor training that describes the principals of building science, how to perform energy assessments, elements of a successful home performance contracting work practice and effective sales techniques will all help to build and support an infrastructure of qualified contractors. Program Sponsors need not spend resources developing training, since many local, regional and national organizations already offer training for weatherization or home energy ratings.

Mentoring contractors on-the-job through the home performance assessment, home improvements and test-out has become a common and valuable addition to training. Mentoring reinforces training, helps to verify the contractor is proficient and provides an opportunity to suggest ways to streamline the process to make quality assurance inspections efficient and productive. Mentoring is recommended on at least 3 of the first 5 home performance jobs a contractor completes.

Sharing training and mentoring costs with participating contractors is recommended. Sponsors who offer free training do not help to establish a sustainable training infrastructure. Instead, they reinforce a belief that training is not a necessary business expense and set an expectation that will be difficult to change in the future.

Some program sponsors may decide to sub-contract training, mentoring, and quality assurance services. This is common, but program sponsors are well served to try to avoid situations where quality assurance activities are performed by the same person that delivers training and mentoring.

Because some contractors have high employee turnover rates, contractors will need to be re-trained periodically and successful program sponsors provide refresher courses. A continuing education requirement is one way to reinforce training as a business expense.

## **2.7.2 Contractor Participation Agreement**

Each section, accompanied with required and recommended elements, is detailed further in the following table.

## Contractor Participation Agreement

Section	Required Elements	Recommended Elements
<b>Explanation of Agreement</b>	<p><b>Terms and Conditions:</b> sets out terms and conditions under which contractors shall participate in the program. Participating contractors contract with property owners to provide building performance services that are in compliance with program requirements and standards. The program, in return, agrees to provide technical and marketing support for participating contractors</p>	<p><b>Termination Clause:</b> This Agreement is completely voluntary and can be terminated at any time for any reason by either Sponsor or the Participating Contractor with prior written notice from the terminating party to the other party.</p>
<b>Sponsor Commitments</b>		<ul style="list-style-type: none"> <li>• The opportunity to participate in Home Performance with ENERGY STAR training and certification by <b>[INSERT TRAINING ORGANIZATION HERE]</b></li> <li>• Mentoring in the field and by e-mail and phone</li> <li>• Promotion of Participating Contractors in Program marketing</li> <li>• The opportunity to respond to leads generated from a public awareness campaign</li> <li>• Affiliation with ENERGY STAR and access to the ENERGY STAR marketing toolkit (if providing access to toolkit)</li> <li>• Incentives for reporting Home Performance jobs to the Program Access to program-mandated software for building analysis and energy savings estimation</li> </ul>
<b>Participating Contractor Commitments</b>	<p><b>Program Requirements:</b> EPA / DOE requires the Sponsor to delineate contractor program requirements. The following is suggested wording to be included in this section; some requirements must be addressed in the agreement, but the wording does not need to be the exact phrasing.</p> <p><b>Job Reporting:</b> For every Home Performance job (which often triggers an incentive from the Program), the Participating Contractor shall report the job following the administrative procedures and reporting requirements of the Program and shall provide the homeowner with a professional report.</p> <p><b>Field Inspections:</b> Participating Contractor shall allow</p>	<p><b>Software:</b> Participating Contractor shall acquire and use the Sponsor selected software tool(s) for building analysis and energy savings estimation.</p> <p><b>Program Referrals:</b> Participating Contractor shall accept referrals from Home Performance with ENERGY STAR and shall provide services to these referral leads in accordance with Home Performance with ENERGY STAR Contractor Participation Agreement.</p> <p><b>Jobs Completed:</b> To qualify for Home Performance with ENERGY STAR incentives for certification, participation fees, equipment, and cooperative marketing, the Participating Contractor shall, during each year of participation, report at least <b>[X]</b> jobs completed, totaling <b>[X]</b> dollars, or report that 20 percent of all qualifying jobs are Home Performance with ENERGY STAR jobs.</p>

**Contractor Participation Agreement**

Section	Required Elements	Recommended Elements
	<p>random field inspections by the Sponsor or its designee of work that has been performed. Participating Contractor, upon request from Sponsor, and at no additional cost to the customer, shall make reasonable repairs or corrections to work that Contractor has performed to bring such work up to Program standards.</p> <p>Without written permission, Sponsor shall not employ as a subcontractor any firm that has been suspended or terminated from the Home Performance with ENERGY STAR program.</p>	<p><b>Equipment Procurement:</b> Participating Contractor must possess the required diagnostic equipment and</p> <p>Sponsor-approved software, in good working order, and have the ability to deploy it at each participating business location prior to commencing comprehensive energy audits and installing measures under the Program.</p> <p><b>Subcontracting Requirements:</b> Participating Contractor will not subcontract for any of the services without the prior written approval of the Sponsor/implementer and only then upon terms and conditions as Sponsor/implementer may require for services that are incentivized by the program.</p> <p><b>Programmatic Changes:</b> Sponsor reserves the right to make changes to the Home Performance with ENERGY STAR program upon notice to Participating Contractors. Such notification shall be by mail and posting or through the <a href="#">[INSERT WEB SITE ADDRESS]</a>.</p>
<p><b>Logo Usage</b></p>	<p><b>Adhering to ENERGY STAR Identity Guidelines:</b> The Contractor is responsible for the proper use of the ENERGY STAR marks, as well as the proper use of the Home Performance with ENERGY STAR marketing graphic. The Contractor must comply with current ENERGY STAR Identity Guidelines (available at <a href="http://www.energystar.gov">www.energystar.gov</a>), which describe how the ENERGY STAR marks, marketing graphics, and name may be used. The Contractor is responsible for adhering to these guidelines and ensuring that its authorized representatives, such as advertising agencies, are also in compliance. The Sponsor will actively pursue resolution of noncompliance related to the use of the ENERGY STAR marks.</p> <p><b>Promoting Whole-House Process:</b> When using the Home Performance with ENERGY STAR marketing graphic, it must be used to promote a comprehensive, whole-house process for improving the energy efficiency of homes to prevent pollution, protect the environment, and save money on energy bills.</p>	<p><b>Sponsor Approval of Marketing Materials:</b> Submit all Web site designs and marketing materials that use the Home Performance with ENERGY STAR logo to the Sponsor for review to ensure accuracy of ENERGY STAR marks used and consistency of the ENERGY STAR message. The Contractor will allow a minimum of 10 full working days for review and approval of Web site designs and marketing materials.</p> <p><b>Advertising:</b> When advertising or communicating to customers, the Participating Contractor must remain in compliance with advertising guidelines approved by the Program. Participating Contractor may not use logos or service marks of the Sponsor. Contractors may, however, use logos and other materials as approved by the national Home Performance with ENERGY STAR program offered by EPA and the U.S. Department of Energy. Participating Contractor should ask the Sponsor for guidance prior to development and deployment of marketing and communications materials if there is any uncertainty over compliance.</p> <p><b>Contractor Use of ENERGY STAR Mark:</b> Contractor should feature the appropriate ENERGY STAR marks on the Contractor Web site and in other promotional materials (if allowing Contractor to use the Mark).</p>

## Contractor Participation Agreement

Section	Required Elements	Recommended Elements
<b>Business Practices</b>	<p><b>General Business Practices:</b> Participating Contractor shall retain all necessary licensures, certifications, training, and other requirements deemed necessary by state law and the Program policies and guidelines, including all relevant documentation pertaining to the installation of efficiency measures. Participating Contractor will provide the Implementer or Sponsor with access to such documentation on request. This includes appropriate liability insurance, permits, licensure, or certification information, and installed equipment model and serial numbers.</p>	<p>Proof of Upstanding Business: Participating Contractor has the capacity to conduct business successfully. The Participating Contractor shall provide the program with one of the following:</p> <ul style="list-style-type: none"> <li>• A satisfactory Dun and Bradstreet Rating;</li> <li>• Proof of membership in the Better Business Bureau;</li> <li>• Verification of business capacity through at least three of the following items:                             <ul style="list-style-type: none"> <li>• A satisfactory banking reference, At least three satisfactory professional/trade references, such as suppliers of material, tools or credit, or At least three satisfactory customer references; and</li> <li>• Proof that the participating contractor has been in business for at least 3 years.</li> </ul> </li> </ul> <p><b>Waiver (if applicable):</b> Contractors unable to meet these requirements must submit a written Request for Waiver (requires Sponsor to develop the appropriate form). The request must provide a detailed, reasonable, and credible explanation of the circumstances that prevent the Contractor from complying with one or more of the terms of the requirement. The Sponsor reserves the right to reject any and all requests for waivers. Confirmation of this waiver will be renewed yearly.</p> <p><b>Warranty:</b> Participating Contractor shall provide the customer with a written warranty of labor and materials for a minimum of 1 year from the date the service is performed. Equipment installed shall carry the manufacturer's warranty, including optional extended warranty coverage.</p> <p><b>Seeking Technical Assistance:</b> The Participating Contractor shall communicate openly with Program staff to seek assistance as needed in technical or administrative areas pertaining to the Program and provide feedback to the Program on issues pertaining to Program design or administration, or the Participating Contractor's experiences with home performance contracting in general.</p>
<b>Training Requirements</b>	<p><b>Staff Certification:</b> If Participating Contractor intends to conduct home performance energy audits, the Contractor shall maintain at least one staff member who is certified at the (Building Performance Institute, RESNET, or equivalent)</p>	<p><b>Operating Multiple Locations (if applicable):</b> Participating Contractor agrees that any of its operating locations can begin participating in the Program, under the supervision of a Program-assigned technical mentor, when at least one staff member at the operating location seeking</p>

