



Energy-Saving

HOMES, BUILDINGS,
& MANUFACTURING

U.S. DEPARTMENT OF
ENERGY | Energy Efficiency &
Renewable Energy



2014 ACI National Home Performance Conference **Rolling-Out Home Performance with ENERGY STAR**

v1.5: Consistency & Clarity

April 29, 2014

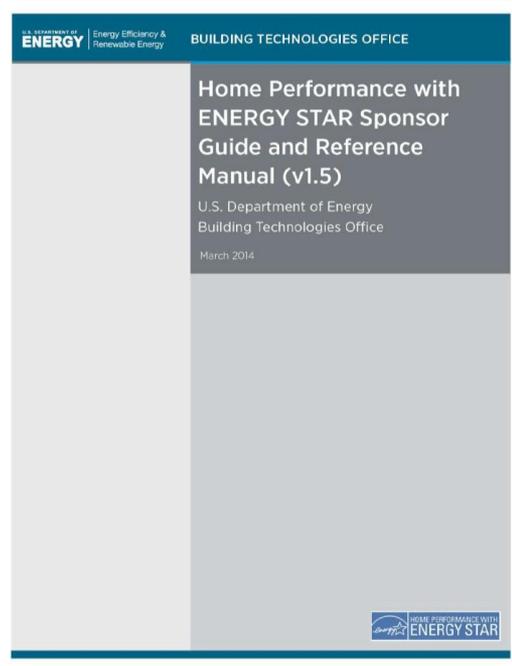
3:30 - 5:00 PM

Ely Jacobsohn, DOE, HPwES Program Manager

Caroline Hazard, SRA, Communications & Outreach Lead

Jason Bogovich, SRA, Regional Account Manager

Agenda



I. Introduction

II. Historical Perspective for HPwES

III. Sponsor Guide and Reference Manual (v1.5)

- v1.5 is now available
- New resources and tools
- v1.5 Sections: Interactive Audience Overview
- Recap of the major changes for HPwES requirements?
- Next Steps

By attending this session, participants will:

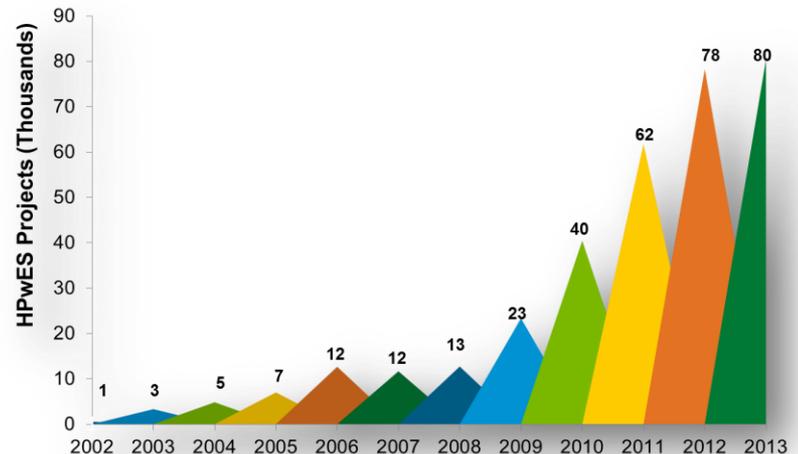
1. Learn about the requirements of the revised HPwES Sponsor Guide (v 1.5)
2. Discover tips and tools available from HPwES to support implementation of HPwES v1.5 requirements
3. Exchange ideas on recommended approaches and lessons learned in implementing v 1.5

Home Performance with ENERGY STAR 2002-2014

Over 10 years of success!

Achievements

- Completed over 330,000 projects since 2002
- 48 Program Sponsors nationwide completed over 80,000 projects in 2013
- Q4 of 2013 was the best quarter ever for HPwES (*over 23,000 projects*)
- Over 2,100 participating contractors
- Added 8 new Sponsors since 2012
- Helped develop 3 regional collaboratives with SEEA, SWEEP and MEEA



Sponsor Guide and Reference Manual (v1.5)

Released in March! Go to: energystar.gov/hpwes_sponsors

Includes 7 Sections and Appendices

Section 1: Use and Management of the HPwES Mark

Section 2: Program Design and Development

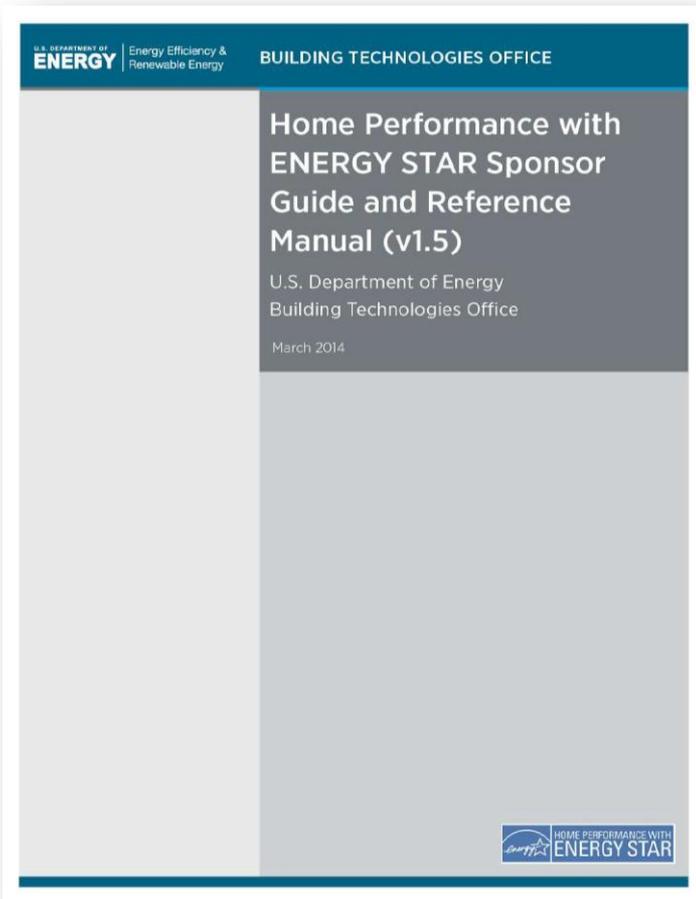
Section 3: Workforce Development and Support

