

Home Performance
with ENERGY STAR

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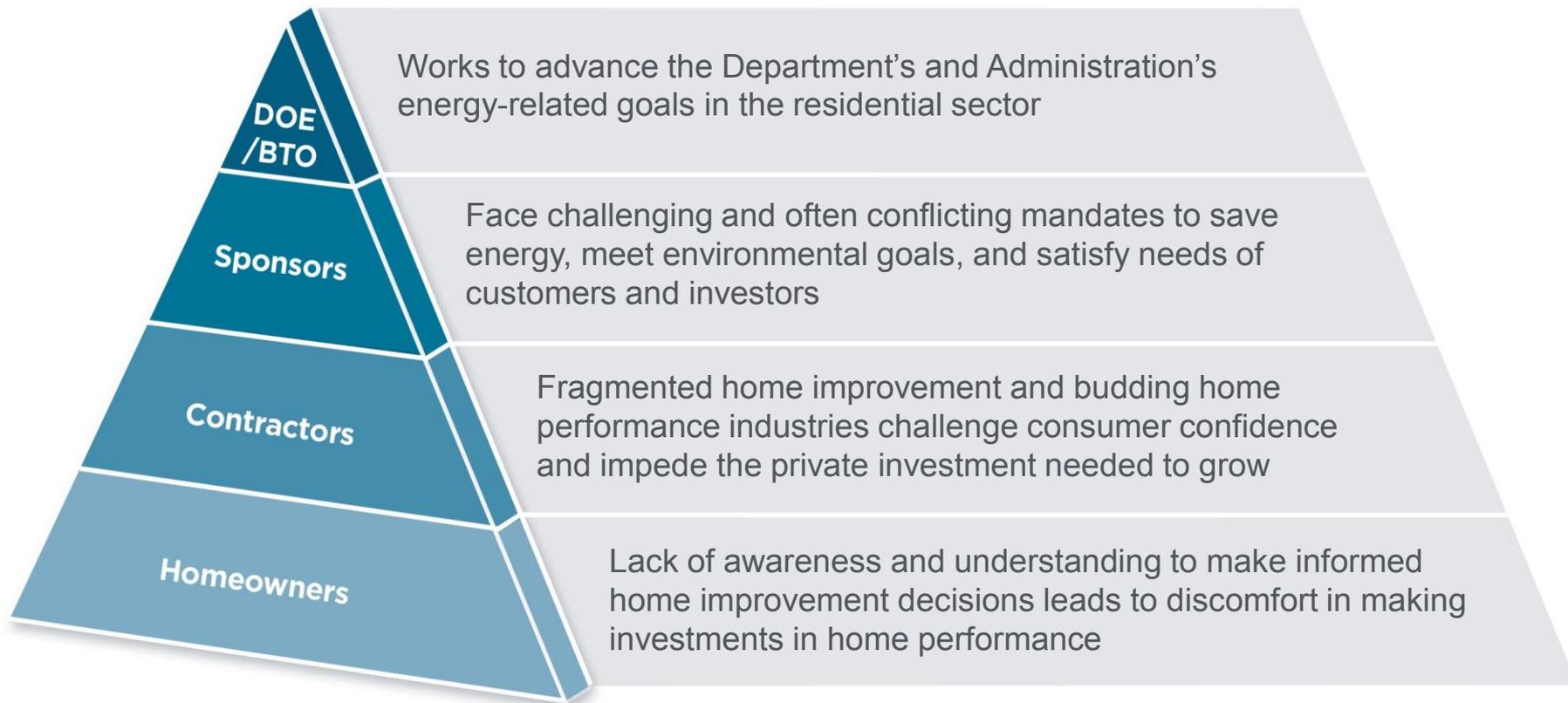
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Purpose and Objectives: Problem Statement

Home Performance with ENERGY STAR (HPwES) provides a programmatic platform that helps three main constituencies resolve some of our nation's most challenging energy issues resulting in broad-based adoption of energy efficiency improvements in homes.

