



Energy-Saving

HOMES, BUILDINGS,
& MANUFACTURING

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

Understanding the Core Requirements of Home Performance with ENERGY STAR

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ACI National, May 2013

Today's Agenda

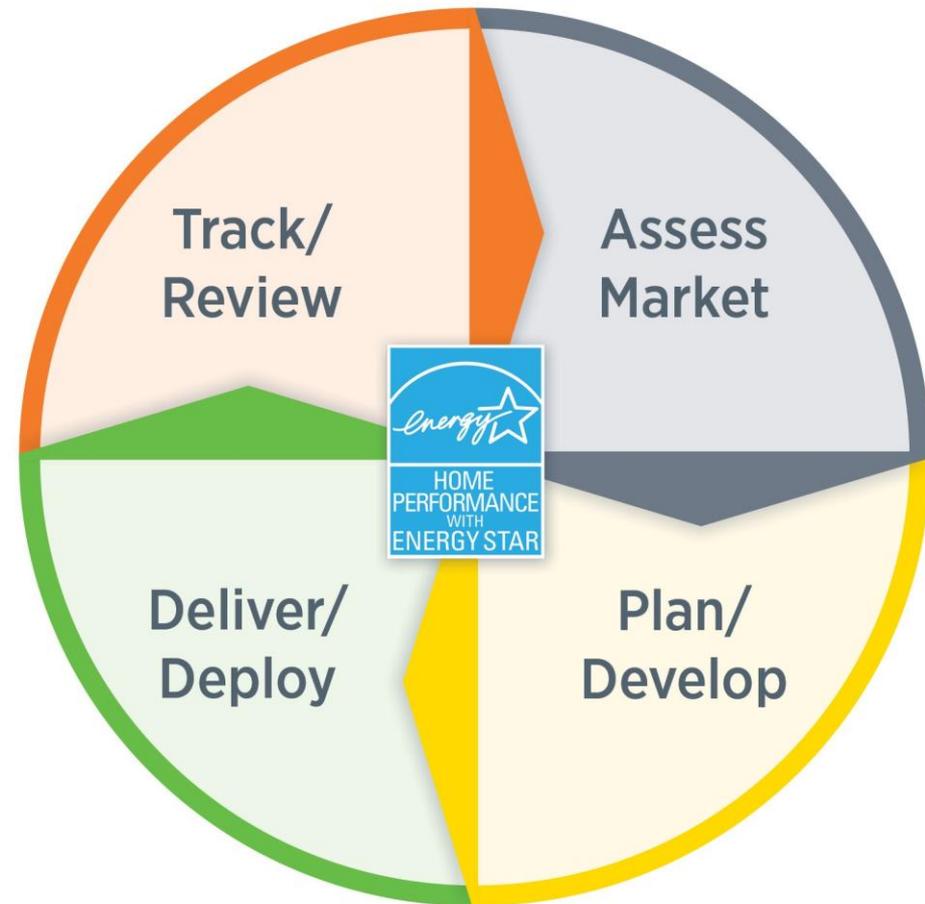


1. Update on HPwES
2. A Preview of Changes to the Sponsor Guide (v1.5)
3. Next Steps

The Department's Goal in Administering HPwES

Facilitate the achievement of scale in the HP industry by designing a more consistent, replicable program model and expand participation of the HPwES Program while providing the flexibility necessary for the home performance industry to be successful.

HPwES implementation is fueled by a continuous improvement philosophy



Striking a Balance with HPwES Core Requirements

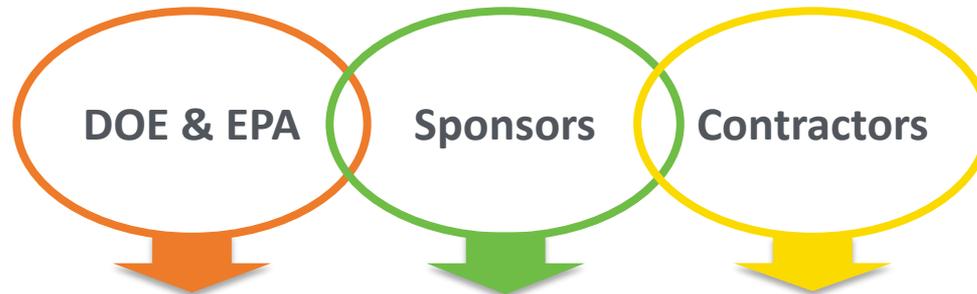
“If government can reduce costs and increase flexibility by granting discretion, and if it can do so without creating uncertainty, evasion, or confusion, it should grant discretion.