Section 4: The Assessment

Section 5: The Project Installation

Section 6: Quality Assurance

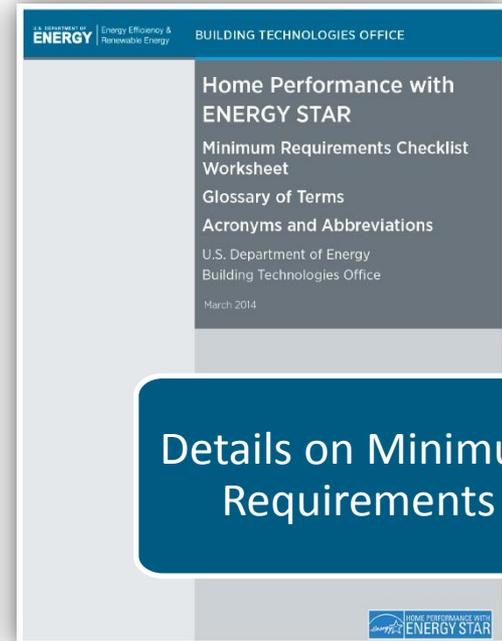
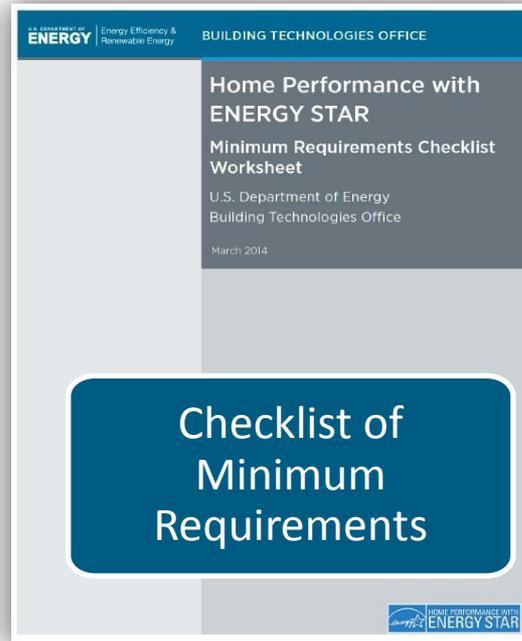
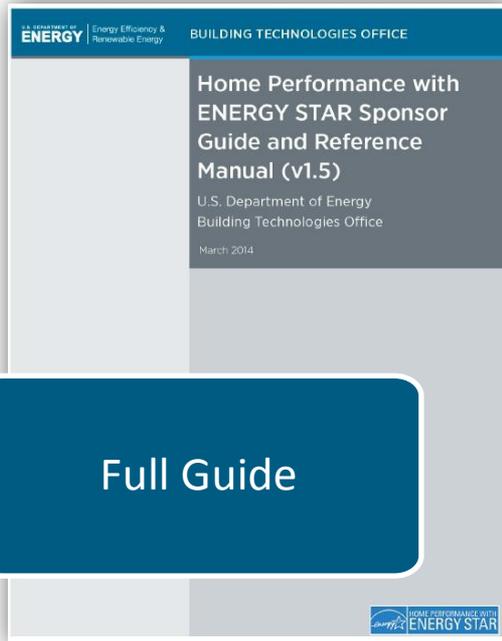
Section 7: Tracking and Reporting



Updated Sponsor Guide: Clarity and Consistency

Purpose:

- Help current and prospective Sponsors plan, develop and implement HPwES programs
- Outlines what is required as well as recommended methods to meet those requirements
- Provide relevant, easily accessible guidance for new and current Sponsors



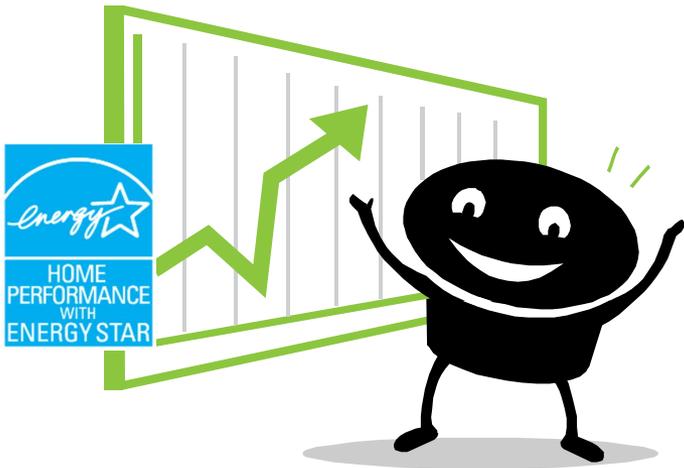
Overarching Principles



Be Customer Friendly: Deploy products and services that address homeowner needs, improve comfort and safety, and reduce wasted energy.

Offer Streamlined Business Protocols: Employ administrative procedures that minimize the burden of participation for contractors and homeowners.

Be Business Friendly: Support contractor services that can effectively engage customers, allow their businesses to sustain profitability, and deliver quality work that meets DOE's minimum HPwES Program requirements.



How to Use the Sponsor Guide

New Tools and Resources

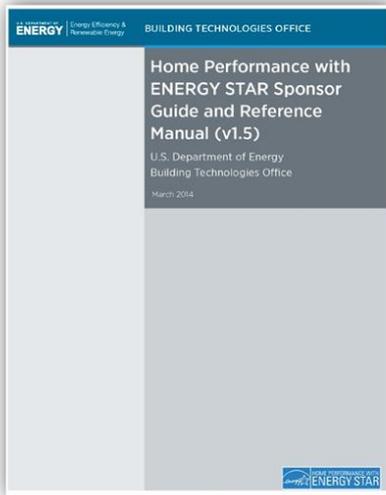


Each section includes the following elements:

- **Checklist of Minimum Requirements** specific to each section's topic
- **Minimum Requirements** in narrative, with specifications for compliance
- **Recommended Approaches**—with optional guidance for implementation and suggested strategies based on lessons learned from successful residential programs nationwide.

The Sponsor Guide also includes Appendices with the following items:

- A. Minimum Requirements Checklist Worksheet
- B. Home Performance with ENERGY STAR Partnership Agreement
- C. Home Performance with ENERGY STAR Implementation Plan Template
- D. The Guidelines for Home Energy Professionals
- E. Energy Savings Calculations
- F. Quality Management System (QMS) Based Quality Assurance Overview



DOE offers Sponsors and their networks a set of online tools and resources. Visit the Sponsor Resources section of the HPwES website to access these materials.

Appendix A: Minimum Requirements Checklist Worksheet

Use this checklist to meet the requirements

Appendix A: Minimum Requirements Checklist Worksheet - Normative

Appendix A

Minimum Requirements Checklist Worksheet – Normative

Minimum Home Performance with ENERGY STAR Program Requirements Checklist:
Use and Management of the Home Performance with ENERGY STAR Mark

1.1 Comply with current *ENERGY STAR Brand Book*

Status: Yes Notes:
 No

1.2 Maintain a list of authorized representatives, including participating contractors, who may use the brand and mark in compliance with the *ENERGY STAR Brand Book*

Status: Yes Notes:
 No

1.3 Use the Home Performance with ENERGY STAR name and mark to inform homeowners that services being rendered by participating contractors under the Sponsor's program follow the HPwES approach

Status: Yes Notes:
 No

1.4 Establish a process to ensure your business partners and participating contractors comply with the *ENERGY STAR Brand Book*

Status: Yes Notes:
 No

1.5 Send marketing materials, including web designs, to your HPwES Account Manager for compliance review; HPwES Account Managers require a minimum of five business days to review materials

Status: Yes Notes:
 No

1.6 Provide training about the value and minimum requirements of HPwES to all employees who provide customer service

Status: Yes Notes:
 No

64 Home Performance with ENERGY STAR Sponsor Guide and Reference Manual (v1.5)

- **Appendix A** is an interactive checklist document that walks potential/current Sponsors through the HPwES requirements
- Includes all 7 sections of the Sponsor Guide
- Provides a notes section
- Was developed to help potential/current Sponsors



Future Sponsor Guide Updates



- Will be maintained and updated over time
- Policy changes will be subject to a public comment period
- Recommended Approaches, online tools and resources will be released as they become available
- **Sponsors and stakeholders are encouraged to contribute examples of successful approaches, as well as materials, for inclusion in the Sponsor Guide**