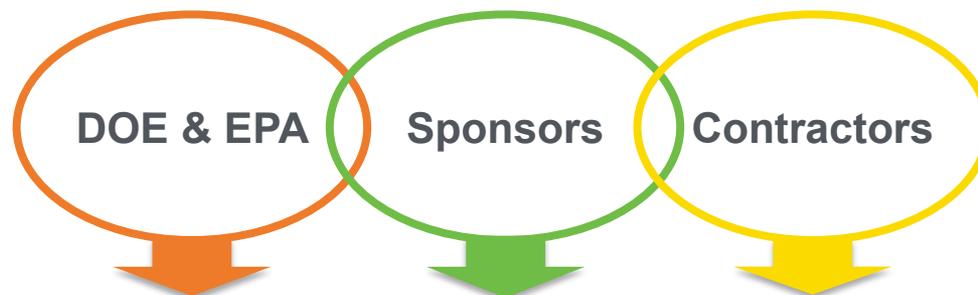


- HPwES, like all ENERGY STAR programs, facilitates market transformation by increasing the availability and adoption of energy efficient goods and services nationally
- Examples of stakeholder-specific goals impacting U.S. markets:
 - **Sponsors:** Achievement of economic development, energy, and environmental goals
 - **Contractors:** Established infrastructure of highly skilled, local workforce and consumer demand for HP services
 - **Homeowners:** Improved efficiency, durability, comfort, health & safety (H&S), reduced operational costs of homes
 - **Manufacturers, Suppliers, and Secondary Service Providers:** Increased domestic revenue as a result of increased sales of HP-related goods and services

Purpose and Objectives: Project Focus & Connection to BTO Goals

BTO Market Stimulation Strategy	Example HPwES Activities
<i>Identify barriers to “speed and scale” adoption</i>	Stakeholder input over past year helped identify priorities: consistency in standards, data, QA
<i>Collaborate with industry to improve market adoption</i>	Public comments on proposed v2.0, expanded delivery models, multi-touch project staging
<i>Increase usage of products and services</i>	Improved website, Century Club web-button, outreach to HVAC sector
<i>Work through policy, information, and financial barriers</i>	Collaboration with sister programs and agencies; access to data and technical support for local efforts to overcome policy barriers (e.g. TRC issues)
<i>Communicate the importance and value of energy efficiency</i>	Consumer-focused website sections, Annual data call to quantify results and inform future messaging
<i>Provide technical assistance and training</i>	Account Mgmt, regional collaboratives, Technical Lead support (e.g. ASHRAE 62.2 guidance)

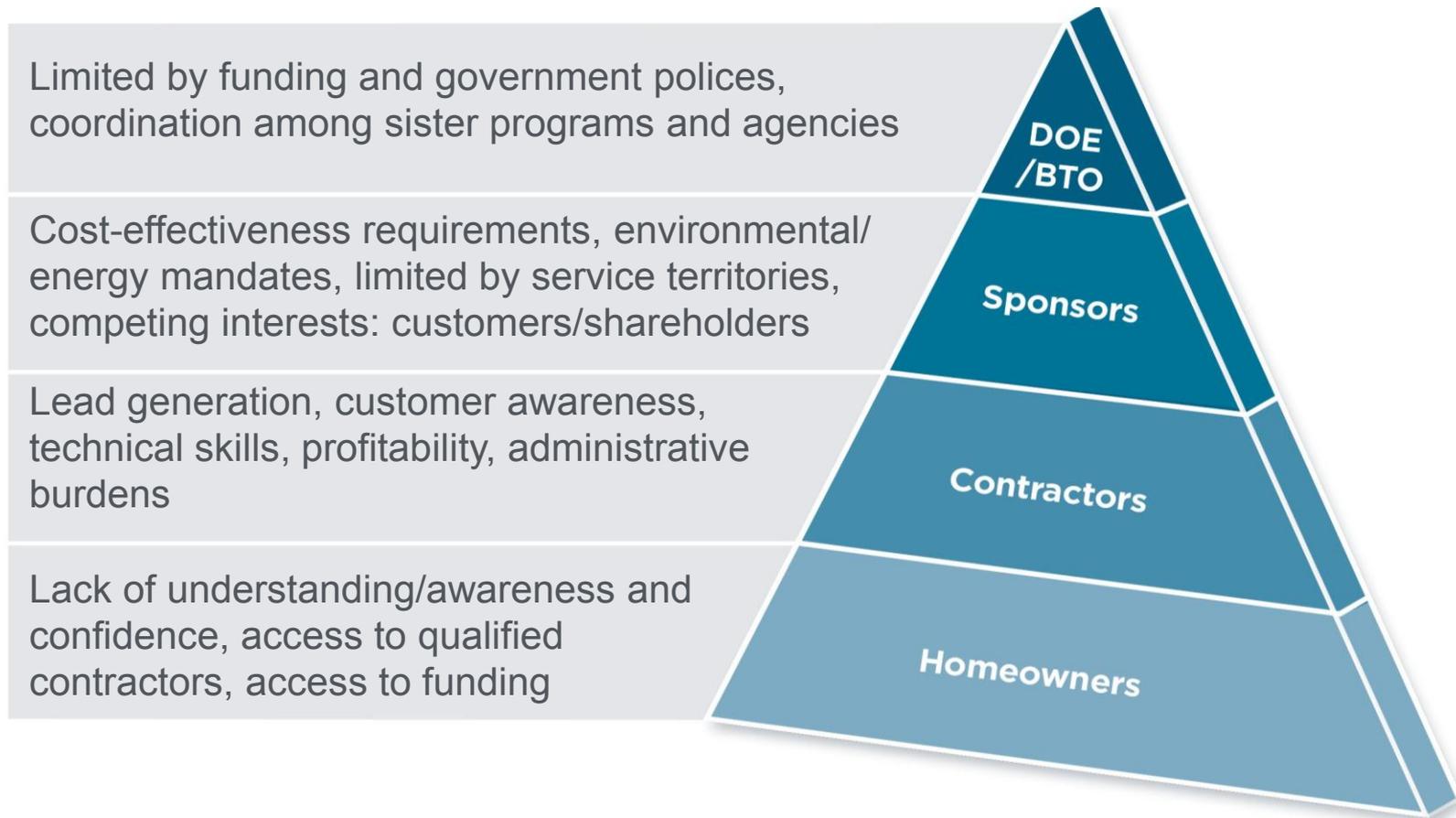
How is HPwES Delivered?