**Contractor Participation Agreement**

Section	Required Elements	Recommended Elements
	<p>level at each participating operating location.</p> <p><b>Technician Training:</b> Participating Contractor shall ensure that (BPI, RESNET, or equivalent) -certified technicians receive, at minimum, training that is in compliance with (BPI, RESNET, or equivalent certification body) continuing education credits requirement.</p> <p><b>Compliance with Industry Standards:</b> While performing any activities connected to the Program, such as home performance energy audits, installation of measures, or performance of post-installation diagnostic tests and inspections, Participating Contractor shall comply with (BPI, RESNET or equivalent) standards governing home performance inspections, diagnostics, and treatments.</p>	<p>participation has passed the [BPI, RESNET, or equivalent] tests.</p> <p><b>Training Availability:</b> Participating Home Performance with ENERGY STAR contractor recognizes that Home Performance with ENERGY STAR Program training is available through the Sponsor program and agrees to follow the Sponsor’s procedures and protocols. This training shall include (a) a description of Home Performance with ENERGY STAR, (b) tips for answering questions about Home Performance with ENERGY STAR, and (c) information on the economical and environmental benefits of energy efficiency.</p> <p><b>Contact Information Update:</b> Notify the Sponsor of a change in the designated responsible party or contacts for this agreement within 30 days.</p>
<p><b>Contractor Representation of Program</b></p>		<p><b>Misrepresentation of the Program:</b> Participating Contractor shall not knowingly misrepresent any information concerning the Program, its purpose, policies, and procedures, or its role in the Program or relationship with the Sponsor.</p> <p><b>Program Endorsement:</b> Participating Contractor understands that participation in the Program does not constitute an endorsement of any kind on the part of the Sponsor. Participating Contractor shall not state or imply any such endorsement, either directly or indirectly.</p> <p><b>Contractor-Sponsor Relationship:</b> Participating Contractor shall properly represent the relationship of the Contractor to sponsor. The Contractor shall identify itself as an independent contractor and a qualified participant in the Sponsor’s Home Performance with ENERGY STAR Program. Participating Contractors shall not represent themselves as working for, or certified by, EPA, the Sponsor, or Sponsor’s affiliate, nor represent him or her self as a Home Performance with ENERGY STAR contractor.</p>
<p><b>Voluntary Termination</b></p>	<p><b>Right to Terminate:</b> Sponsor reserves the right to terminate this Participation Agreement at any time for cause of the Participating Contractor’s noncompliance with the Home Performance with ENERGY STAR Program guidelines, state laws, or this Participation Agreement.</p>	<p><b>Privilege to Participate:</b> Participating Contractor acknowledges that participation in this Program is a privilege, and the Sponsor may suspend or terminate the Contractor’s participation in the Program at any time and for any reason. Failure to comply with the requirements of this Participation Agreement or to maintain any of the standards set forth by the Program shall</p>

## Contractor Participation Agreement

Section	Required Elements	Recommended Elements
		<p>constitute a reason to terminate the Participating Contractor’s participation in the program. In all cases involving a contractor’s participation status or denial of program incentives, the Sponsor’s decision is final.</p> <p><b>Right of Contractor to Terminate:</b> In the event of a change to the Participation Agreement, the Participating Contractor shall have the right to terminate the Participation Agreement if the modified Participation Agreement is unacceptable to the Participating Contractor.</p> <p><b>Dispute Resolution:</b> Following is some suggested wording to address disputes that may arise between the Participating Contractor and the Sponsor or a customer.</p> <p><b>Authorized Representation:</b> In the event of a dispute, each party agrees to have an authorized representative empowered to resolve the dispute and to meet for a period of not more than X calendar days to resolve the dispute. Should the dispute resolution be unsuccessful, the matter may be submitted to any court of competent jurisdiction or an alternative dispute resolution panel. No oral or written representation made during the course of any panel proceeding or other settlement negotiation shall constitute a party admission.</p>

## HPA Summary Report (Findings and Recommendations)

---

Reviewing the findings with the customer is the culmination of the HPA process. This is the opportunity to present the homeowner with the improvement opportunities discovered during the HPA and solutions for improving the performance of the customer's home. Therefore, the participating contractor will discuss inspection findings and present a recommended scope of work to the homeowner.

At a minimum, the following elements are required to be included in an HPA Summary Report provided to a homeowner after the HPA has been completed:

- Participating contractor name, contractor contact information, and name of technician completing the HPA.
- Assessed home's address.
- Date assessment was performed
- Existing conditions:
  - Air leakage visual inspection or diagnostic results.
  - Insulation levels for walls, attic, rim-joists, and foundation (crawl, basement, or slab).
  - Approximate age and condition of HVAC equipment (heating, cooling, and ventilation fans), water heating equipment, and condition of exhaust flues for HVAC or water heating equipment that consumes fossil fuel.
  - Type and condition of windows and doors.
  - Duct system visual inspection findings.
  - Approximate age and condition of appliances.
  - Any signs of moisture deposition, building performance failures or conditions affecting the durability of the home.
  - Results of tests related to the use of combustion appliances (draft, spillage, carbon monoxide, combustion appliance zone (CAZ) depressurization and gas leak testing).
- A set of recommendations that is reasonably comprehensive in identifying measures that save energy, address combustion safety, comfort, moisture deposition, indoor air quality issues, durability or other building performance problems.
- Recommendations in the comprehensive work scope must address air leakage between the house and attached garage due to the potential for infiltration of carbon monoxide and other fumes.
- An estimate of energy savings from recommended improvements and improvement installation cost.

The HPA summary report will include findings of existing conditions and recommendations to improve the performance of the home. Many Program Sponsors may choose to receive this report with the scope of work contracted by the homeowner. This review will verify:

- Compliance with HPA delivery requirements.
- Recommendations provided to the homeowner are reasonably comprehensive and consistent with the findings of the HPA.
- Recommendations include an estimate of energy savings from the proposed improvements.

**Note:** The HPA includes the activities (i.e. inspections, tests, etc.) that are completed to assess a home's performance, and prepare a recommended scope of work. Contractors that agree to participate in a HPwES program need to have clear direction on what services they are expected to deliver. Therefore, Program Sponsors will have policies and procedures explaining the minimum requirements of the HPA. These policies and procedures are intended to establish a minimum level of service that can be marketed to homeowners by a broad group of stakeholders. Program Sponsors now can choose either RESNET or BPI's Audit standard - whichever one more adequately fits its market. Included in these Energy Audit Standards is information on estimating the energy savings and the homeowner report. The required elements of the HPA do not have to be completed in one home visit but must be completed prior to the commencement of home improvements.

### 3.1 Scope of Work Review

Some programs may require a review of the scope of work before approving financing or incentives for eligible measures. If this pre-approval is required, be aware this will add an interruption to the contractor's sales process. As program and contractors mature, stepping back from this requirement will give contractors more flexibility to close jobs faster.

### 3.2 Estimating Energy Savings

Home Performance with ENERGY STAR promotes the idea that homeowners can expect to save 20% or more of their total energy bill by installing recommended measures that are identified during home energy assessments. Contractors participating in HPwES need to have clear guidance on what methods are acceptable for estimating the energy savings that will result from installing a list of home improvements.

Fundamentally, estimating energy savings includes predicting future energy use.

$$\text{Percent Energy Savings} = \frac{\text{Predicted Future Energy Use (after improvements)}}{\text{Baseline Energy Use}}$$

Predicting the future is never easy. The baseline energy use in the denominator of this equation can be either estimated or based on historical energy bills. Using a historical baseline is preferred, but there is no way to avoid making at least one prediction (the numerator – estimated future energy use after improvements).

Sponsors have several methods to estimate the expected energy savings of a package of improvements. Each of these methods has advantages and disadvantages. In order to evaluate which method may be appropriate for a specific sponsor, it is important to recognize that the estimation of energy savings serves a variety of different stakeholder needs.

## **3.3 Estimating Energy Use for Different Purposes**

### **3.3.1 Aggregate Energy Savings**

Utility companies, state energy offices, public service commissions, and similar entities need to assess the impact of energy efficiency measures on an aggregate level. While it would always be preferable to know exactly how much energy savings can be expected for every installed measure in each individual home, such granular data may not be worth the effort to collect. For example, a utility may need to determine how much energy was saved by its energy efficiency program after air sealing and insulating 1,000 homes. Whether some homes saved significantly more energy than the average and some homes saved a fraction of the average is not as critically important as what aggregate savings were achieved. These aggregate results are more applicable to determine total program cost-effectiveness and to estimate future demand

### **3.3.2 Home Specific Energy Savings**

Homeowners and participating contractors need to assess the impact of energy efficiency measures on a home-specific level. The fact that air sealing and insulating a typical home may save an average amount of energy is not as relevant, and arguably contradicts the home performance approach of assessing a home's unique characteristics to determine cost-effective recommendations.

Homeowners and home performance contractors typically desire to have energy estimating tools, methods and incentive structures that identify and incentivize installed measures that are uniquely designed for that individual home and homeowner (assuming that the programmatic reporting burdens of using these homeowner-specific approaches don't outweigh the benefits).

### **3.3.3 Methods to Calculate Energy Savings**

Predicting future energy use is typically achieved by utilizing mathematical models - from simple algorithms based on rules-of-thumb or empirical data to complex physics-based whole building simulation models.

- Some programs will use energy-modeling software to create deemed savings databases. These deemed savings will be generally appropriate for most measures in most houses but are not intended to estimate specific savings of any measure in any specific house. In such cases, contractors and homeowners may not need to use software to determine which measures may be appropriate for the home.
- Other programs will allow (or mandate) contractors to use energy-modeling software to estimate energy savings that are specific to each home.