Section 1: Use and Management of the Home Performance with ENERGY STAR Mark

Trusted and Widely Recognized Name and Symbol

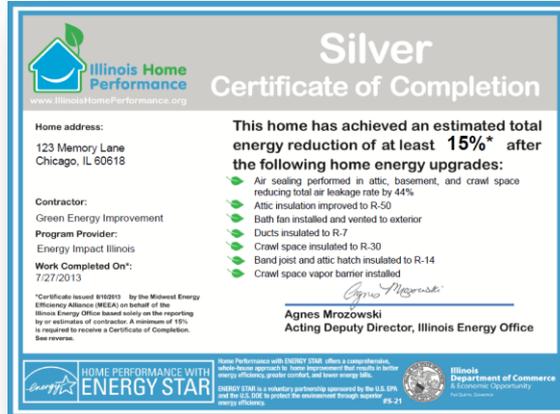
Minimum Home Performance with ENERGY STAR Program Requirements Checklist: *Use and Management of the Home Performance with ENERGY STAR Mark*

- 1.1 Comply with current *ENERGY STAR Brand Book*
- 1.2 Maintain a list of authorized representatives, including participating contractors, who may use the brand and mark in compliance with the *ENERGY STAR Brand Book*
- 1.3 Use the Home Performance with ENERGY STAR name and mark to inform homeowners that services being rendered by participating contractors under the Sponsor's program follow the HPwES approach
- 1.4 Establish a process to ensure your business partners and participating contractors comply with the *ENERGY STAR Brand Book*
- 1.5 Send marketing materials, including web designs, to your HPwES Account Manager for compliance review; HPwES Account Managers require a minimum of five business days to review materials
- 1.6 Provide training about the value and minimum requirements of HPwES to all employees who provide customer service
- 1.7 Notify your HPwES Account Manager of any change in the designated responsible party or contacts for the Sponsor's program



Section 1: Use and Management of the Home Performance with ENERGY STAR Mark (cont'd)

Highlights of Recommended Approaches



- Managing the Use of the Mark
- General Use of the Home Performance with ENERGY STAR Name and Mark
- Use of Certificates to Document Projects
- Recognition Opportunities



ENERGY STAR Awards



US DOE Housing Innovation Awards



Century Club Contractor Award

Section 2: Program Design and Development

Minimum Home Performance with ENERGY STAR Program Requirements Checklist: *Program Design and Development*

- 2.1 Review and sign a Home Performance with ENERGY STAR Partnership Agreement
- 2.2 Complete and annually update a Home Performance with ENERGY STAR Implementation Plan
- 2.3 Provide quarterly and annual data on the status of Home Performance with ENERGY STAR Program implementation

Highlights of Recommended Approaches

- **Setting Goals and Objectives**
- **Program Administration and Costs**
- **Addressing Program Cost-Effectiveness** (*see Appendix E*)
- **Performance and Prescriptive Approaches**
- **Delivery Models** (*Consultant vs. Contractor*)
- **Developing a Home Performance with ENERGY STAR Marketing Plan**
- **Considerations for Incentive Design** (*Do the Research/Gather Input/Incentive for desired outcome/Make it easy/Take notes*)
- **Continuous Improvement** (*Pre-and-post energy savings/Effectiveness of program procedures and operations/Customer satisfaction/Status of workforce development/Market impact and awareness/Market sustainability*)



*Sponsors and home performance stakeholders can find more information in the **Better Buildings Residential Program Solution Center**.*

Better Buildings Residential Program Solution Center

Being Launched tonight at ACI!!!



Better Buildings Residential Program Solution Center

EEEE » BTQ » Better Buildings Neighborhood Program » Solution Center Home »

Solution Center Home
About
Handbook Index
Glossary

BROWSE BY:
Program Components
Program Design Phases
Content Types

The Better Buildings Residential Program Solution Center is a repository of lessons, resources, and knowledge for residential energy efficiency programs. It is intended to help program administrators and their partners plan, implement, manage, and evaluate their programs.

Explore Program Components
Information in the Residential Program Solution Center is organized around the primary functions typically overseen by a residential energy efficiency program administrator, termed "program components" throughout this tool. Select a program component below.

Look Across Program Design Phases
If you are not interested in jumping into a specific program component, you can explore the same information by choosing one of the four major phases in a program's lifecycle. Each "design phase" includes handbooks from the six program components to help you and your partners strategize, plan, implement, and evaluate your program. Select a program design phase below.

MY FAVORITES
Finance Favorites
6 items
Other Favorites
1 items
+ New Favorites Folder

RECENTLY UPDATED RESOURCES

- [Contractor Engagement & Workforce Development – Make Design Decisions](#)
- [Contractor Engagement & Workforce Development – Communicate Impacts](#)
- [Evaluation & Data Collection – Develop Resources](#)
- [Program Design & Customer Experience – Develop Evaluation Plans](#)
- [California Energy Efficiency Finance Project – Data Working Group Report](#)

MOST POPULAR HANDBOOKS

- [Marketing & Outreach – Overview](#)
- [Market Position & Business Model – Overview](#)
- [Financing – Overview](#)
- [Program Design & Customer Experience – Overview](#)
- [Market Position & Business Model – Assess the Market](#)

Better Buildings
U.S. DEPARTMENT OF ENERGY

Better Buildings Residential Network



Membership Form

BETTER BUILDINGS RESIDENTIAL NETWORK

Type of Organization (Check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Consultant/Advisor | <input type="checkbox"/> Manufacturer |
| <input type="checkbox"/> Contractor/Trade ally | <input type="checkbox"/> Nonprofit organization |
| <input type="checkbox"/> Financial institution | <input type="checkbox"/> Program administrator or implementer |
| <input type="checkbox"/> Foundation | <input type="checkbox"/> Retailer |
| <input type="checkbox"/> Government - Federal | <input type="checkbox"/> University |
| <input type="checkbox"/> Government - Local | <input type="checkbox"/> Utility |
| <input type="checkbox"/> Government - State | <input type="checkbox"/> Other: _____ |

Are You Already a DOE Partner or Sponsor? (Check if applicable)

- | | |
|--|---|
| <input type="checkbox"/> Better Buildings Alliance Member | <input type="checkbox"/> Building America Team Member |
| <input type="checkbox"/> Better Buildings Challenge Partner or Ally | <input type="checkbox"/> Home Energy Score Partner |
| <input type="checkbox"/> Better Buildings Neighborhood Program Grant Recipient | <input type="checkbox"/> Home Performance with ENERGY STAR (HPwES) Participating Contractor |
| <input type="checkbox"/> Better Buildings Neighborhood Program Partner | <input type="checkbox"/> Home Performance with ENERGY STAR (HPwES) Sponsor |

Role in the Marketplace (Check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> Hands-on, in buildings | <input type="checkbox"/> Conduct research |
| <input type="checkbox"/> Program design and implementation | <input type="checkbox"/> Involved in training |
| <input type="checkbox"/> Develop or distribute products and materials | <input type="checkbox"/> Advise others |
| | <input type="checkbox"/> Other: _____ |

Peer Groups of Interest (Check all that apply)

- | | |
|--|---|
| <input type="checkbox"/> Workforce/Business Partners | <input type="checkbox"/> Financing and Revenue |
| <input type="checkbox"/> Marketing and Outreach | <input type="checkbox"/> Multifamily/Low-Income Housing |
| <input type="checkbox"/> Data and Evaluation | <input type="checkbox"/> Program Sustainability |

How did you hear about the Better Buildings Residential Network?