“If government can reduce costs and increase simplicity by producing clear results, and if it can do so without creating expensive and pointless rigidity, it should opt for clear rules. “

“The project of simplification will call for an increase in discretion in some domains and an increase in clear requirements in others.”

Cass Sunstein, *Simpler: The Future of Government*, Administrator of the White House Office of Information and Regulatory Affairs, 2009-2012

How do we deliver HPwES?



Voluntary public-private partnership to provide solutions to homeowner's performance issues with:

- ✓ A trained workforce
- ✓ Whole-house assessment
- ✓ Marketing promotions & incentives
- ✓ QA/QC structure
- ✓ Opportunities for homeowner and contractor recognition

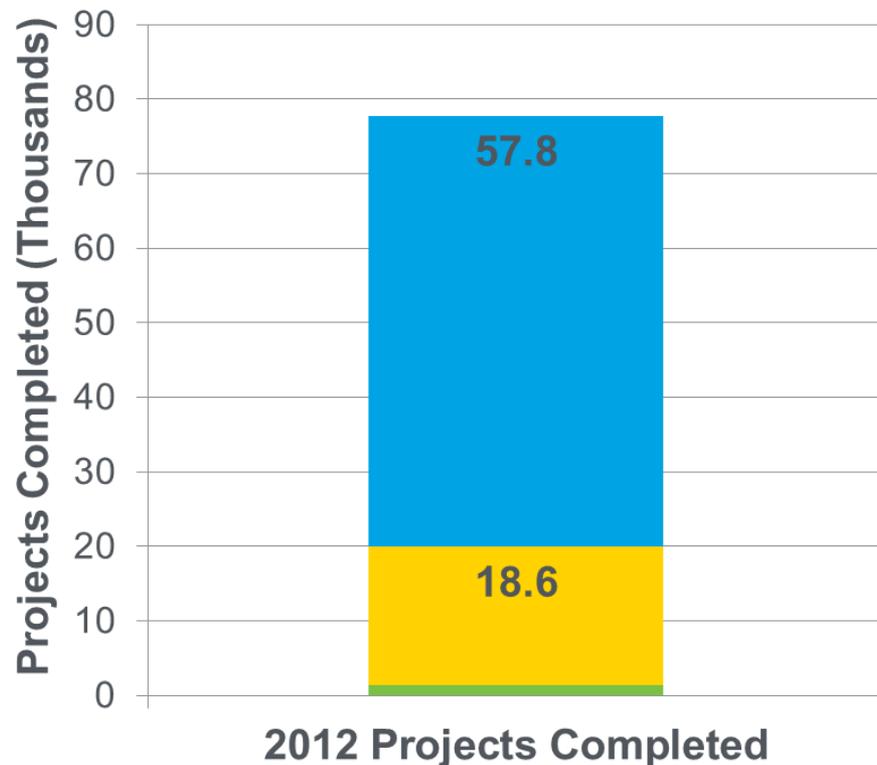
HPwES National Update: Facts and Figures

Recent Achievements

- Over 50 Program Sponsors nationwide
- Over 250,000 homes improved since 2002
- Over 1,900 participating contractors
- Added 6 new Sponsors during 2012
- Helped develop 3 regional collaboratives
- Developed the Century Club Web Button for contractors
- Enhanced the HPwES Website



HPwES Opportunities in a Changing Market



2012 Market Share Results

- **High-Volume Sponsors**
Share: 74%
Active Sponsors:8
Growth relative to 2011:32%
- **Mid-Volume Sponsors**
Share: 24%
Active Sponsors:22
Growth relative to 2011:27%
- **Low-Volume Sponsors**
Share: 2%
Active Sponsors:20
Growth relative to 2011:20%

Analysis of the 2012 HPwES Annual Reports

- In January, DOE issued an Annual Report Data Call to collect:
 - Final overall CY 2012 results; and
 - Program plans for CY 2013 and beyond
- Data will inform program support and strategy