Under both approaches, energy modeling software is used – the difference is whether the energy modeling software is being used by the program to develop the deemed savings database, or by the contractor for each home.

### 3.3.4 Energy Modeling to Create Deemed Savings

The Department of Energy has defined deemed savings as:

**Deemed Savings.** An estimate of an energy savings or energy-demand savings outcome (gross savings) for a single unit of an installed energy-efficiency or renewable-energy measure that (1) has been developed from data sources and analytical methods that are widely considered acceptable for the measure and purpose, and (2) will be applied to situations other than that for which it was developed. That is, the unit savings estimate is "deemed" to be acceptable for other applications.

Deemed savings databases have historically been built using existing measurement and verification data. One example is the California Database for Energy Efficiency Resources (DEER). Local sponsors have tailored these existing databases to adjust for their climate, retrofit techniques, housing stock, and typical energy consumption in their jurisdictions. For example, Michigan recently used data from Wisconsin and other states to create its own comprehensive database. New Hampshire has done the same using deemed savings data from nearby New England states.

**Advantages:**

- Once created, deemed savings can be a simplified means to quickly estimate energy savings and incentive levels using simple calculations. This simplicity can allow:
  - Contractors to quickly sell a package of improvements and know the total incentive levels available
  - Utilities and other entities to have clear “rules of the game”
  - A perceived level playing field for a public service commission (or other oversight entity) to evaluate the impacts of different utility programs

**Disadvantages:**

- Can require a significant investment of time and effort to create
- Often require a continual process of refinement
- Do not address homeowner and contractor needs to have home specific energy savings calculations
- Can create perverse incentives whereby prescribed incentive levels tied to specific measures may make little or no impact on actual energy savings, based upon a home’s characteristics and unique needs
- Deemed savings are often based upon an assumption that a single measure will be installed in a home. However, when multiple measures are installed (e.g., air sealing and HVAC replacement), the total energy savings is often less than the sum of the parts.
- Utilities and other participants may (perhaps justifiably) create programmatic elements that maximize energy savings based upon the features and limitations of the deemed savings database - not building science or best practices. Imperfections in the deemed savings levels may be amplified as a result.
- “Pick lists” based on deemed savings tend to only identify and incentivize the most cost-effective measures, but do not encourage deeper energy retrofits. By ignoring the cost of lost opportunity to install multiple measures in a home, programs reliant on deemed savings may create situations where return visits to a home are needed to install future measures that were not initially identified as cost-effective. The commensurate overhead and transaction costs associated with future visits are ignored

## 3.4 Energy Modeling Software for Use by Contractors

Many programs have relied on contractors using energy modeling software to identify cost-effective recommendations. In most software applications, participating contractors collect a variety of data points about the home’s building shell, mechanical equipment, size, and occupants.

DOE’s Weatherization Assistance Program (WAP) has approved several software programs for use in its program. One example is the National Energy Audit Tool (NEAT). NEAT checks the applicability of 34 building envelope, space-heating and space-cooling system, and baseload energy efficiency measures to the specific home being audited. These measures include air and duct leakage reduction, envelope insulation, window replacements and other treatments, space-heating and

space-cooling equipment replacement and tune-up, replacement refrigerators, water heater tank and pipe insulation, replacement lighting, and more. NEAT and other WAP approved software tools have been developed to provide cost-effective recommendations for program administrators that use public funds to invest in energy efficient measures.

There are a variety of software programs in the market, although most sponsors have traditionally relied upon software that has been approved by some authoritative body, such as software approved by DOE for weatherization work, or software determined acceptable by the mortgage industry in the new home marketplace.

The advantages and disadvantages of using energy modeling software are varied, and may or may not be relevant for individual software solutions. However, some important considerations that sponsors have traditionally considered when selecting a software solution include:

- Ease of use to train new users
- Ease of use to enter home data into the program
- Ability of contractor to collect the data points
  - Accessibility of data (e.g., SEER rating)
  - Volume of data
- Cost
- Quality of customer reports
- Quality of energy savings calculations
- Ability to incorporate historical energy usage data for the specific home

A significant issue that sponsors and contractors have confronted is the applicability of certain software solutions for use in the existing home marketplace, and - in particular - for the specified intent of HPwES to educate homeowners when making decisions about home energy improvements.

## 3.5 Actual Energy Usage

While this discussion is focused on estimating energy savings, recognition should be paid to actual energy use after improvements are made. Post-improvement data have been used to calibrate deemed savings tables and to enhance energy modeling algorithms. However, program sponsors may also want to investigate how actual energy usage (post-installation) could be used to incent homeowners. Creative strategies may be pursued using Advanced Metering devices, or using financing vehicles.

For example, certain existing financing instruments create incentives for homeowners to pursue deeper energy savings by offering lower interest rates for packages of improvements that save more energy, based upon estimated energy savings using modeling software (e.g., 5% interest rate loans for improvement packages modeled to save 20%, 4.5% interest rates for packages modeled to save 25%, etc). Programs may consider offering additional buy-downs on those interest rates if post-installment utility bills exceed the modeled savings - such as an additional 0.5% rate cut if a home achieves 30% savings when it was estimated to save 25%. Post-installation incentives have the two-

fold advantage of 1) being real, not modeled or deemed, and 2) incentivizing homeowners to make behavioral changes or to purchase more efficient products in the future.

## 3.6 Limitations of All Methods of Energy Savings Estimations

- Home-owner “take-back” – for example, some homeowners may decide that they can turn up their thermostat in the winter because they can now afford to do so
- An old refrigerator that was replaced by an energy efficient model may be moved to the basement. Other things being equal, total energy use would go up.
- Homeowners (and contractors) may interpret a reduction of 20% in total energy use to equate to an equal reduction in the bills. However, the fluctuating price of energy may impact those expectations. Generally, the 20% reduction should be viewed as a 20% reduction in total BTUs.
- Other variables:
  - Year-to-year climate variations
  - Changes in household composition (e.g., new occupants)
  - Equipment maintenance issues (e.g., filter replacement in HVACs)
  - The simple fact that no model fully captures reality

Homeowner behavior and education remains an absolutely essential topic to address when trying to lower energy usage. It is also beyond the scope of this section of the Sponsor Guide.

## 3.7 Other Energy Performance Estimations

Another factor that sponsors may consider relates to how energy modeling calculations may be used for added value beyond the Home Performance with ENERGY STAR brand promise. The goal of HPwES is to improve a home’s performance by 20% or more by having:

- Qualified contractors trained in building science participate in the program
- Contractors follow best practices and common protocols to assess a home (e.g., blower door, combustions safety testing)
- Contractors use an acceptable method to determine estimated energy savings
- Local sponsors facilitate the installations of recommended measures (e.g., through incentives, education, and/or helping contractors and home energy advocates to sell improvements)
- Contractors follow best practices and common protocols to test out a home (e.g., blower door, combustions safety testing)
- Local sponsors provide 3rd party oversight - 100% file check and a minimum of 5% field check (e.g., blower door, combustions safety testing, customer surveys)

The HPwES brand promise is not:

- promising that an existing home’s energy use will be comparable to its neighbors, or to a new home build to code or beyond
- assessing how an existing home will perform under different operating assumptions (e.g., if a new family moves into the home with different behaviors)

However, some homeowners and other entities will find value in having that knowledge. For example, a local government that mandates a point of sale energy assessment will want to know the inherent characteristics of a home’s performance irrespective of occupant behavior - they will want an “asset” rating, not an “operational” rating. Local sponsors should weigh the advantages and disadvantages of including asset ratings in addition to operational ratings. The additional informational value that asset ratings provide may or may not create potential downsides - such as adding to the time and cost of assessments, requiring more training for participating contractors, and confusing customers who simply want to know how specific installed measures will affect their energy bills.

### 3.8 Estimating Programmatic Energy Savings

Programs may be more interested in estimating aggregate energy savings. Public Service Commissions and other entities calculate the cost-effectiveness of programs by evaluating the estimated energy savings generated and the costs to achieve those savings. For most utilities, these impacts are the reason why they are considering HPwES, and they are familiar with using the terms “cost-effective” and “energy savings” in the context of these programmatic needs. This evaluation, monitoring and verification process serves a critical function. There are many resources available on how to estimate energy savings and determine the cost effectiveness of programs.

- The National Action Plan for Energy Efficiency’s (NAPEE) Understanding Cost-Effectiveness of Energy Efficiency Programs: Best Practices, Technical Methods, and Emerging Issues for Policy-Makers (<http://www.epa.gov/cleanenergy/documents/cost-effectiveness.pdf>).
- The National Action Plan for Energy Efficiency’s Guide for Conducting Energy Efficiency Potential Studies [http://www.epa.gov/cleanenergy/documents/potential\\_guide.pdf](http://www.epa.gov/cleanenergy/documents/potential_guide.pdf)
- The National Action Plan for Energy Efficiency’s Model Energy Efficiency Program Impact Evaluation Guide [http://www.epa.gov/cleanenergy/documents/evaluation\\_guide.pdf](http://www.epa.gov/cleanenergy/documents/evaluation_guide.pdf)
- The Northeast Energy Efficiency Partnership’s report, “The Need for and Approaches to Developing Common Protocols to Measure, Verify and Report Energy Efficiency Savings in the Northeast” [http://neep.org/uploads/SOAPResources/id188/Protocols\\_report.pdf](http://neep.org/uploads/SOAPResources/id188/Protocols_report.pdf)

There also exists an International Performance Measurement and Verification Protocol (IPMVP). The IPMVP is an industry-standard protocol for measuring and verifying energy savings. It is a broad framework that outlines a flexible and broad set of measurement and verification approaches for evaluating energy savings in buildings. Specific techniques are designed to match project costs and savings requirements with particular efficiency measures and technologies. Each option is applicable to different programs and projects based on factors such as the complexity of the efficiency measures under evaluation and the risk expectations. Accordingly, each option varies in accuracy and cost of implementation, as well as strengths and limitations.