- | | |
|---|---|
| <input type="checkbox"/> Newsletter:
<input type="checkbox"/> Better Buildings newsletter
<input type="checkbox"/> Other DOE newsletter:
_____ | <input type="checkbox"/> From a Residential Network Member (please list member's name):
_____ |
| <input type="checkbox"/> Other newsletter:
_____ | <input type="checkbox"/> Website:
<input type="checkbox"/> Better Buildings Neighborhood Program
<input type="checkbox"/> Other:
_____ |
| <input type="checkbox"/> Other:
_____ | <input type="checkbox"/> Word of mouth
_____ |

May we use your company logo on websites and printed material for reports and presentations?

- Yes No If yes, please send a logo with this membership form.

What topics would you like to see the Residential Network address? _____

Learn more at betterbuildings.energy.gov/bbm



The Better Buildings Residential Network connects energy efficiency programs and partners to share best practices and learn from one another to increase the number of homes that are energy efficient.

Residential Network membership is open to all organizations that are committed to accelerating the pace of home energy upgrades. Members include:

- Businesses
- Federal, state, and local governments
- Financial institutions
- Home Performance with ENERGY STAR Sponsors
- Nonprofit organizations
- Program administrators and implementers
- Universities
- Utilities



ENERGY STAR Participation Form

OMB Control No. 2060-0528
Approval expires 02/29/2016



ENERGY STAR® Participation Form:

Partner Name: _____

Date: _____

Partner will participate in the program(s) checked below.

Promote ENERGY STAR as an Energy Efficiency Program Sponsor* in the:

Consumer Product Market
 Residential New Construction Market
 Existing Commercial Buildings Market
 New Commercial Buildings Market
 Industrial Market

*Such as states, utilities, or regional program coordinators

Help Clients Improve Their Energy Performance Commercial and Industrial Service and Product Providers, supporting the:

Existing Commercial Buildings Market
 New Commercial Buildings Market
 Industrial Market

Offer Consumer Financing*

Mortgages for Energy-efficient Homes
*Please refer to the ENERGY STAR Partnership Agreement for Lenders.

Label and Promote ENERGY STAR Qualified Homes*

Home Builders/Developers
*Please refer to the ENERGY STAR Partnership Agreement for Home Builders and Verification Organizations.

Home Energy Raters
*Please refer to the ENERGY STAR Partnership Agreement for Home Builders and Verification Organizations.

Home Performance with ENERGY STAR

Sponsor Home Performance with ENERGY STAR Program

Promote ENERGY STAR Certified Products

Retailers/E-tailers
 Buying Groups

Deploy ENERGY STAR Qualified Set-top Boxes

Cable, Satellite, and Telephone Service Providers

Label and Promote ENERGY STAR Certified Products

Residential Appliances

Clothes Washers
 Dishwashers
 Refrigerators and/or Freezers
 Room Air Conditioners

Commercial Food Service Equipment

Commercial Dishwashers
 Commercial Fryers
 Commercial Griddles
 Commercial Hot Food Holding Cabinets
 Commercial Ice Machines
 Commercial Ovens
 Commercial Refrigerators and Freezers
 Commercial Steamers

Through our partnership with ENERGY STAR, we also commit to improve the energy performance of our own facilities.

EPA Form No. 5900-33 ENERGY STAR Participation Form 6

Label and Promote ENERGY STAR Qualified Homes*

Home Builders/Developers
 Home Energy Raters

**Please refer to the ENERGY STAR Partnership Agreement for Home Builders and Verification Organizations.*

Home Performance with ENERGY STAR

Sponsor Home Performance with ENERGY STAR Program

Promote ENERGY STAR Certified Products

Retailers/E-tailers
 Buying Groups

Revised Implementation Plan



Home Performance with ENERGY STAR Implementation Plan Template for Prospective Program Sponsors



Home Performance with ENERGY STAR® (HPwES) is a public-private voluntary partnership program designed to turn building science-based recommendations into solutions for improved, energy efficient homes. The U.S. Department of Energy (DOE), in coordination with the U.S. Environmental Protection Agency (EPA), offers HPwES as a programmatic platform designed to systematically enhance home performance for healthier and more comfortable living environments, enhanced durability of the homes' structures and systems, and improved energy savings for the homeowners.

Home Performance with ENERGY STAR, like all ENERGY STAR programs, facilitates market transformation by increasing the availability and adoption of energy-efficient goods and services. HPwES is based on the nationally recognized ENERGY STAR brand and is grounded in a building science driven approach to home improvement that promotes consumer confidence and results in measurable energy savings. Through HPwES, Program Sponsors and stakeholders support an infrastructure of qualified contractors who engage customers, deliver quality work, and drive the market forward for HPwES projects and related services.

Eligible organizations include: Utilities; national, regional, state, or local government entities; or other organizations involved in coordinating and/or administering an energy-efficiency program or environmental education campaign that promotes or intends to promote ENERGY STAR qualified products, homes, Home Performance with ENERGY STAR and/or buildings.

Interested organizations must use this Sponsor Implementation Plan Template to outline your proposed Home Performance with ENERGY STAR program. Review the *Sponsor Guide and Reference Manual (v1.5)* for detailed Program requirements that must be incorporated into your program design. Use Appendix A -- the Minimum Requirements Checklist Worksheet as a quick reference to help complete Sponsor Implementation Plan Template.

Please allow HPwES two weeks to review your plan. Once reviewed, HPwES will contact you to discuss your plan with you. Once your plan is approved you will be listed on the HPwES website and receive an email with My Energy Star Account (MESA) instructions to access our in-kind supporting material. DOE reserves the right to decline sponsorship if there are inadequate resources and planning to initiate a HPwES program, and will advise you as to what needs to be addressed.

Please complete and submit the Sponsor Implementation Plan Template to homeperformance@energystar.gov.

I. GENERAL PROGRAM AND CONTACT INFORMATION

Sponsor Candidate Organization Information: Fill information about your organization and support team.	
Sponsor Candidate's Official Organization Name	
Program Name (i.e. public name associated with HPwES platform.) Please let a program name that we can list on the energystar.gov/hpwes "Connect" map.	
Implementation Vendor Name(s) (If applicable)	
Program Administrator Type (Identify the type of organization that best describes your organization.)	Electric Utility Company (IOU, Muni, Co-op) Financial Institution Gas and Electric Utility Company (IOU, Muni, Co-op) Local Government State Government Non-Profit Other, please specify:
Sponsor Candidate's Mailing Address	Address Line 1
	Address Line 2
	City
	State <input type="text"/> Zip <input type="text"/>
Implementation Vendor's Mailing	Implementation Vendor
	Address Line 1

April 2014

1



Section 3: Workforce Development and Support

Minimum Home Performance with ENERGY STAR Program Requirements Checklist: *Workforce Development and Support*

3.1 Develop a contractor engagement plan

- Assess the market to identify the target contractor base
- Define required certifications and credentials
- Enable contractor access to required diagnostic equipment and software tools