Response Results:

- 43 Sponsors responded representing 91% of the 2012 Project totals (71,235 projects)
- Caution in drawing conclusions:
 - Varied interpretations on data requested
 - Not all questions answered

The screenshot shows a PDF form titled "Annual Report for HPwES Sponsor Programs" with the ENERGY STAR logo. The form contains instructions and a data collection table. The instructions state: "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 what information is readily accessible to your program team. To minimize the burden, the HPwES Team created this PDF-writable template form to facilitate collection of information. Please complete this form and email it by XX/XX/XXXX to your HPwES Account Manager and/or homeperformance@energystar.gov. Alternatively, Sponsors can provide the requested information in an MS WORD or PDF format." The form is divided into sections: "PROGRAM AND CONTACT INFORMATION", "Sponsor Organization Information", "Mailing Address for Sponsor", "Mailing Address for Implementation Contractor", and "Contact Information (list all that apply)".

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:	Lastname:
	Email:	Phone:
2nd Administrative POC	Firstname:	Lastname:
	Email:	Phone:
Implementation POC	Firstname:	Lastname:
	Email:	Phone:
Reporting/Data POC	Firstname:	Lastname:
	Email:	Phone:
Marketing POC	Firstname:	Lastname:
	Email:	Phone:

Proposed and Future Work

We will build upon the HPwES platform to enhance consistency and work towards scalability.

HPwES 1.0 (current)

A whole house process supporting a building science based approach to improve existing homes and achieve energy savings with third-party quality oversight.

HPwES 1.5 (consistency)

Clarifies the requirements for the delivery of a consistent and replicable HPwES program platform.

HPwES 2.0 (vision)

Improve the scalability by creating more opportunities for participation and enabling fact-based means for valuing energy efficiency and associated benefits.

Evolution of HPwES – Developing v1.5



HPwES Version 1.0

- Consistency in concept but many different interpretations
- Lack of clarity on minimum requirements
- Much left to interpretation at the local level

HPwES Version 1.5

- Uniform program platform
- Well-defined core elements and minimum standards
- Flexibility to fit many markets but still recognizable as a national program

Revising the Program Sponsor Guide

Purpose:

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

Timeline:

- Draft for public comment in May 2013
- Issue for implementation in Q3 '13



Summary of what's changing in the Sponsor Guide

Structure and layout

Build specific sections to facilitate:

- Clarity
- Use-ability
- Modular updates

Minimum Requirements

- Summary Checklists
- Specifications for compliance
- for the aspects of a HPwES program

Recommended Approaches

- Optional guidance
- Suggested strategies and tactics
- Lessons learned and examples

Tools & Resources

- Parity in support for industry tools
- Updated references and links
- Revised and renewed templates

Issuing and Updating the Revised Sponsor Guide

DOE intends to issue the Guide electronically

Minimum Requirements	Recommended Approaches & Guidance	Tools & Resources
Downloadable Document	Categorized and searchable online content	