## 3.9 Installation of Measures

All measures should be installed by contractors following local building codes, manufacturer specifications, and emerging industry standards and guidelines.

## 3.10 Inspection Results and Recommended Improvements

### 3.10.1 Introduction

Homeowners who choose to invest in upgrading the energy performance and comfort of their home are often interested in having a “Summary Certificate” that documents the improvements, as well as the organizations and companies involved in their home performance improvement. This “Summary Certificate” offers the homeowner proof that energy improvements have been made to their property – which may contribute to improving the home’s future re-sale value.

Local Program Sponsors who want to develop their own “Summary Certificate” must ensure that it includes the required elements specified below and is submitted to the National Program for approval prior to being distributed.

### 3.10.2 Elements of the Summary Certificate

The required elements of the “Summary Certificate” are:

- The National HPwES logo mark and mission statement.
- Address of home where improvements were completed.
- Names of companies performing and verifying improvements.
- Date of improvements completion.
- Specific home improvements completed (e.g., attic insulation increased to R-30, SEER 14 air conditioner installed, air sealing performed).
- All certificates will be issued by the sponsor – not participating contractors.

Optional Elements for the Summary Certificate Include:

- Estimated energy savings or home performance results achieved. (e.g. HERS® Index)
- Estimated environmental impacts of improvements.
- Local Program Sponsor logo mark and mission statement (if applicable).
- Program representative signature block.

# Home Performance with ENERGY STAR® Summary of Energy Improvements Performed

## Efficiency Vermont

### Home Address:

OWNER NAME  
Address  
City, State, Zip

### Work Performed by:

Company Name

### Work Verified by:

Company Name

### Work Completed on:

Month 00, Year

### Home Performance Improvements:

(Sample List)

- Air Sealing Performed
- Attic Insulation Increased to R-30
- Wall Insulation Added
- Ducts Sealed
- Seer 14 Air Conditioning Installed
- 90% AFUE Furnace Installed
- High-Performance Windows Installed
- ENERGY STAR Qualified Dishwasher and Refrigerator Installed
- 5 ENERGY STAR Qualified CFLs Installed

### Environmental Impact of Improvements:

(Optional)

- CO<sub>2</sub> Emissions reduced by: 1360 lbs

### Home Performance Results Achieved:

(Optional)

- Home energy use before improvements
- Home energy use after improvements (estimated)

Program Representative (Signature Optional)

Home Performance with ENERGY STAR® offers a comprehensive, whole-house approach to home improvement that results in better energy efficiency, greater comfort, and lower energy bills. ENERGY STAR is a voluntary partnership sponsored by the U.S. EPA and U.S. DOE to protect the environment through superior energy efficiency.



HOME PERFORMANCE WITH  
ENERGY STAR

## **3.11 Post-installation Test or “Test-out” Protocols**

### **3.11.1 Introduction**

One of the features that distinguish HPwES as a value-added service for residential customers is the series of instrumented tests and inspections that the home performance contractor performs after the improvements have been made to a home. These tests support the “do-no-harm” principal which is a hallmark of home performance contracting. While there is no guarantee that any home will operate safely under all conditions, the home performance contractor is uniquely concerned about health and safety of the occupants. In addition to addressing health and safety issues that may be directly affected by the home performance work, some of the tests provide valuable information on the effectiveness of air and duct sealing measures installed.

### **3.11.2 Program Oversight of Post Installation or “Test-out” Requirements**

To ensure that the “test-out” is performed adequately by participating contractors, Program Sponsors need to adopt “test-out” requirements in their program policies and procedures that meet or exceed the guidance in this document. The following guidance and test-out template are offered to assist Program Sponsors with the development of their “test-out” procedures. When a participating contractor completes home performance improvements for a customer, they will perform the post-installation tests and inspections described in this section, and enter the results in a “Post-Installation Tests and Inspections” Form (the National Program offers a template form that can be used or modified by Program Sponsors). If any of the tests or inspections show the need for corrective action, the contractor can record the action item(s) in the document or postpone completing the Form (including having the customer sign it) until those corrective actions have been made.

## 4.1 Introduction

Quality assurance is an essential component of Home Performance with ENERGY STAR and a program sponsor is responsible for developing and implementing a Quality Assurance Plan. Quality assurance protects homeowners by providing an independent review of the work performed by participating contractors to ensure that it meet program standards. Quality assurance also protects the reputation of the Program Sponsor.

The Program Sponsor must identify who will be responsible for quality assurance and provide clear direction on what activities they are expected to complete. Protocols that need to be defined include:

- Job Reporting Review (file review)
- On-field inspection
- Customer Feedback
- Contractor Feedback and Corrective Actions

In accordance with the terms and conditions of using the ENERGY STAR logo mark, and to maintain HPwES's reputation for quality and value all Program Sponsors are required to implement a QA plan. This plan will include strategies to ensure that participating contractors are qualified and that completed improvements meet program standards. QA plans will explain:

- **Reporting process** that requires participating contractors to report jobs that are promoted to homeowners and performed under the HPwES program.
- **Job report review process** that ensures program compliance and provides for follow-up with the contractor when necessary.
- **Customer feedback mechanism** which allows customers to provide feedback directly to the Program Sponsor.
- **On-site inspection protocols** including a sampling rate set at a minimum of 5% (1 in every 20 jobs) for all participating contractors.
- **Conflict resolution mechanism** for responding to and resolving customer complaints.
- **Record keeping and tracking** of results from on-site inspections, customer surveys, and corrective actions. Records must be available for review upon request from the National HPwES Program.

## 4.2 Required Elements

Program Sponsors are required to implement a QA program that evaluates whether participating contractors have:

- Performed a HPA and made comprehensive recommendations for improving the performance of the home.
- Installed improvements which will reduce energy use in the home, improve comfort, or address specific building performance problems, such as failures on combustion tests.
- Satisfactorily completed the contracted scope of work.
- Performed required diagnostic tests and inspections upon completing the improvements.

## 4.3 Job Reporting Review

This guidance has been developed to help clarify the job report review process and provide recommendations for Program Sponsors to consider while developing program policies. While the Program Sponsor may choose to consolidate reporting of all information into one submittal, this section describes the report review process as three separate document reviews which are supplemented by a periodic review of a contractors performance history across a period of time. An example of questions to be answered during the job report review process is in Section 4.4.

This guidance has been divided into the following areas:

- HPA Summary Report (Findings and Recommendations).
- Scope of Work Review.
- Test-out Report Review.

### 4.3.1 Optional Report Review Process

The required paperwork reporting associated with completed jobs may be reported to the Program Sponsor at set intervals or at the completion of the job. Providing incentives to encourage contractor reporting is recommended.

## 4.4 Example Job Report Review Evaluation

### 4.4.1 HPA Summary Report Review

HPA Summary Report Review	Yes	No
All required diagnostic tests have been performed and information provided is consistent with program policies and procedures.		
Findings reflect strong adherence to the technical guidelines and local program requirements		
Combustion equipment tests have been completed and appropriate recommendations have been made to mitigate any failures in the		
Recommendations are comprehensive and consistent with program policies and procedures and with HPA findings		
Estimated savings for proposed improvements have been provided as part of the summary report		
Notes:		

#### 4.4.1.1 Scope of Work Review

Contract Scope of Work of Contract Review	Yes	No
Any findings of combustion safety issues have been included and addressed in the scope of work		
The scope of work is consistent with the recommendations in the HPA Summary Report and program policies (cost effectiveness or allowed measures and installation specifications).		
The scope of work is comprehensive in nature and includes the replacement of more than one system (e.g. Not just an HVAC replacement or window replacement job)		
Notes:		

## 4.4.2 Test-out Report Review

Test-out Report Review	Yes	No
All appropriate post diagnostic and visual inspections have been recorded per the contracted scope of work.		
All installed measures in the contracted scope of work have been verified as installed.		
Airflow tests have been completed on the HVAC system if work on ducts or an HVAC system was replaced in the scope of work. Is the airflow within the acceptable range? Refrigerant charge was check for AC or HP replacements		
Combustion equipment testing and combustion appliance zone testing has been completed and results recorded. No corrective action is needed based on results		
Building air- tightness standards have been calculated and appropriate recommendations for ventilation or required corrective action has been installed		
The contractor and customer have signed the test-out reporting form attesting to the completeness of work		
Notes:		

## 4.4.3 Example On-site Inspection Scoring Methodology

The following is a proposed methodology to use during on-site inspection to evaluate a contractor's work or can be used by Program Sponsors to design their own scoring methodology. The scoring tables below provide a conceptual basis for a programmatic scoring system that would be based substantially on a Program Sponsor's adopted technical standards.

In this example a contractor would receive the lowest score for which they received a "Yes" on an inspection finding. The scoring protocol presents a set of statements that characterize a contractor's work performance. The inspector would begin with the first set (Score 0) and answer each question either "Yes" or "No". If the contractor receives a "Yes" answer to any question, they receive a score of 0. If not, they proceed to the next set of questions and repeat the process. The scoring is on a scale of 0 to 4, with the 0-2 scores in the "Fail" range and 3-4 in the "Pass" range.