3.2 Establish minimum qualifying criteria for participating contractors including:

- Training and credentialing requirements
- Certification of supervisory staff
- Capacity and resources to provide program related services
- Compliance with local registration and licensing requirements
- Access to qualified installation crews and/or sub-contractors

3.3 Provide a program orientation:

- Conduct contractor training providing an overview of program goals and policies and procedures as they pertain to the participating contractors
- Provide training on basic principles of building science and the house-as-a-system approach to all employees of the Sponsor, its implementation vendor, and other program staff who interact with customers

3.4 Ensure availability in the local market of home performance skills training (technical, software, sales, business development, installations, etc.) for participating contractors

3.5 Provide technical support for participating contractors and energy advisors

3.6 Develop and execute a Contractor Participation Agreement (CPA) including

- Explanation of the agreement
- Participating contractor commitments
- Marketing and advertising guidelines, particularly with regard to use of the Home Performance with ENERGY STAR name and mark
- Business Practices
- Qualifications and credentials
- Terms and conditions pertaining to termination

Section 3: Workforce Development and Support (cont'd)

Contractor Participation Agreement

Section	Required Elements
Explanation of Agreement	<ul style="list-style-type: none"> • Terms and Conditions: establishes the terms and conditions under which contractors may participate in the Sponsor's Program.
Participating Contractor Commitments	<ul style="list-style-type: none"> • Project Reporting: describes the administrative procedures and requirements the participating contractor must follow to document (and often be compensated for) a completed HPwES project. • Field Inspections: describes the terms and conditions under which the participating contractor shall allow access for the Sponsor or its designee to conduct in-process and post-installation field inspections. This section also describes the parameters for participating contractors to address any deficiencies identified through the inspection process. • Sub-contracting: articulates conditions under which the participating contractor may enter into sub-contract arrangements for completion of project work scopes.
Marketing and Advertising	<ul style="list-style-type: none"> • Use of the Home Performance with ENERGY STAR Name and Mark: describes the compliance requirements for a participating contractor's use of the Home Performance with ENERGY STAR name and mark. This section should specifically reference the current <i>ENERGY STAR Brand Book</i>, which describes how the Home Performance with ENERGY STAR mark and name may be used. Additionally, Sponsors shall describe procedures for addressing any non-compliance related to the use of the ENERGY STAR marks.
Business Practices	<ul style="list-style-type: none"> • General Business Practices: lays out the obligations for licensures, permits, liability insurance, certifications, training, and other requirements deemed necessary by state law and the Sponsor's Program policies and guidelines. This section also includes reference to all relevant documentation and specifications pertaining to the installation of efficiency measures.
Qualifications and Credentials	<ul style="list-style-type: none"> • Credentials/Skills: describes the Sponsor's requirements for certification or other accepted third-party verification of knowledge, skills and abilities needed to conduct whole house assessments, building performance diagnostics, and to calculate estimated energy savings from improvement installations. • Equipment: lays out the required access to adequate diagnostic equipment, tools, qualified staff, data systems and software, and administrative support.
Termination	<ul style="list-style-type: none"> • Right to Terminate: outlines the terms and conditions under which the Sponsor may terminate the Contractor Participation Agreement.

Section 3: Workforce Development and Support (*cont'd*)

Highlights of Recommended Approaches



- **Credentialing of Participating Contractors and Workers**
 - Nationally available worker certification programs are offered by BPI and RESNET
 - DOE Guidelines for Home Energy Professionals
 - Regional credentialing programs
 - Trade specific certifications are also available through organizations such as NATE, the National Comfort Institute, Comfort Institute and other trade associations

Reference Appendix D: The Guidelines for Home Energy Professionals

Section 4: The Assessment

Minimum Home Performance with ENERGY STAR Program Requirements Checklist: *The Assessment*

- 4.1** Develop and require a Home Performance Assessment (HPA) for each HPwES project, which ensures that the following tasks occur at some point in the HPA process:
- Customer interview
 - Review of energy bills, if available
 - Visual inspection of the home, interior and exterior
 - Minimum diagnostic tests
 - Data collection of building assemblies and mechanical systems
- 4.2** Develop and require a Home Performance Assessment (HPA) Summary Report for each HPwES project, which includes at a minimum:
- General information
 - Existing conditions
 - Prioritized list of recommended improvements (the proposed improvement measures)
 - Notice of health and safety related issues
 - Savings projections (estimated, modeled, or calculated)

Includes Special Requirements for Multifamily Buildings

Section 4: The Assessment (*cont'd*)

Guiding Principles for Sponsors



Guiding Principles

1. **Customer Engagement:** Notwithstanding the need for a basis in building science, particularly health and safety, the HPA should be designed to engage the customer and motivate them to action. The Program is not successful unless recommendations are converted into installed measures.
2. **Basis in Building Science:** The HPA must include an evaluation of the home's enclosure and energy-related systems that is based on the fundamental physics of energy, airflow, and moisture in buildings.
3. **House-as-a-System Approach:** When evaluating the performance of the home and determining recommended improvements, the assessment must consider the interactive effects of all energy-related systems in the home using a systems-based approach. In this context, the "performance" of the home is inclusive not only of energy efficiency, but also the comfort, health, and safety of the occupants, and the durability of the building enclosure and its mechanical systems.
4. **Inspection and Measurement as Needed:** As each home presents a unique set of physical and operational characteristics and attributes, the assessment shall include inspections, measurements, and diagnostic tests which are sufficient to provide the data needed to evaluate the performance of the home's energy-related systems, including both individual and combined systems.
5. **Documentation, Analysis, and Reporting:** The assessment shall include an analysis and diagnosis based on observed and measured data with a list of prioritized recommended improvements and a prediction of the improved home performance including estimated energy savings.

Section 4: The Assessment (*cont'd*)

Highlights of Recommended Approaches for Single and Multifamily Buildings



- **Strategies for Diagnostic Testing Requirements**
 - Diagnostic Tests are Sales Tools
 - Diagnostic Tests Can Help Manage Risk
 - Diagnostic Tests are for Installers
- **Estimating Energy Savings**

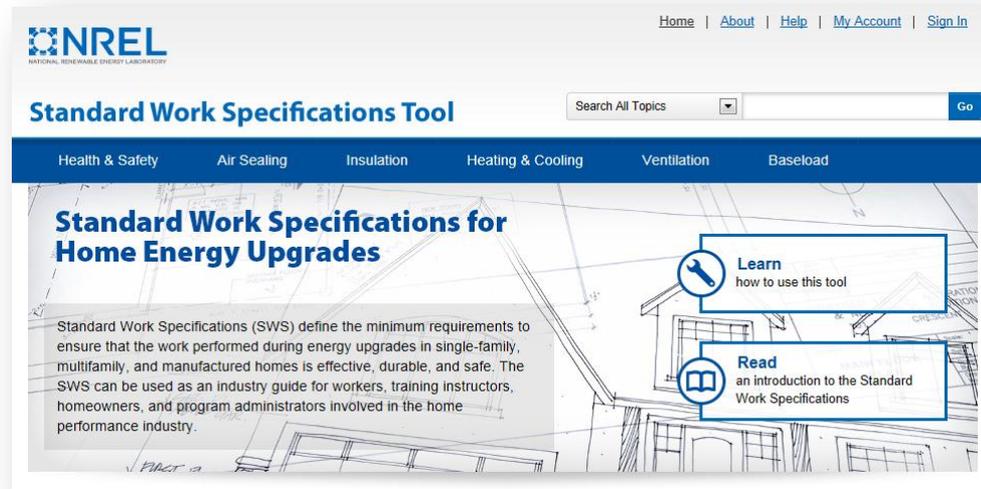
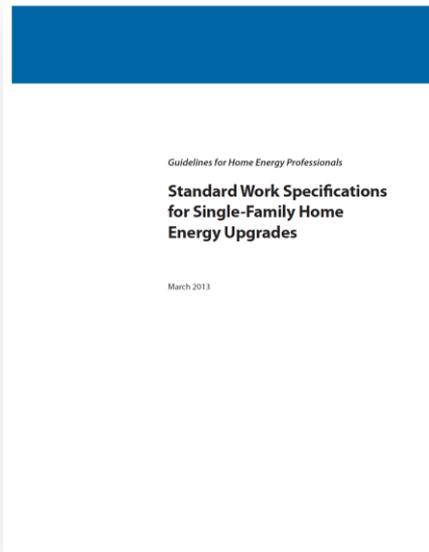
Appendix E includes discussion of the various approaches used to estimate savings and cost-effectiveness