Making future updates to the Guide

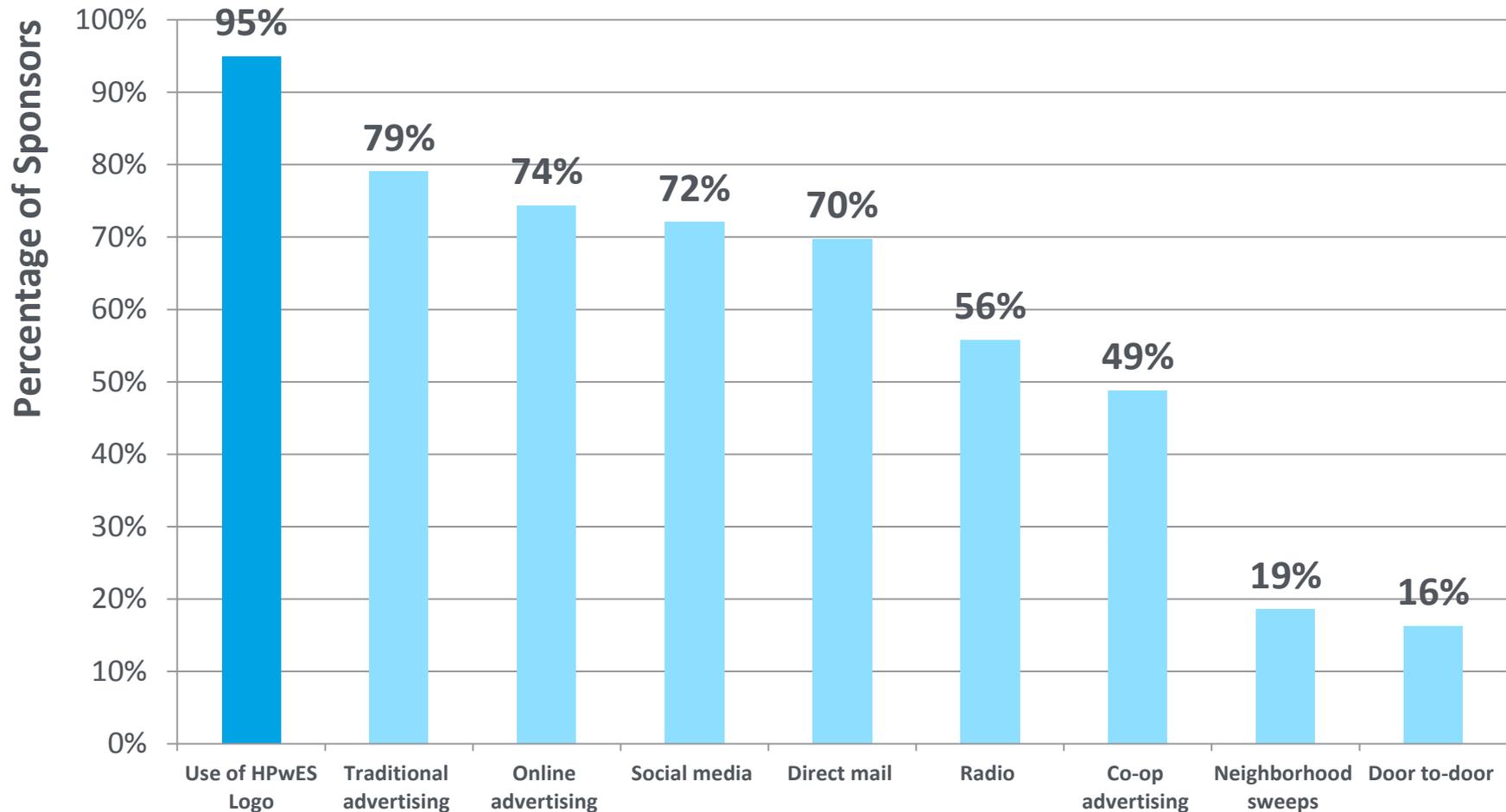
Minimum Requirements	Recommended Approaches & Guidance	Tools & Resources
<ul style="list-style-type: none">• Periodic/ as needed transparent and public vetting process• Grace period for adoption of any new requirements	<ul style="list-style-type: none">• Ongoing updates to offer new content and resources as they become available	

Ensuring Public Confidence in ENERGY STAR

DOE will work with Sponsors to resolve any conflicts or non-compliance by seeking to resolve all matters informally

- DOE will issue corrective actions to Sponsors for non-compliance, such as:
 - Mis-use of the HPwES name and/or logo
 - Consistently late and/or incorrect quarterly or annual reports
 - Not following program requirements
- Corrective Action Process
 - 1) DOE informally seeks to resolve non-compliance
 - 2) DOE issues corrective action letter
 - 3) DOE terminates the partnership