**Score: 0** - Contractor's performance does not meet technical standards or program requirements and the home requires immediate corrective action:

On-site Inspection Findings	Yes	No
Combustion appliance testing (including carbon monoxide test, draft measurement, spillage evaluation, and worse-case depressurization of combustion appliance zone) results do not meet BPI Technical Standards or relevant equivalent program standard		
Measures in contracted scope of work not installed (e.g. attic insulation not installed or duct sealing work not completed)		
Minimum standards for building ventilation are not being met (e.g. BPI Technical Standards)		
Unsafe conditions resulting from installed work and posing an immediate risk to occupants are found (e.g. greater than 35 ppm recording during combustion appliance testing)		
Notes:		

**Score: 1** - Contractor's performance does not meet technical standards or program requirements and the home requires corrective action:

On-site Inspection Findings	Yes	No
Serious moisture issues have gone unaddressed and have not been included in recommendations per Program Sponsor requirements		
Health and safety issues present, but do not pose an immediate risk to occupants		
Measures were not installed correctly (Airflow or refrigerant charge associated with a new AC system does not meet program requirements (e.g. ACCA HVAC QI Specification or BPI Technical Standards)		
Customer did not receive HPA report or did not receive comprehensive recommendations		
Notes:		

**Score: 2** - Contractor's performance meets all combustion safety requirements but several technical deficiencies were observed that require corrective action:

On-site Inspection Findings	Yes	No
Below standard installation of insulation (e.g. significant gaps or voids in installation of attic insulation or attic insulation levels do not meet specifications in the contracted scope of work)		
Air sealing work did not address significant pathways for infiltration (e.g. large attic bypasses into the living space around duct work penetrations, dropped soffits ceilings, etc...)		
Windows installed did not meet program requirements (e.g. specified performance for u-value and solar heat gain co-efficient)		
Garage to living space leakage found and not addressed in the HPA findings and recommendations nor the scope of work		
HVAC equipment not installed to program guidelines or not operating properly (e.g. flame interference found in gas furnace, indoor evaporator coil not matched to the outdoor coil for AC system replacement, or furnace temperature rise test not within manufacturer specified range)		
Recommended measures on HPA report were not comprehensive; inspection found several cost effective improvements that were not recommended to the customer (e.g. blower door test results indicate considerable opportunities for air sealing that were not included in HPA findings and recommendations)		
Test-out reporting does not match on-site QA inspection (inaccurate testing results)		
Notes:		

**Score: 3** - Contractor's performance meets all technical standards and program requirements but some areas of technical performance need improvement and may require corrective action:

On-site Inspection Findings	Yes	No
Installed measures did not meet all technical installation standards, but no serious deficiencies and contractor corrected items. (e.g. use of sealant on ductwork that does not meet UL 181, UL 181A, or UL 181B)		
Some incorrect data gathered and provided to customer but with no significant impacts on the work completed or effectiveness of the job		
Recommendations in customer report are fairly, but not completely comprehensive (e.g. did not address minor moisture issues like downspout extensions or some air sealing opportunities were missed)		
Notes:		

**Score: 4** - Contractor's performance meets all technical standards and program requirements

On-site Inspection Findings	Yes	No
All technical standards for installation have been met (e.g. BPI Technical Standards)		
Work comprehensive in nature, and high priority items have been installed.		
Recommended and installed measures were consistent with program requirements; work not performed was by customer decision		
Test-out reporting verified to be accurate		
Notes:		

## 4.5 Test-out Report Review

### 4.5.1 Optional Report Review Process

#### 4.5.1.1 Summary and Trends Review

It is recommended that Program Sponsors not only look for clear examples of noncompliance, but also look for patterns of potential non-compliance over many jobs (for instance, a heating contractor demonstrating a habit of failing to recommend attic insulation in the Homeowner Summary Report). For this reason, it is recommended that all reviews be tracked and trend analysis be completed quarterly.

The review of test-out information must be included in the report review process. This is a review of all required post-completion test-out data and will include a customer's signature signifying that the

work is complete (and meets their reasonable expectations). The test-out report may be compared to the contracted scope of work and other pre-installation reporting data for consistency and accuracy of the completed job. The HPA findings, test-out report and installed measures will provide the basis for the on-site QA inspections. If corrective action is needed, based on results of an on-site QA inspection, then an additional test-out report will be submitted to document the corrective action completed with a customer signature.

#### **4.5.1.2 Follow-up**

If reviews indicate that a contractor's reported jobs do not meet program policies and procedures then the Program Sponsor will consider conducting an on-site inspection on the job being reported.

## **4.6 On-site Inspection Protocols**

Local Program Sponsors' QA protocols are required to explain how on-site inspections will be conducted. The on-site inspections will be delivered by individuals that meet or exceed the local program's minimum technical requirements for a participating contractor. DOE is currently drafting new protocols to define practical on site inspection procedures.

The protocols for performing on-site inspections have been divided into the following areas:

- Job Selection Protocol
- Customer Discussion
- Visual Inspection and Diagnostic Tests
- Contractor Performance Record
- Inspection Documentation

## **4.7 Job Selection Protocol**

Program Sponsors are required to perform on-site inspections at a minimum sampling rate of 5% on each participating contractor's completed jobs. Please note that onsite inspections are at the contractor level and not 5% of total program jobs. On-site inspections focus on evaluating a participating contractor's ability to perform a HPA, develop a scope of work of eligible improvements, and properly install the improvements selected by the customer.

Jobs will be selected through a random sample in order to obtain a representative sample of each contractor's work. However, the sample is not expected to be purely random. Some homeowners will not be willing to schedule the inspection; other customers may request an inspection due to issues or concerns about the work performed; and some inspections may be conducted as a result of issues raised in the job report review process.

### Optional Tiered Sampling Rate

*It is recommended that a greater sampling rate be applied to participating contractors who are new to the program and/or are not fully meeting program requirements. The following is an example of a tiered approach to sampling rates for on-site inspections:*

**Tier 1** *In-field inspection or mentoring on 3 of the first 5 jobs completed by a new contractor participant.*

**Tier 2** *After the first 5 jobs are completed, 20% of the next 20 jobs would receive in-field inspections.*

**Tier 3** *After completion of their first 25 jobs, the Program Sponsor would begin inspecting jobs at a lower sampling rate while maintaining an overall rate that is above or equal to 5% of total completed jobs (minimum required sampling rate).*

*The specific sampling rate can vary as long as overall a 5% inspection rate is maintained. In this tiered approach, a Program Sponsor would typically not reduce a contractor's inspection rate until the contractor is making satisfactory progress toward meeting program standards. For example, a Program Sponsor may use the Tier 1 sampling rate for a new contractor beyond the contractor's first five jobs if the initial in-field inspections indicate significant difficulties in meeting program requirements.*

All on-site job inspections will occur after improvements have been installed. However, the on-site inspection may be scheduled during the contractor's test-out and prior to the job completion being reported to the Program Sponsor. On-site inspections will be made on a continuous basis and not completed in bulk (e.g., do not wait until a contractor has completed their first 20 jobs to start performing on-site inspections). Contractors with multiple offices or locations across wide geographic areas will be treated as separate participants for the purpose of determining their on-site inspection rate.

## 4.8 Visual Inspections and Diagnostic Tests

After completing the introductory discussion with the customer, the inspector will begin the required visual and diagnostic inspection. The visual and diagnostic inspections are derived from HPA requirements and required test-out diagnostic tests and inspections based on the installed scope of work (see Section 3.11.2 of this Guide).

The following list describes the areas the inspector will examine:

- Obvious missed opportunities for improving home performance that were not reflected in the HPA findings and recommendations.
- Proper installation of measures installed by the contractor.
- Verify test-out inspections and diagnostic results completed by the participating contractor.

Results of these visual and diagnostic inspections will be compared to the documentation (HPA summary report, recommended improvements, installed improvements, and test-out data) reported to the program by the contractor to evaluate their performance.

The inspector will not make judgments about the contractor's professional integrity or service to the customer. Any communication about the contractor's performance will always follow program protocols for contractor feedback and corrective action.

## 4.9 Customer Discussion

It is required that the on-site inspection begins with the inspector (acting on behalf of the Program Sponsor) introducing themselves, their organization affiliation, and their purpose: to verify the work meets program guidelines. The inspector should address any questions that the customer has about the inspection and determine if the customer has any specific concerns about the installed work. However, it is very important the inspector present a positive and objective attitude during all conversations with the homeowner.

### Optional Customer Discussion Items

*The inspector may interview the customer about their experience with their home performance consultant and/or contractor to gain valuable insights that may enhance the program. This discussion could include:*

- *Verifying that the customer received program information explaining the HPA process and what to expect from the program (if providing this program information is required by program).*
- *Confirming that the customer received an HPA report and recommendations for comprehensive improvements.*
- *Verifying the important pre-existing conditions (if appropriate) and installation of contracted measures.*
- *Verifying who installed the measures and when the improvements were completed.*
- *Inquiring as to whether the customer has utility bill data available, if the utility bills were requested by the contractor and, if so, whether the customer provided the utility bills to the contractor.*
- *Verifying completion of diagnostic test(s) before and after installation of measures (e.g. blower door test prior to beginning installation of shell measures and again after they were complete).*
- *Discussing the customer's satisfaction with: the participating contractor's assessment, the installation; and their overall experience with the HPwES program.*
- *Encouraging customers to refer friends and family to the program.*

## 4.10 Contractor Performance Record

It is required that the performance of contractors be evaluated as part of the on-site inspection process. Program Sponsors are required to develop a methodology for tracking a contractor's performance across their completed jobs. This methodology will be explained in the Program Sponsor's implementation plan.

## Optional Contractor Performance Methodology

### Scoring Protocol

*A scoring methodology may be helpful to document a contractor's performance history, provide contractor feedback, and provide an objective basis for increasing the on-site inspection rate or removing a contractor from HPwES program. Program Sponsors may develop a scoring protocol and submit to EPA and DOE as part of their implementation plan. An example of a job scoring protocol is in Section 4.4.3 of this guide.*

## 4.11 Customer Feedback

Receiving direct feedback from homeowners (participating contractor customers) is an important part of a HPwES QA program. Local Program Sponsors are required to have a mechanism for customers to provide feedback. Direct customer feedback can reduce risks and costs by helping to:

- Determine customer satisfaction.
- Check for program compliance.
- Identify high performing and low performing contractors.
- Focus marketing efforts.