BIG SALE

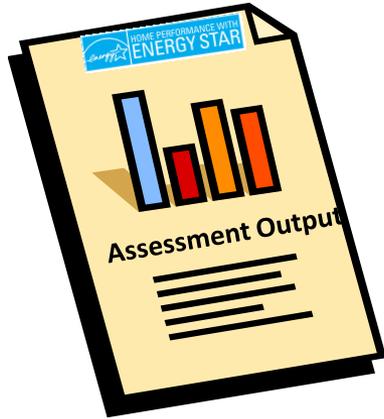
Section 4: The Assessment (cont'd)

Referenced Standards and Specifications:

- DOE's Guidelines for Home Energy Professionals: Standard Work Specifications for Single-Family Home Energy Upgrades
- The Air Conditioning Contractors of America's Standard 12 QH-2011: Existing Home Evaluation and Performance Improvement
- The BPI's Technical Standard for Building Analyst Professionals
- BPI-1100-T-2012 Home Energy Audit Standard



Scope of Work (SOW) vs. Proposed Improvement Measures

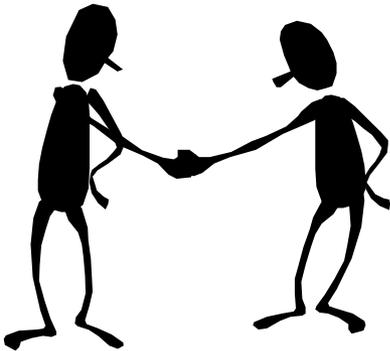


Proposed Improvement Measures

- Are part of the output of the assessment and negotiable with the customer
- This is where the homeowner makes the decision on what measures to install

Scope of Work (SOW)

- Part of the binding contractor between the contractor and customer
- This includes installation specifications as well as appropriate sequencing of measure installations (i.e., loading order) to ensure predicted performance improvements have been achieved
- The SOW specifications should also include any special instructions for the customer (e.g., removal of storage from areas to be treated) and descriptions of how access will be obtained if necessary.



Section 5: The Project Installation

Minimum Home Performance with ENERGY STAR Program Requirements Checklist *The Project Installation*

- 5.1** Develop and require measure installation specifications, which include at a minimum:
- Installation of measures, including the sequence of installation shall be consistent with the contracted Scope of Work (SOW), as agreed upon between the participating contractor and the customer
 - Installations shall be compliant with local building codes and permitting procedures, industry-accepted standards, and manufacturer's specifications for the materials and equipment being installed
 - Ventilation shall be installed as prescribed by industry-accepted standards whenever the home's air exchange rate is determined to be below the required air exchange rate for good indoor air quality as determined by the referenced standard(s).
 - Materials and installation techniques used shall be consistent with a building science-based approach
 - Installations shall be completed by qualified workers
- 5.2** Develop and require test-out procedures, which include at a minimum:
- Visual inspection of installed measures as specified in the SOW, review of commissioning reports, and diagnostic tests as necessary to confirm that manufacturers' specifications and industry-accepted standards have been satisfied
 - Combustion safety checks for all projects where improvements might impact combustion appliance performance
 - Blower door tests when measures impacting infiltration rates are installed

Includes Special Requirements for Multifamily Buildings

Section 5: The Project Installation (cont'd)

Highlights of Recommended Approaches



The screenshot shows the Building America Solution Center website. The header includes the U.S. Department of Energy logo and the text 'Energy Efficiency & Renewable Energy'. The main navigation menu on the left lists: Solution Center Home, Component Explorer, Checklist Manager, Building Science Explorer, Browser, Guides, CAD Files, Case Studies, Image Gallery, and References. The main content area features a large banner with the text 'World-Class Research... At Your Fingertips' and an image of a person using a tablet. Below the banner is a paragraph: 'The U.S. Department of Energy's Building America program strives to develop integrated energy systems that dramatically reduce annual energy use and peak energy loads in existing and new homes while also improving overall building quality, comfort, safety, and durability.' To the right, there are two sections: 'RECENTLY ADDED REFERENCES' and 'RECENTLY ADDED GUIDES'. The references section lists: 'Dryer Safety Tips' (Posted: January 16, 2013), 'The Facts about Clothes Dryer Exhaust Systems' (Posted: January 16, 2013), and 'Estimating the Payback Period of Additional Insulation' (Posted: January 15, 2013). The guides section lists: 'Unvented Combustion Appliances' (Posted: January 15, 2013), 'Quantity and Location of Supply and Return Dust Terminals Match Contractor Balancing Report' (Posted: January 13, 2013), and 'Capillary Break Beneath Slab - Polyethylene Sheeting or Rigid Insulation Over Aggregate' (Posted: October 16, 2012).

- **Documentation of Results**
 - Certificate of Efficiency Improvements
 - Certificate of Performance
 - Section 1: Use and Management of the Home Performance with ENERGY STAR Mark for more on recommended approaches for use of certificates.

Building America's online Solution Center serves as a clearinghouse for a wide variety of technical documents and references including white papers, research and demonstration project reports, as well as many construction details that may be helpful as references. <https://basc.pnnl.gov/>



Documentation of Results

Home Performance with ENERGY STAR®
Summary of Energy Improvements Performed

Locally sponsored by



Home Address: _____ Home Performance Improvements: _____

Work Performed by: _____

Work Verified by: _____

Work Completed on: _____

HOME PERFORMANCE WITH ENERGY STAR

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®
Summary of Energy Improvements Performed

Home Address: Latisha Streater
1 Briarbranch Ct
Greensboro, NC 27405

Home Performance Improvements:

- Air sealing at attic, windows and doors
- Attic insulation increased to R-38
- Attic access air sealed and insulated
- Installed programmable thermostat
- Installed zoning on existing HVAC equipment
- Installed DHW blanket and pipe insulation
- Installed replaced refrigerator with ENERGY STAR model
- Installed 2 CO alarms

Work Performed by: ESRA Facility Management and Consulting, Inc.

Work Verified by: Advanced Energy

Work Completed by: January 1, 2014

Signature: _____

HOME PERFORMANCE WITH ENERGY STAR

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.