Analysis Results: Marketing Strategies and Tactics



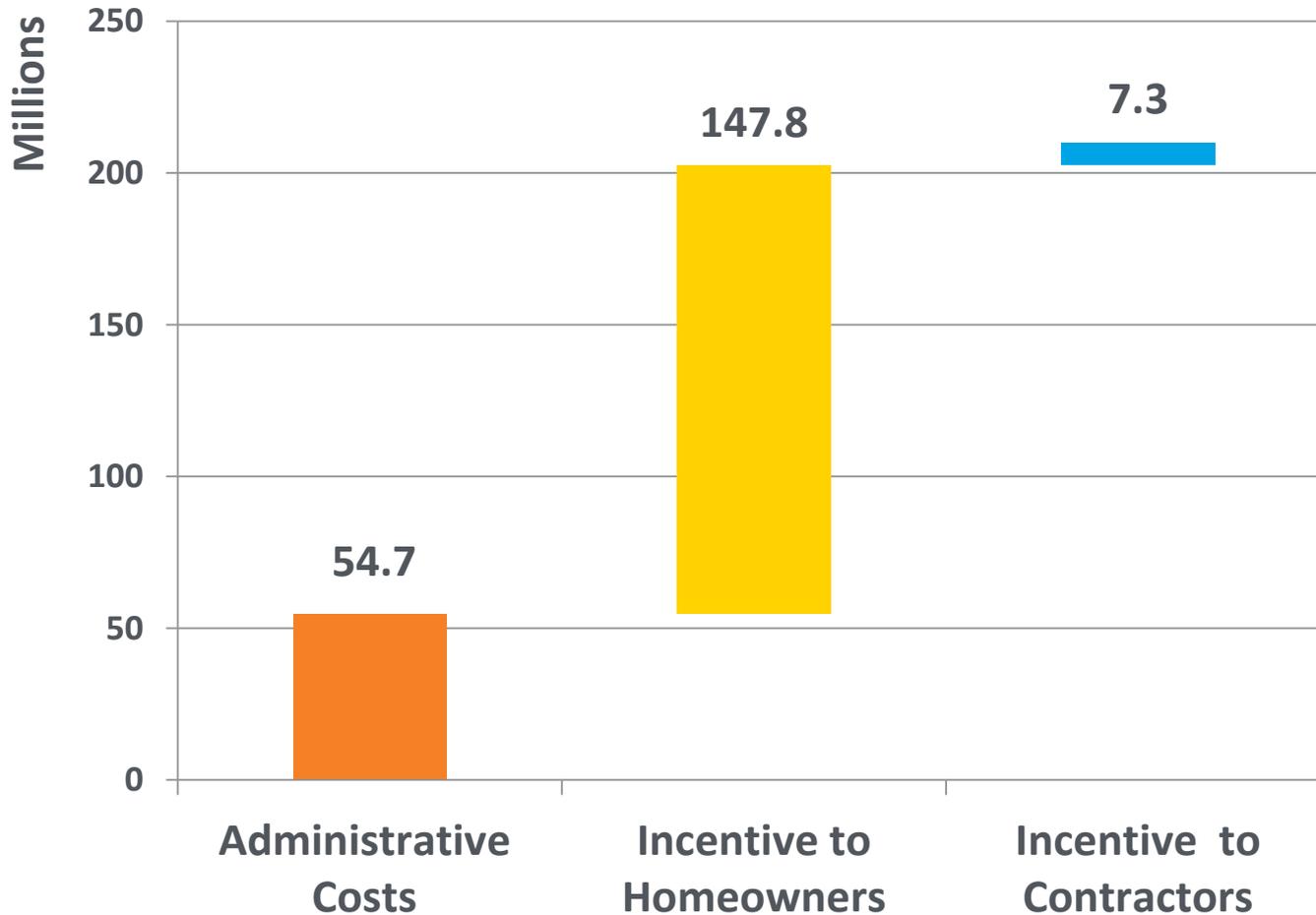
Confidence in data content is limited due to variance in respondents interpretation of questions posed in the 2012 annual data call. Additionally, analysis is compounded by limited dataset.

N=43 Sponsors

Preview: Proper use of the HPwES Logo

Summary of updates	Reorganized with no major changes
Minimum Requirements	<ul style="list-style-type: none">• Adhere to the ENERGY STAR Identity Guidelines• Use the HPwES name and logo in materials• Manage logo use by participating contractors
Recommended Approaches	Tips to manage logo use
Tools/Resources	Link to current ENERGY STAR Identity Guidelines

Analysis Results: Cumulative Program Cost to Sponsors



- Total reported cost to Sponsors = **\$210 million**
- **2.4 to 1** investment of total Sponsor costs to homeowner incentives

Confidence in data content is limited due to variance in respondents interpretation of questions posed in the 2012 annual data call. Additionally, analysis is compounded by limited dataset.