### ***Optional Elements for Receiving Customer Feedback***

The National HPwES Program recommends the use of customer surveys as the principle means for collecting customer feedback. The local Program Sponsor can use these guiding principles when developing a customer survey or other customer feedback mechanism:

- Survey should be short and easy to do (5-10 questions maximum).
- Survey should be done routinely on every job or on an established sampling interval.
- Survey should be sent or performed directly by the Program Sponsor or independent representative.
- Survey should be sent directly back to the Program Sponsor or independent representative.
- Survey should include, at a minimum, questions on the following topics:
  - Customer satisfaction with the quality of the work done.
  - Was a HPA performed at the beginning of the job?
  - Customer satisfaction with the contractor who did the HPA and those who did the work.
  - How the customer found out about the HPwES Program.
- Survey should be anonymous, but allow the customer to provide contact information.
- Survey should include information on how to contact the program sponsor for additional feedback (phone number and/or e-mail).
- Survey results should be saved, compiled, and analyzed on a routine periodic basis.

For the best survey success (highest return rate), customers should be actively asked to provide feedback. This can be done by several methods:

- Calling customers to do the survey over the phone.
- Directly mailing or e-mailing customers the survey.
- Completing the survey during on-site inspections.

## 4.12 Contractor Follow-up

If either positive or negative feedback is received from a customer, that information will be recorded as part of a contractor's performance history. An on-site inspection will be scheduled if customer feedback warrants additional investigation to verify that the contractor is meeting program policies and procedures.

## 4.13 Contractor Feedback and Corrective Actions

This QA component of the HPwES program serves a dual purpose: first to ensure that contractors are meeting all program guidelines and technical standards and second to provide a mechanism for constructive feedback intended to improve their diagnostic capabilities, comprehensiveness and quality of work and customer relations. Contractor feedback is a key to maximizing program benefits, ensuring their persistence over time and providing a pathway to successful market transformation. Since HPwES programs are voluntary, it is recommended that QA communications be delivered in a positive spirit of assistance, education and continuous improvement.

Providing feedback to contractors on delivering effective HPA's, following technical standards, and installing improvements using best practices can be the most important and valuable service that a Program Sponsor can provide to new participating contractors. For this reason, it has been recommended to have a tiered sampling rate to assist new participants.

At the same time, contractor feedback on performance ensures a "level playing field" for all participating contractors, a feature that can be critical to retaining them as program participants, as well as critical brand protection for the National Program and local Program Sponsor.

Program Sponsors will formalize a process for managing contractors that do not meet program policies and procedures. This process will be clearly explained in a contractor participation agreement. When issues are discovered as a result of job reporting reviews, customer surveys, customer inquiries and concerns, or on-site inspections the first step is to contact the contractor and try to resolve the issue in a positive way. Because issues can not always be resolved in a constructive way it is best to document all QA findings and inform participating contractors of any significant or serious deficiencies and any corrective actions that need to be taken immediately. Examples of program job report review evaluation forms, on-site inspection scoring forms.

A Program Sponsor's process for evaluating and managing contractor performance will include the following:

- Written field reports followed by contractor performance feedback discussion.
- If required, corrective action work scopes and completion verification.

- Written notification of recurring, systematic or otherwise serious non-compliance with program policies, standards behavior or applicable laws or regulations.
- Provisions for disciplinary action, such as probation or suspension.

#### **Optional Corrective Actions**

##### ***Re-training and Mentoring***

*If contractor performance fails repeatedly, it is recommended that the program consider additional program action beyond the corrective action measures in the home. Additional training or job mentoring can be offered or required to address the deficiencies in performance, if deemed necessary by the QA inspector.*

##### ***Increased On-site Inspection Rate***

*It is also recommended that the program increase the on-site QA inspection sampling rate until the contractor demonstrates improvement.*

- Provisions for contractor to appeal a disciplinary action.

Maintaining the integrity of the program should be a Program Sponsors primary concern. Therefore, contractors who consistently fail to follow program policies and procedures, or existing laws and regulations should be removed from the HPwES Program. If this situation occurs Program Sponsors are strongly encouraged to make a good faith effort to work with the contractor to overcome any shortcomings confidentially. If a contractor is removed from the HPwES Program, the Program Sponsor must notify EPA and DOE of the action.

And for those contractors who participate fully and perform over 100 jobs in a calendar year, EPA/DOE will recognize them formally with as a Century Club award winner. Sponsors must approve that contractors are in good standing and have met all programmatic QA rigors.

## **4.14 Example Contractor Feedback and Corrective Action Levels**

The following list shows five potential scenarios from the QA process and contractor feedback and/or corrective actions that could be taken:

1. If there are no deficiencies in performance found and the contractor has provided comprehensive recommendations, fulfilled the work scope, and installed measures that meet all technical standards, it is recommended that the program provide positive feedback to the contractor on their performance. Exemplary performance should also be documented and, if consistent, it is suggested that contractors be recognized for their contributions to the program.
2. If the customer is satisfied with the work, program and technical standards have generally been met, but there are relatively minor deficiencies or opportunities to improve a contractor's performance such as a non-comprehensive set of recommendations in the homeowner report, evidence of repeatedly non-comprehensive job scopes (suggesting a lack of desire or success in selling comprehensive work) or an indication of minor inaccuracies in tests performed, then constructive feedback should be provided to the Contractor. This feedback would encourage

performance improvement in the future and to reinforce positive aspects of their job performance.

3. If the customer is satisfied with the work and program standards have generally been met, but deficiencies are present in the completeness, compliance with the contract or quality of the work performed, the QA inspector is required to contact the Contractor to discuss findings and corrective actions to be taken. The QA inspector will provide a work scope of corrective actions to the contractor and require the contractor to correct deficiencies within a specific period of time (recommended to not exceed 30 days). Contractor is required to provide written documentation with the customer's signature after completing the corrective actions. Program evaluates whether additional training or job mentoring is necessary to improve the contractor's performance and a higher on-site inspection rate is applied to future jobs.
4. If the customer is dissatisfied and the QA inspector verifies that deficiencies are present but are not an immediate health or safety threat to the home's occupants, the QA inspector is required to document findings and contact the Contractor / Field Supervisor to discuss the findings and corrective actions that will be taken. The QA inspector will provide a list of corrective actions to the contractor and require the contractor to correct deficiencies within a specific period of time (recommended to not exceed 30 days). Contractor is required to provide written documentation with the customer's signature after completing the corrective actions. The program evaluates whether additional training or job mentoring is necessary to improve the contractor's performance and a higher on-site inspection rate is applied to future jobs.
5. If any serious condition is found through the QA process (typically on-site inspection) that must be addressed immediately because of imminent health and safety threats, it is required that the QA inspector contact the contractor without delay and inform the homeowner of the condition. The QA inspector will take remedial action, as appropriate, which may include educating the homeowner, calling the fire department, or shutting off appliances. The QA inspector will ensure to the maximum extent possible that the condition has been addressed in the short term and provide the contractor with a list of corrective actions. The contractor will provide the program with written documentation that the customer has signed, to verify completion of the corrective actions. Program evaluates whether additional training or job mentoring is necessary to improve the contractor's performance and a higher on-site inspection rate is applied to future jobs.

## 4.15 Inspection Documentation

Program Sponsors are required to keep a record of all inspections performed including on-site QA inspection form(s), and any follow-up actions with the contractor and/or customer. Program Sponsors will document:

- On-site inspection report including contractor performance (e.g. scoring protocol).
- Follow-up with contractor, if required. This includes a record of any remedial actions, such as corrective measures in the home by the contractor; assignment of program technical or administrative assistance to address a particular contractor need; or, in more serious cases, program disciplinary actions. If corrective measures in the home are requested and installed, the program must receive additional documentation with appropriate test-out information and a customer signature.

## 4.16 Program Data Reporting Requirements

For data reporting you will use the Contractor Job and Reporting Tracking spreadsheet. This is an Excel spreadsheet specific to your sponsorship for providing EPA/DOE with your participating Contractors and corresponding performance numbers. If your internal tracking mechanisms make it difficult to use this particular format, please suggest alternatives.

- Request a blank Tracking Spreadsheet from [homeperformance@energystar.gov](mailto:homeperformance@energystar.gov).

## 4.17 Your Contractors

Utilize the Tracking Spreadsheet to:

1. Associate participating Contractors with your sponsorship.
2. Request My ENERGY STAR Account (MESA) including marketing resources access for participating Contractors.
3. Update participating Contractor information as needed.

To use the Tracking Spreadsheet:

- Enroll participating organizations/Contractors:
  - Add a row in the spreadsheet.
  - Enter the organization/contact information.
    - Needed information includes:
      - Organization name
      - Contractor first and last name
      - Contractor email

- Contractor phone (can be the same as organization phone)
- Organization address
- Organization phone
- Organization fax (if applicable)
- Organization website (if applicable)

Please note that Contractors cannot receive access to MESA and its resources without a valid email address.