This home is certified by
EnergyFit Nevada



The home at 7508 Vander St. Reno, NV 89509 has met the standards for an EnergyFit Home by achieving modeled energy savings of 24.6 %

Key energy saving upgrades performed on this home include:

- Attic Insulation
- Floor Insulation
- Air Sealing

This home was approved on: 3/31/2013

EnergyFit Homes are designed to use at least 20% less energy, creating greater comfort, health and value.

Denise M. Evans, Executive Director, EnergyFit Nevada
Pro Energy Consultants, EnergyFit Nevada Approved Partner Contractor



Developed in accordance with Home Performance with ENERGY STAR whole-house standards which offers a comprehensive approach to improving energy efficiency, comfort, health, safety and durability of homes. This approach helps homeowners optimize energy efficiency by looking at the house as an energy system and takes into account homeowner behavior, local climate and more.

Home Performance with ENERGY STAR®
Summary of Energy Improvements Performed



Home Performance Improvements:

- Improvement #1
- Improvement #2
- Improvement #3
- Etc.

Client Name: _____

Address: _____

City: _____

State, Zip: _____

Work Performed by: _____

Contractor: _____

Work Verified by: _____

Name: _____

Date Work Completed: _____

Date Certificate Issued: _____

Certificate Issued By: _____

Home Performance Results Achieved:

% projected energy efficiency improvement

Energy Use Pre-upgrade: kWh Est. Energy Use Post-upgrade: kWh

Energy Use Pre-upgrade: therms Est. Energy Use Post-upgrade: therms

Projected Energy Savings: kWh therms

Projected Dollar Savings/YR: _____

Environmental Impact of Improvements:

Emissions Reductions: tons CO2/YR

Equivalent to: _____

HOME PERFORMANCE WITH ENERGY STAR

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.

Section 6: Quality Assurance

Minimum Home Performance with ENERGY STAR Program Requirements Checklist: *Quality Assurance*

- 6.1** Ensure program and contractor compliance with the ENERGY STAR Brand Book
- 6.2** Ensure that a signed contractor participation agreement (CPA) includes requirements for compliance with the Sponsor's QA system
- 6.3** Implement a mechanism for customer feedback
- 6.4** Institute a conflict resolution procedure to address problems identified through Quality Assurance/Quality Control (QA/QC) activities and customer feedback.
- 6.5** Implement on-site inspection procedures and maintain records on quality control activities relating to the participating contractors including:
 - Inspection sampling rate
 - Inspection findings
 - Corrective actions, including process improvements resulting from Quality Control activities
 - Be prepared for review by request of DOE or its implementation contractor
- 6.6** Establish and implement procedures for due process and remedial actions
- 6.7** Implement one of the following two options:
 - 6.7.1** OPTION 1: Meet minimum requirements for Quality Control
 - 6.7.2** OPTION 2: Implement a Quality Management System

Section 6: Quality Assurance (*cont'd*)



Option 1: Quality Control (QC)

Relies primarily on inspections to detect defects

- Inspections are used to verify compliance with program standards
- Deficiencies identified are addressed through feedback and enforcement
- Sponsors using this QA option may also choose to employ some of the strategies described in the QMS-based system (Option 2) to enhance their QA/QC program.



Option 2: Quality Management System (QMS)

Uses a systems-based approach to eliminate defects at the source

- Relies on a culture of quality where each individual is personally responsible for delivering quality products and services
- Quality is defined by a customer-focused set of criteria
- QC activities identified in Option 1 may be a part of a QMS program, but serve a secondary purpose to the integration of quality systems

References that may be useful for planning and implementing a quality assurance program are provided in **Appendix F**.

Section 6: Quality Assurance (cont'd)

Summary of QA Verification Points

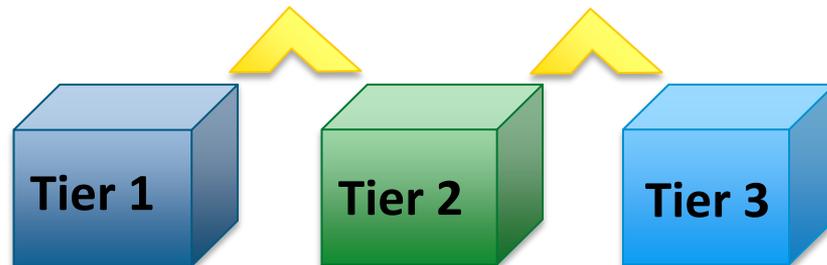
QA Option	QA Requirement	Verified by Sponsor	Verified by DOE	
			Desktop	Site Visit
1 & 2	Comply with <i>ENERGY STAR Brand Book</i>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1 & 2	Execute signed participation agreements with all participating contractors	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1 & 2	Implement a system for collecting and responding to customer feedback	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1 & 2	Implement a conflict resolution procedure	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1	Complete a data/file review of all contractor projects	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
1	Ensure completion of on-site inspections of all participating contractors (minimum 5% sample of projects for each contractor)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
1 & 2	Maintain records on quality control inspections including sampling rates, findings, corrective actions taken, and verification of conformance to specifications	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	Comply with self-defined and Department approved QMS elements	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
2	Maintain records on internal quality control data collected during production including documentation of defects observed, corrective actions taken, and verification of conformance to specifications	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Section 6: Quality Assurance (*cont'd*)

Highlights of Recommended Approaches



- Contractor Feedback
- Tiered Inspection Rates
- Metered Results
- Third-Party QA Providers



A number of resources are available to assist organizations with the development of quality assurance plans and the use of associated quality control tools and strategies

Section 7: Tracking and Reporting

Minimum Home Performance with ENERGY STAR Program Requirements Checklist: *Tracking and Reporting*

- 7.1** Collect data and report results to DOE using Quarterly Data Reporting template provided, including:
- Verified and updated list of participating contractors including status (active, probation, inactive) and the contractor's primary point of contact for accessing marketing materials
 - Number of projects completed by each contractor within the reporting period
 - Number of field inspections completed for each contractor within the reporting period, including at which point during the project the inspection was completed (assessment, measure installation, test-out, or post-installation)
 - Number of projects completed by the program within the reporting period disaggregated by project type: single family vs. multifamily, and an indication of how many reported projects included only program subsidized direct install measures
- 7.2** Collect data and report results to DOE using Annual Data Reporting template provided, including:
- Verified and updated contact information
 - Verified and updated program URL and description for HPwES website
 - Updated program implementation plan elements
 - Summary results of preceding program year
 - Summary goals for upcoming program year

DOE encourages Sponsors to employ HPXML compatible software tools to assist in the collection and management of data related to implementing a HPwES program.

HPwES Reports

HPwES Annual Report



Annual Report for HPwES Sponsor Programs

As an HPwES Program Sponsor, one of your partnership commitments is to provide an annual update on activities. The Department is interested in gathering information on your CY 2012 results as well as plans for CY 2013 and beyond. Please answer the following questions based on the data you normally collect and information that is readily accessible to your program team. If you do not have the data to respond to a specific question, the answer may be left blank. We understand that programs track data and budgets in a variety of ways. If our questions do not align precisely with the data you have available please note any discrepancies in the "General Comments" section. To minimize the burden, the HPwES Team created this PDF-writable template form to facilitate collection of information. Please direct any questions or feedback to your HPwES Account Manager.

Please complete this form and email it by March 8, 2013 to your HPwES Account Manager and/or homeperformance@energystar.gov. Alternatively, Sponsors can provide the requested information in an MS WORD or PDF format.