N=40 Sponsors

Preview: Program Design and Development

Summary of updates	<ul style="list-style-type: none">• Reorganized with no major changes• Clarification of minimum requirements and steps to become a HPwES Sponsor.
Minimum Requirements	<ul style="list-style-type: none">• Sign HPwES Partnership Agreement• Complete, and update annually, a HPwES Implementation Plan• Provide quarterly and annual data on the status of HPwES Program implementation
Recommended Approaches	<p>Tips on:</p> <ul style="list-style-type: none">• setting goals and objectives• Program administration and cost• Addressing program cost-effectiveness
Tools/Resources	<p>Links to:</p> <ul style="list-style-type: none">• Better Buildings Residential Program Solution Center• Industry reports and guides

Preview: Developing and Supporting a Workforce

Summary of updates	Describes Sponsor responsibilities for recruitment, qualification, training, and technical support of contracting network.
Minimum Requirements	<ul style="list-style-type: none">• Develop a contractor recruitment plan• Provide a Program Orientation on program goals and requirements to participating contractors• Ensure availability of home performance skills training (technical, software, sales, business development, etc.)• Provide technical support for participating contractors and energy advisors
Recommended Approaches	Tips on: <ul style="list-style-type: none">• What to include in a contractor participation agreement• Recruitment, training, and credentialing
Tools/Resources	Links to: <ul style="list-style-type: none">• Standard Workforce Specifications• Industry standards, reports, and guides

Preview: Home Performance Assessment (HPA)

Summary of updates

- 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

Guiding Principles

- ✓ Basis in building science
- ✓ House as a system approach
- ✓ Inspect and measure as needed
- ✓ Document, analyze and report findings

Anticipated Design Benefits

- Requirements are designed to allow for a variety of different program approaches while maintaining a consistent minimum standard of what qualifies as a HPwES HPA
- Allows for some diagnostic tests to be completed based on specific site conditions and/or in conjunction with installations instead of requiring all tests during the HPA all the time.

Preview (continued): HPA Minimum Requirements

Minimum Requirements

- Develop and require a HPA for each HPwES project, ensuring, at a minimum, the following tasks occur at some point in the HPA process:
 - ✓ Customer interview
 - ✓ Review of energy bills, if available
 - ✓ Visual inspection, interior and exterior
 - ✓ Data collection of building assemblies and mechanical systems
 - ✓ Minimum diagnostic tests
- Develop and require a HPA Summary Report for each HPwES project, which includes at a minimum:
 - ✓ Prioritized list of recommended improvements (the proposed improvement measures)
 - ✓ Savings projections
 - ✓ Notice of health and safety related issues

Preview: Project Installation

Summary of updates

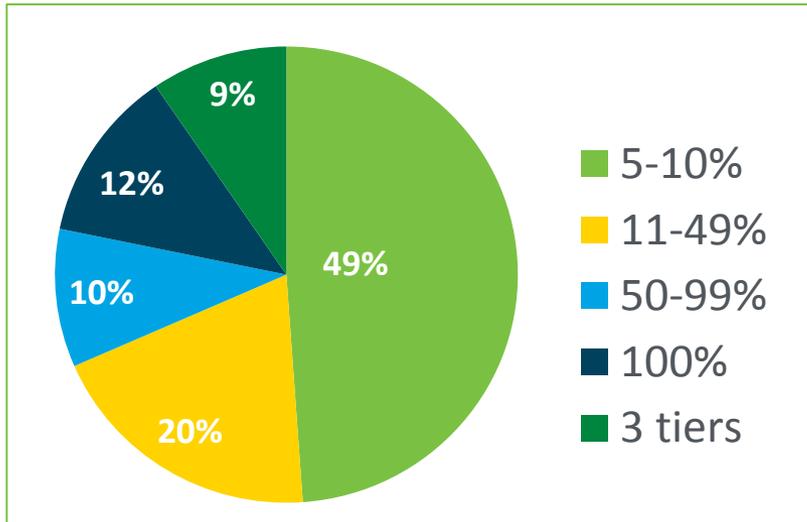
Describes Sponsor responsibilities for recruitment, qualification, training, and technical support of contracting network.