- Provide your completed spreadsheet to the HPwES team
  - Email your spreadsheet to [homeperformance@energystar.gov](mailto:homeperformance@energystar.gov)
  - The HPwES team will update EPA's records to associate the Contractors with your sponsorship as well as grant MESA access.
- Future changes in information
  - Make the change within the appropriate cell in the spreadsheet
  - Highlight those cells in green that you have added/updated information.
  - Highlight cells in red when a Contractor is no longer participating in your sponsorship and MESA access needs to be removed.
  - Email your updated spreadsheet to [homeperformance@energystar.gov](mailto:homeperformance@energystar.gov)

## 4.18 Quarterly Reporting

Utilize the Tracking Spreadsheet to:

1. Provide reporting numbers on completed jobs and quality assurance inspections. Note: A completed job is one in which a test-in was performed, improvements/work was performed, and a test-out was performed.

**Please provide the contact information for the individual who is responsible for quarterly reporting. Some sponsors designate an employee, while other sponsors designate an employee of an implementation contractor. Providing quarterly reports is one of the most critical and fundamental metrics by which we track program success.**

To use the Tracking Spreadsheet:

- Add reporting numbers:
  - Enter the job and quality assurance numbers that the organization completed per quarter.
    - If there are multiple Contractors listed under one organization, list the quarterly numbers under the primary contact for that organization.
    - If an organization has had no activity, leave the field cell empty.
  - Report numbers on a quarterly basis.

- Report numbers in January to cover activity in October, November, and December.
- Report numbers in April to cover activity in January, February, and March.
- Report numbers in July to cover activity in April, May, and June.
- Report numbers in October to cover activity in July, August, and September.
- Email your updated Tracking Spreadsheet to [homeperformance@energystar.gov](mailto:homeperformance@energystar.gov).

Once reviewed and recorded, a confirmation email will be sent with an approved Spreadsheet to use for next quarter.

## 4.19 Annual Summary

Summary reports are due from all partners by December 15th. They should not exceed three pages, but should include an annual summary of contractor recruitment/training activities; quality assurance activities; marketing activities; and future program plans. Applications for ENERGY STAR Partner of the Year Awards can fulfill this obligation (see Section E). Unless otherwise requested, the annual summaries will be posted on our Sponsor Locator page inside the HPwES EPA website.

## 4.20 Active Status Requirements

ENERGY STAR is a partnership in which all program sponsors voluntarily agreed to report quarterly the number of completed jobs and completed quality assurance inspections. Quarterly reporting allows us to track program success, identify inactive partners, give newly participating contractors access to the resources on MESA, and recognize Century Club contractors. Without this information we are not able to recognize your program's achievement.

If a program does not report jobs on time, the program will be considered inactive. Home Performance with ENERGY STAR may attempt to contact the designated point of contact for maintaining the Tracking Spreadsheet or others in the sponsoring organization, but these outreach efforts are a courtesy to the sponsor and are not a precondition to listing an organization as inactive.

Once inactive, an organization will be removed from the ENERGY STAR website, and it must cease using the Home Performance with ENERGY STAR mark in print and on its website.

Appendix A  
**HPwES Partnership Agreement**

---

# Program Sponsor Partnership Agreement For Home Performance with ENERGY STAR®



Return this form to ENERGY STAR:  
HomePerformance@EnergyStar.gov  
US EPA (Mail Code 6202J)  
1200 Pennsylvania Ave, NW  
Washington, DC 20460  
FAX: 202-343-2200

**Eligible Organizations:** Organizations that implement a residential home improvement program that meets the criteria for Home Performance with ENERGY STAR, a joint U.S. Environmental Protection Agency and U.S. Department of Energy program.

Through this agreement, ENERGY STAR and \_\_\_\_\_ (hereafter "the Partner") agrees to work in cooperation to promote Home Performance with ENERGY STAR under the program name \_\_\_\_\_ (hereafter "the program").

Organization Name: \_\_\_\_\_  
Contact Name: \_\_\_\_\_ Email: \_\_\_\_\_  
Address: \_\_\_\_\_ City/State/Zip: \_\_\_\_\_  
Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_ Web Site: \_\_\_\_\_  
Major Metro Area(s) Served: \_\_\_\_\_

## Partner Commitments

The following are the terms of the ENERGY STAR Partnership Agreement for Home Performance with ENERGY STAR (HPwES) Program Sponsors. Guidance on this agreement is available at: [www.energystar.gov/hpwessponsors](http://www.energystar.gov/hpwessponsors).

- A. ENERGY STAR Brand Requirements** –The partner agrees to comply with ENERGY STAR branding requirements as follows:
1. Comply with current ENERGY STAR Identity Guidelines, (available at [www.energystar.gov](http://www.energystar.gov)) which describe how the ENERGY STAR marks, marketing graphics, and name may be used. The Partner is responsible for adhering to these guidelines and for ensuring that its authorized representatives, such as implementation contractors, advertising agencies, and participating contractors are also in compliance. In order for the Partner to ensure compliance, the Partner must maintain a current list of authorized representatives which ENERGY STAR may request to verify compliance.
  2. The Partner is responsible for the proper use of the ENERGY STAR marks, as well as the proper use of the Home Performance with ENERGY STAR marketing graphic used by participating program contractors.
  3. Feature the appropriate ENERGY STAR marks(s) on Partner's Web site and in other promotional materials. To link to the Partner on the ENERGY STAR web site, the Partner must first comply with the ENERGY STAR Web Linking Policy found on the ENERGY STAR Web site.
  4. Submit all Web site designs, and marketing materials, developed for the Partner's Home Performance with ENERGY STAR promotions to ENERGY STAR (using the address listed above) for review to ensure accuracy of ENERGY STAR marks used and consistency of the ENERGY STAR message. The Partner will allow a minimum of five full working days for ENERGY STAR to review and approve Web site designs and marketing materials.
  5. Provide Home Performance with ENERGY STAR training to all employees who provide customer service. This training shall include: a) a description of Home Performance with ENERGY STAR, b) tips for answering questions about Home Performance with ENERGY STAR, and c) information on the economical and environmental benefits of energy efficiency.
  6. Notify ENERGY STAR (using the address listed above) of a change in the designated responsible party or contacts for this agreement within 30 days.

**B. Program Plan Requirements** – The Partner agrees to develop and submit a Program Plan to HPwES as follows:

1. Develop and submit a program plan to implement HPwES using the Program Plan Guidance available at [www.energystar.gov/hpwessponsors](http://www.energystar.gov/hpwessponsors).
2. After the Partner submits a program plan along **with a signed Partnership Agreement**, ENERGY STAR will review them for approval. Once approved, the Partner will be listed as an ENERGY STAR Partner.
3. The Program Plan shall be updated annually to reflect the current practices of the program.

NOTE: Help on Program Plan development is available directly from HPwES support staff. To request assistance contact [HomePerformance@EnergyStar.gov](mailto:HomePerformance@EnergyStar.gov).

**C. Program Requirements** - The Partner agrees to promote whole-house evaluation and building science-based energy improvements to existing homes. The goal of HPwES is making cost-effective, energy-efficient improvements to homes. The program shall consist of the following components:

1. **Home Performance Assessment or “Test-in”.** An energy specialist trained in building science principles will perform a Home Performance Assessment (HPA) which will include a visual and diagnostic energy inspection of the home using a form standardized for the program. See HPwES Sponsor Guide at [www.energystar.gov/hpwessponsors](http://www.energystar.gov/hpwessponsors) for HPA details.
2. **Inspection Results and Recommended Improvements.** Improvements to the home will be recommended based on the initial inspection and homeowner interview. The homeowner will be given a review of the findings and provided with a summary report including:
  - a. A summary of HPA findings
  - b. Improvement recommendations
  - c. An estimation of costs for the improvements
  - d. An estimation of energy savings from implementing the recommendations.

NOTE: Recommendations for improvements will be on a fuel-neutral basis.

NOTE: See HPwES Sponsor Guide at [www.energystar.gov/hpwessponsors](http://www.energystar.gov/hpwessponsors) for details.

3. **Installation of measures.** The program will help homeowners identify qualified contractors able to implement the HPA recommendations. This can either be the participating contractor providing the inspection and recommendations or other contractors qualified in home energy inspection, building science, and proper installation techniques. All installed measures will be in accordance with industry best practices. See HPwES Sponsor Guide at [www.energystar.gov/hpwessponsors](http://www.energystar.gov/hpwessponsors) for details.
4. **Post-Installation Tests or “Test-out”.** Documentation of improvements and diagnostic testing (test-out) will be used to verify the performance of installed measures as well as to meet health and safety standards. A summary of the final tests will be given to the homeowner. The results may be in the form of a “Summary Certificate”. See the HPwES Sponsor Guide at [www.energystar.gov/hpwessponsors](http://www.energystar.gov/hpwessponsors) for details.

**D. Program Quality Assurance (QA) Requirements** –The Partner, either directly or through its implementation contractor, will administer a quality assurance (QA) program that meets the following minimum requirements (See HPwES Sponsor Guide at [www.energystar.gov/hpwessponsors](http://www.energystar.gov/hpwessponsors) for additional guidance on program QA):

1. All participating contractors will agree to the terms of a participation agreement established by the Partner. The terms of the contractor participation agreement will include a requirement to comply with the current ENERGY STAR Identity Guidelines and properly use the HPwES logo. All jobs performed by contractors who agree to these requirements and sign the agreement (i.e. “participating contractor”) must be reported to the Partner after a Home Performance Assessment is completed and some recommended improvements are completed.
2. All job reports will be reviewed by the Partner based on protocols established by the Partner to identify quality of service problems associated with jobs completed by participating contractors. If needed, the Partner may follow-up with a contractor or conduct an on-site inspection to verify the quality of the service provided.