PROGRAM AND CONTACT INFORMATION

Sponsor Organization Information		
Official Sponsor's Organization Name <i>(as listed on HPwES Partnership Agreement)</i>		
Program Name <i>(public name associated with HPwES platform; note: this is how your program will be listed on the energystar.gov locator map)</i>		
Mailing Address for Sponsor	Address Line 1	
	Address Line 2	
	City	
	State	Zip
Mailing Address for Implementation Contractor	Address Line 1	
	Address Line 2	
	City	
	State	Zip
Contact Information (list all that apply)		
1st Administrative POC	Firstname: Email:	Lastname: Phone:
2nd Administrative POC	Firstname: Email:	Lastname: Phone:
Implementation POC	Firstname: Email:	Lastname: Phone:
Reporting/Data POC	Firstname: Email:	Lastname: Phone:
Marketing POC	Firstname: Email:	Lastname: Phone:
Of the POCs listed above, please indicate the primary contact.		
1st Administrative POC 2nd Administrative POC Implementation POC Reporting/Data POC Marketing POC		

February 2013

1

HPwES Quarterly Report

HPwES Sponsor Quarterly Reporting Form - READ ME FIRST

Reporting Period: 2013 Q3
Reports Due: 10/30/2013

Section 1: Sponsor Information

Please verify or update the information shown in the "Sponsor Information" tab if necessary.

Section 2: Contractor and Project Information

A. Please update your program's participating contractor list by deactivating contractors who are no longer participating and updating company contact information where necessary. You may also update participating contractor status for those who are on or off probationary status.

B. Please report activity for this reporting period for each contractor. Report only completed HPwES projects and field inspections. HPwES project and field inspection counts may only be retroactively adjusted for the two preceding quarters listed.

Reporting Schedule:	Covers	Report Due
Q1	Jan.-March	April 30th
Q2	April-June	July 30th
Q3	July-Sept.	October 30th
Q4	Oct.-Dec.	January 30th

Glossary

Program Name	A public name associated with HPwES program; note this is how your program is listed on the energystar.gov Sponsor map.
HPwES Contractor Contact Information	Please report only the contact information of the marketing coordinator for each HPwES Contractor. The contractor's marketing coordinator will have access to My Energy Star Account (MESA).
Participating Contractor Status	A drop down menu with only three possibilities: Active, Inactive, or Probation.
Active	A fully participating contractor that should have access to MESA, Marketing Toolkit, and logos.
Inactive	A contractor no longer participating in a local program and does not have access to MESA, Marketing Toolkit and logos.
Probation	A contractor in-between Active and Inactive; may be due to paperwork or disciplinary action; does not have access to MESA and Marketing Toolkit.
Completed HPwES Project	A test-in/assessment was performed, work/improvements were performed, and a test-out was performed.
Field Inspection	A field visit by an independent inspector to assess compliance with program standards. The visit could be at any stage during the HPwES project.

READ ME FIRST

Sponsor Information

Contractor Project Information



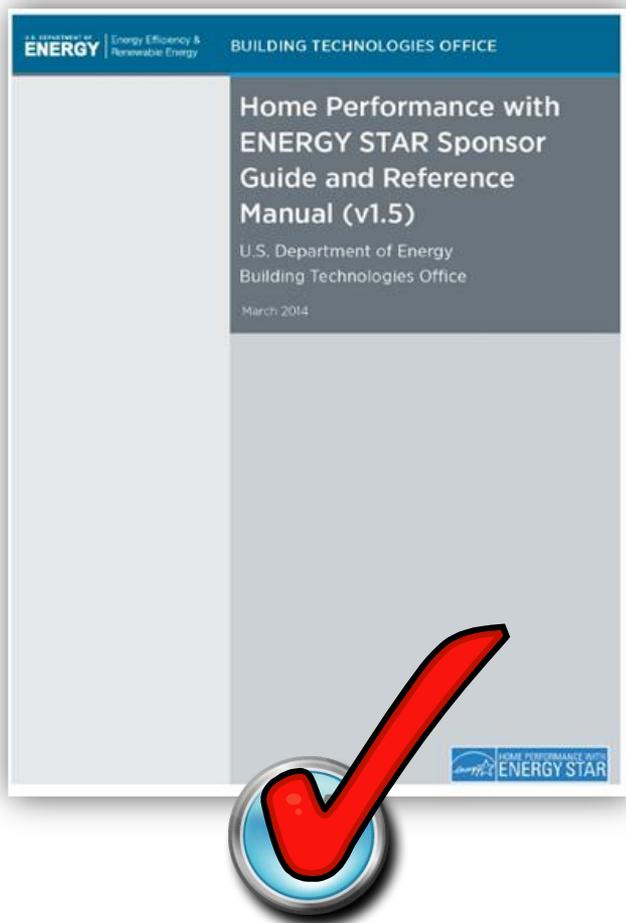
Recap of updates for HPwES requirements

Program Element	Minimum Requirement
1. Use of the Mark	✓ Must be used on consumer facing materials
2. Program Design and Development	✓ Updated on-boarding materials, including revamped implementation plan template
3. Workforce Development and Support	✓ Clarity on required qualifications and credentials ✓ Guidance for components to include in the Contractor Participation Agreement
4. The Assessment	✓ Explicitly lists and describes criteria for minimum elements ✓ Removed references to “comprehensive” in favor of focusing on building science, systems-based approach ✓ New section on requirements for multi-family units HPwES projects

What's new in the Sponsor Guide (v1.5)? (cont'd)

Program Element	Minimum Requirement
5. Project Installation	<ul style="list-style-type: none">✓ Requires measure installation specifications, including:<ul style="list-style-type: none">▪ Loading order of installed measures consistent with the contracted Scope of Work (SOW)▪ Compliance with local building codes, permitting procedures, standards and specs▪ Completion of installation by qualified workers✓ Test-out procedures, which include at a minimum:<ul style="list-style-type: none">▪ Visual verification, review of commissioning reports, and diagnostic tests as necessary▪ Combustion safety checks for all homes with combustion appliances▪ Blower door tests when installed measures impact infiltration rates
6. Quality Assurance	<ul style="list-style-type: none">✓ Clarifies definitions and terminology related to Quality Assurance (QA) and Quality Control (QC)✓ Introduces a new (optional) systems-based approach to quality assurance
7. Tracking and Reporting	<ul style="list-style-type: none">✓ Clarifies reporting and tracking terminology

Next Steps: Sponsor Compliance & Training Opportunities



- Sponsors have till **March 31, 2015** to comply with the Sponsor Guide and Reference Manual (v1.5)
- Training webinars will be provided during late Spring/ early Summer months
 - Webinars will be posted on the HPwES website
- Account Managers and the HPwES team will be available for individual calls

Time for a QUIZ!!!

It is now time for you to shine!!!!



For more information



- Ely Jacobsohn, DOE, HPwES Program Manager – Ely.Jacobsohn@ee.doe.gov
- Caroline Hazard, SRA, Communications & Outreach – Caroline_Hazard@sra.com
- Jason Bogovich, SRA, Regional Account Manager – Jason_Bogovich@sra.com

Do you want HPwES News? Join our Stakeholder Email List!
Email us at HomePerformance@EnergyStar.gov to join

www.energystar.gov/homeperformance