Minimum Requirements

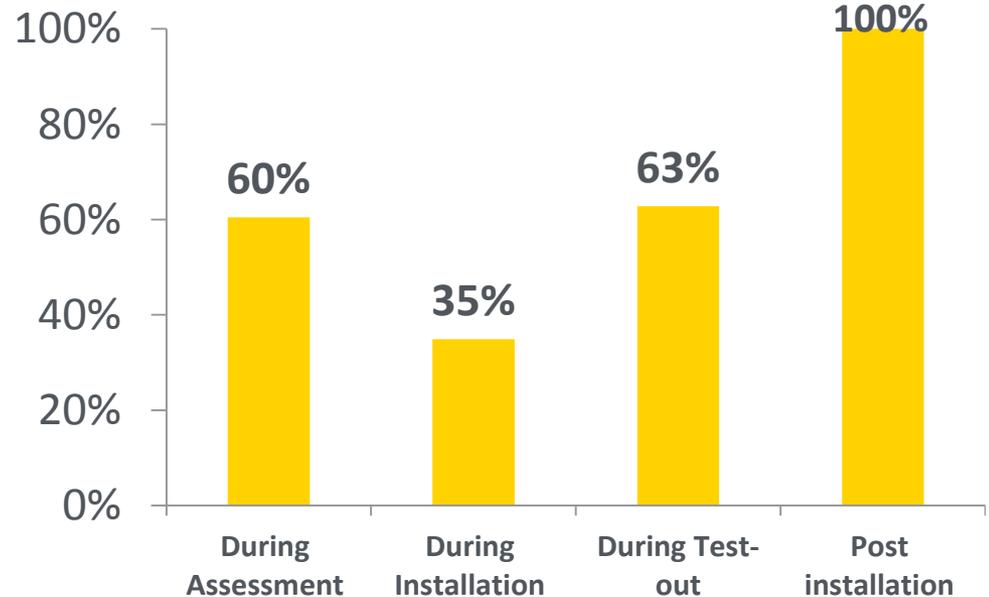
- Develop and require measure installation specifications, including at a minimum:
 - ✓ Loading order of installed measures consistent with the contracted Scope of Work (SOW)
 - ✓ Compliance with local building codes and permitting procedures, industry-accepted standards, & manufacturer's specifications
 - ✓ Completion of installation by qualified workers
- Develop and require, test-out procedures, which include at a minimum
 - ✓ 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
 - ✓ System airflow and/or static pressure tests when duct sealing measures are installed

Analysis Results: Quality Assurance

Field Inspection Sampling Ratio



Field Inspection Schedule



- 56% of Sponsors have in-house staff to conduct inspections
- 96% complete post-installation inspections within 3 months of project completion

Confidence in data content is limited due to variance in respondents interpretation of questions posed in the 2012 annual data call. Additionally, analysis is compounded by limited dataset.

N=43 Sponsors

Preview: Quality Assurance

Summary of updates

- Clarifies definitions and terminology related to Quality Assurance (QA) and Quality Control (QC)
- Introduces a new (optional) systems-based approach to quality assurance.

Minimum Requirements

Allows for Sponsors to choose:

- Continue using the current QC based system (100% desk reviews + 5% field inspection)
- Establish a Quality Management System.

Recommended Approaches

Tips on:

- Designing a QC-based or a QMS-based Quality Assurance Plan
- Addressing non-conformities and remedial actions