3. In addition to the above, the Partner will conduct on-site inspections, at a set inspection rate, of the work of all participating contractors. The minimum on-site job inspection rate is set at 5% (1 in every 20 jobs).  
NOTE: It is recommended that the Partner establish an adjustable on-site inspection rate for contractors based on job experience and performance. This inspection rate reduces as the contractor gains experience in the program and as on-site inspections show the contractor is performing well. Contractors may drop down a tier if performance slips. Here is the recommended set of tiers:
  - a. Tier 1 Contractor - The first 3-5 jobs will be inspected on-site or mentored.
  - b. Tier 2 Contractor - 20% of the next 20 jobs are inspected on-site (4 out of 20).
  - c. Tier 3 Contractor - 5% of all jobs inspected on-site (1 in 20).
4. All Partners are required to have a systematic customer feedback mechanism which allows customers to provide feedback directly to the Partner. Negative feedback must be addressed.
5. All Partners must record and track their inspections, rate of inspections, findings, and corrective actions. Records must be available for review when requested.

NOTE: HPwES is a voluntary program and QA communications with participating contractors should be delivered in a positive spirit of assistance, education and continuous improvement.

NOTE: Partners may authorize an independent entity to review reports, initiate customer feedback, follow-up on problems, perform on-site inspections, and document actions.

**E. Program Data Reporting Requirements** –The Partner, either directly or through its implementation contractor, will provide ENERGY STAR (using the address listed above) with data to assist in determining the effects of the program and to ensure that QA is being performed by all Partners. (See HPwES Sponsor Guide at [www.energystar.gov/hpwessponsors](http://www.energystar.gov/hpwessponsors) for additional guidance on data reporting requirements.)

1. Provide to ENERGY STAR, on a quarterly basis and in electronic format, the following minimum data:
  - a. Number and names of participating contractors
  - b. Number of completed jobs per contractor
  - c. Number of on-site inspections completed per contractor
 This information is due by April 30th for the first quarter, July 31st for the second quarter, October 31st for the third quarter, and January 31st for the fourth quarter.

**\*NOTE: Partners that do not submit quarterly reports will be considered inactive and removed from the ENERGY STAR web site. In addition, to remain active, the Partner must report a minimum of 50 jobs per year. A new program has 2 years to meet this requirement.**

2. In addition to quarterly reporting, an annual summary report (**due by December 15th for the current calendar year**) is required. This annual report will include at a minimum:
  - a. An annual summary of contractor recruitment/training activities,
  - b. Quality assurance activities,
  - c. Marketing activities, and
  - d. Future program plans.
 This report should be less than three pages and can be used in a Partner's application for an ENERGY STAR Award.

---

#### **ENERGY STAR Commitments to Partners:**

1. Increase awareness of HPwES by distributing key messages on the benefits of a whole-house approach to improving energy efficiency.
  2. Provide current HPwES news, information, and reference documents (via the ENERGY STAR Web site, Hotline, e-mail or other means).
  3. Provide ENERGY STAR Partners with public recognition for their involvement in HPwES.
  4. Respond swiftly to any Partner request for information or clarification on HPwES policies.
-

---

**General Terms and Disclaimers:**

1. The Partner will not construe, claim or imply that its participation in ENERGY STAR constitutes federal government approval, acceptance, or endorsement of anything other than the Partner's commitment to ENERGY STAR. Partnership does not constitute federal government endorsement of the Partner or its services.
2. The Partner understands that the activities it undertakes in connection with ENERGY STAR are voluntary and not intended to provide services to the federal government. As such, the Partner will not submit a claim for compensation to any federal agency.
3. The Partner and ENERGY STAR will assume good faith as a general principle for resolving conflict and will seek to resolve all matters informally, so as to preserve maximum public confidence in ENERGY STAR.
4. This agreement is voluntary and can be terminated by either party at any time for any reason. Failure to comply with any of the terms of this partnership agreement can result in its termination. Termination of the partnership will result in the termination and cessation of access to the benefits of ENERGY STAR, including allowance to use any ENERGY STAR marks.
5. ENERGY STAR will actively pursue resolution of noncompliance related to the use of the ENERGY STAR marks.

---

**To be completed by Partnering Organization**

Representative with authority to commit partnering organization to the terms of this agreement

(printed name): \_\_\_\_\_

Title: \_\_\_\_\_ E-mail: \_\_\_\_\_ Phone \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

---

**To be completed by ENERGY STAR representative:**

Jonathan Passe, U.S. EPA

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

---

Appendix B  
**Program Implementation Plan Template**

---

## Home Performance with ENERGY STAR Program Plan Template

Use this Program Plan Template to develop an implementation plan. EPA and DOE are available to help answer questions and provide guidance. Consult our HPwES Sponsor Fact sheet and Sponsor Guide for detailed guidance. Fill out and submit your Program Plan with a signed HPwES Partnership Agreement. Please allow HPwES two weeks to review your plan. Once your plan is approved you will be listed on our website and receive an email with My Energy Star Account (MESA) instructions to access our in-kind supporting material. We reserve the right to decline sponsorship if we feel there is inadequate resources and planning to initiate a HPwES program, and will strategically advise you to what needs to be addressed.

Program Sponsor						
Organization Type	State Government	City or county Government	Public Utility	Non-Profit Organization (chartered by state to implement energy efficiency programs)		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
<b>Budget</b>						
Source of funding	System Benefit Charge	Grant	Rate Recovery	Other		
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Provide background information about the source						
Budget Category (in \$)	Pilot Phase*	Year 1	Year 2	Year 3	Year 4	Year 5
Management	\$	\$	\$	\$	\$	\$
Program Development	\$	\$	\$	\$	\$	\$
Contractor Recruitment	\$	\$	\$	\$	\$	\$
Training/Certification	\$	\$	\$	\$	\$	\$
Mentoring	\$	\$	\$	\$	\$	\$
Marketing	\$	\$	\$	\$	\$	\$
Contractor Job Incentives	\$	\$	\$	\$	\$	\$
Homeowner Incentives	\$	\$	\$	\$	\$	\$
Infield Inspections (QA)	\$	\$	\$	\$	\$	\$
Evaluation	\$	\$	\$	\$	\$	\$
Total	\$	\$	\$	\$	\$	\$
<b>What goals do you plan to achieve?</b>						
Contractor Participation Goal (# contractors)						
Job Completion Goal (# of jobs)						
Electric Savings Goal (kWh)						
Peak Electric Savings Goal (kW)						
Natural Gas Savings Goal (therms)						
What metropolitan area or service territory will be served by the program?						
Why did you decide to partner with ENERGY STAR to sponsor a HPwES program?						

What current or past residential energy efficiency programs have been implemented in this market? By whom?

What is the average electricity and natural gas rate?	Electricity	< 8 cents/kWh <input type="checkbox"/>	8-10 cents/kWh <input type="checkbox"/>	>10 cents/kWh <input type="checkbox"/>
	Natural Gas	< 1.25 \$/therm <input type="checkbox"/>	1.25- 1.75 \$/therm <input type="checkbox"/>	>1.75 \$/therm <input type="checkbox"/>

**PROGRAM DELIVERY**

What elements of the program will be implemented by the program sponsor or implementation partners?

Implementing Partners	Organization Name
Group A	
Group B	
Group C	
Group D	

Program Elements	Sponsor	Implementation Partners			
		Group A	Group B	Group C	Group D
Contractor Participation	<input type="checkbox"/>				
Recruitment	<input type="checkbox"/>				
Training	<input type="checkbox"/>				
Certification	<input type="checkbox"/>				
Mentoring	<input type="checkbox"/>				
Consumer Financing	<input type="checkbox"/>				
Consumer Awareness/Marketing	<input type="checkbox"/>				
Quality Assurance	<input type="checkbox"/>				
Program Evaluation	<input type="checkbox"/>				

What is your schedule for implementing the program?

Activity	Schedule																			
	Year 1				Year 2				Year 3				Year 4				Year 5			
	Quarter				Quarter				Quarter				Quarter				Quarter			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Identify/recruit contractors																				
Train/equip contractors																				
Launch marketing campaign																				
Implement quality assurance protocols																				
Implement results tracking																				
Explore program expansion																				
Program Evaluation																				

Which contractor delivery model will you emphasize? Contractor  Consultant  Hybrid  Other  (explain)

What groups, if any will be targeted / excluded? (e.g. income qualified, utility customers, city residents)

Please explain how you plan to recruit contractors to participate in the program.

Attach a copy of the protocols contractors will follow to complete a comprehensive energy audit. This should include a description of any mandatory test-in and test-out procedures (e.g., blower door and combustion safety testing) as well as a summary of test-in and test-out forms, reports or other materials that are required to comply with your program's guidelines.

Attach a copy of your contractor participation agreement.

What software or other method will be used to estimate energy savings?

**QUALITY ASSURANCE**

Explain the steps you plan to take to ensure participating contractors deliver comprehensive energy audits and install quality improvements.

How will contractors report their program activity?

Will you offer an incentive for contractor reporting and if so, please explain?

How will completed jobs be reviewed (file and in-field)?

How will customer satisfaction be measured?

How will you help contractors represent the Home Performance with ENERGY STAR program accurately (e.g., homes are not qualified ENERGY STAR homes, and contractors are not certified by EPA or DOE)? How will you evaluate their actions?

Attach a process diagram showing how contractors that fail to meet program standards will be identified, monitored, re-trained, sanctioned, or removed from the program.

<b>MARKETING STRATEGY</b>	
What is the name of the program?	
What is the proposed URL for the program web site?	
What marketing strategies will you employ to increase consumer awareness of HPwES?	
Attach examples you plan to use, if developed.	
Attach example of homeowner certificate, if planned.	
What incentives (including financing) will you offer to motivate consumers to participate?	
How will you measure consumer demand for the program (e.g., number of calls, number of website visitors, duration of website visits)?	
Please attach a copy of your plan for managing consumer inquiries about the program (e.g., workflow to handle calls and emails).	