Tools/Resources

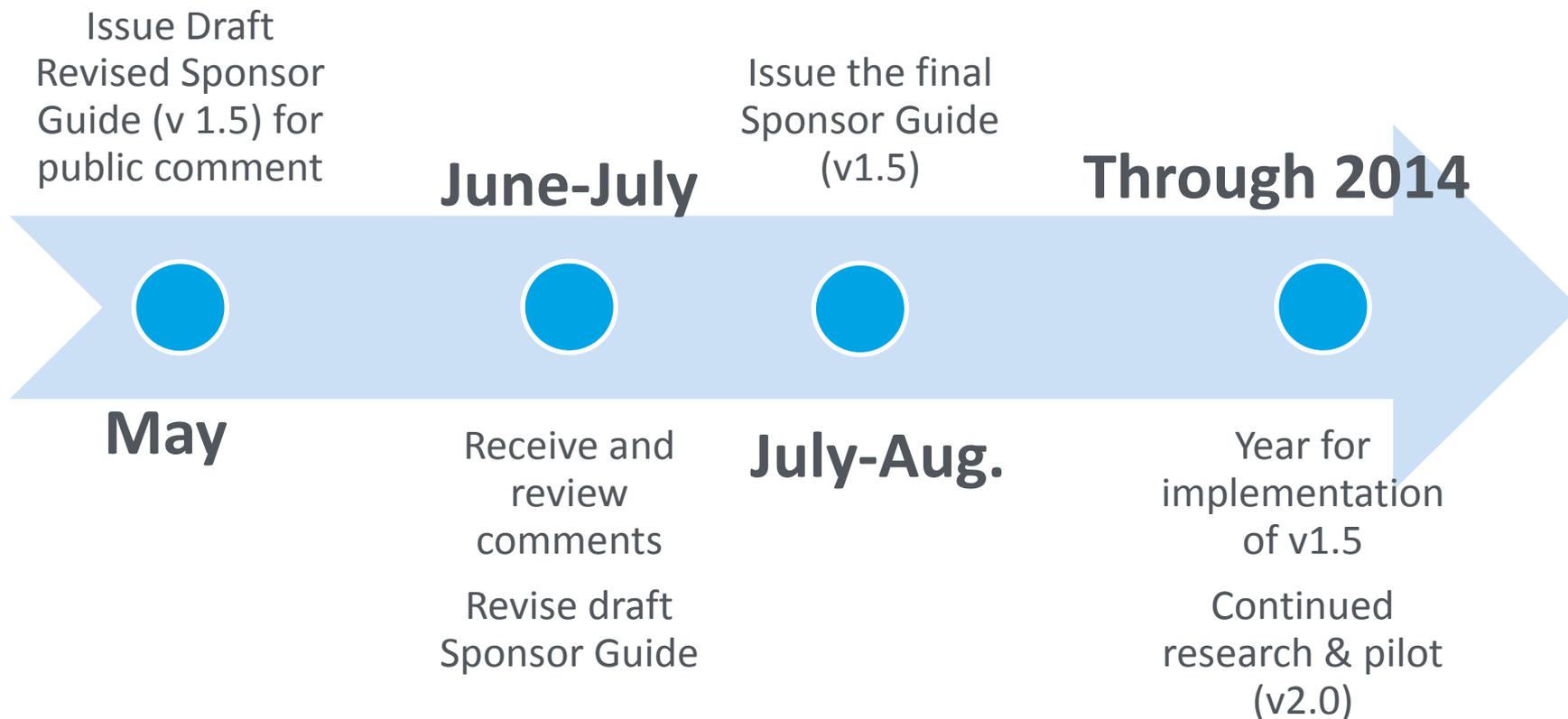
Links to:

- Industry standards, reports, and guides

Preview: Tracking and Reporting

Summary of updates	<ul style="list-style-type: none">• Reorganized with no major changes• Clarifies reporting and tracking terminology
Minimum Requirements	<ul style="list-style-type: none">• Quarterly reporting on:<ul style="list-style-type: none">✓ Verify/ update contractor contact info and status✓ Verify/update completed projects and field inspections for the current and past 2 quarters✓ Completed projects by type: single family vs. multifamily• Annual reporting on:<ul style="list-style-type: none">✓ 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
Tools/Resources	<p>Links to:</p> <ul style="list-style-type: none">• Templates

Our Next Steps



Research and Pilot Stage-Gate Project Management

HPwES Goal: To develop a scalable Program which is technologically and economically viable

Approach:

1. Provide a consistent and clear definition of HPwES Program
2. Ensure the quality delivery of both energy savings and health and safety performance improvements
3. Facilitate infrastructure development that supports quality whole-house improvements
4. Expand HPwES to take advantage of the homeowner's multiple decision points related to home improvements

Objectives:

- Increase participation
- Increase traction (e.g. results) for sponsors and participating contractors
- Adherence with HPwES program requirements (QA)
- Increase recognition for HPwES brand
- Increase performance (quality, comfort etc.)
- Improve administrative and operational efficiencies



Questions & Answers



For more information



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