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

Approach: Key Issues and Challenges



HPwES seeks to overcome these barriers by establishing a uniform baseline service offering, minimum standards for quality, and providing access to support and resources needed to address these issues

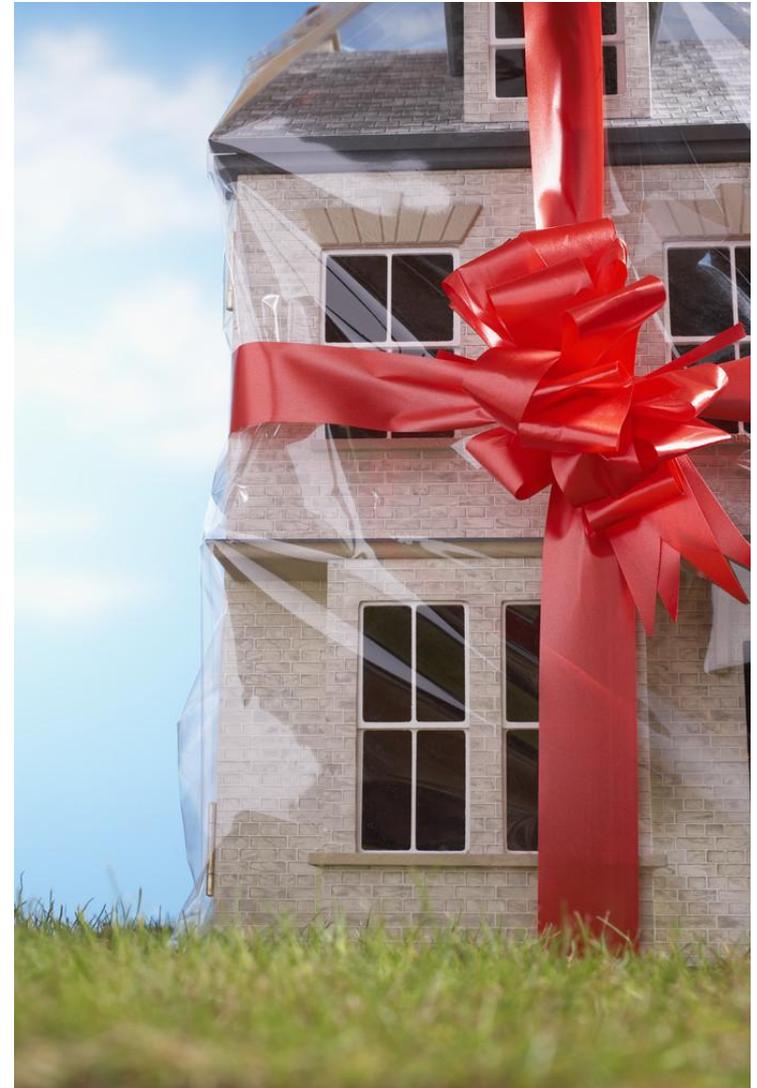
Approach: Addressing Key Issues

Tactic/Goal	Issue Addressed	Benefits
Provide a consistent and clear definition of the HPwES Program	Design and offer a platform that engages key players (Sponsors → Contractors)	Scalability, awareness
Propagate minimum standards and quality management systems	Ensure quality delivery of energy efficiency and H&S improvements through HPwES projects	Energy savings, carbon reduction
Facilitate infrastructure development that supports quality whole-house improvements	Increase awareness and market penetration for HPwES projects	Job creation, economic growth
Expand HPwES to take advantage of the homeowner's multiple decision points related to home improvements	Help homeowners fix their house/ solve problems	Increased comfort, quality of life

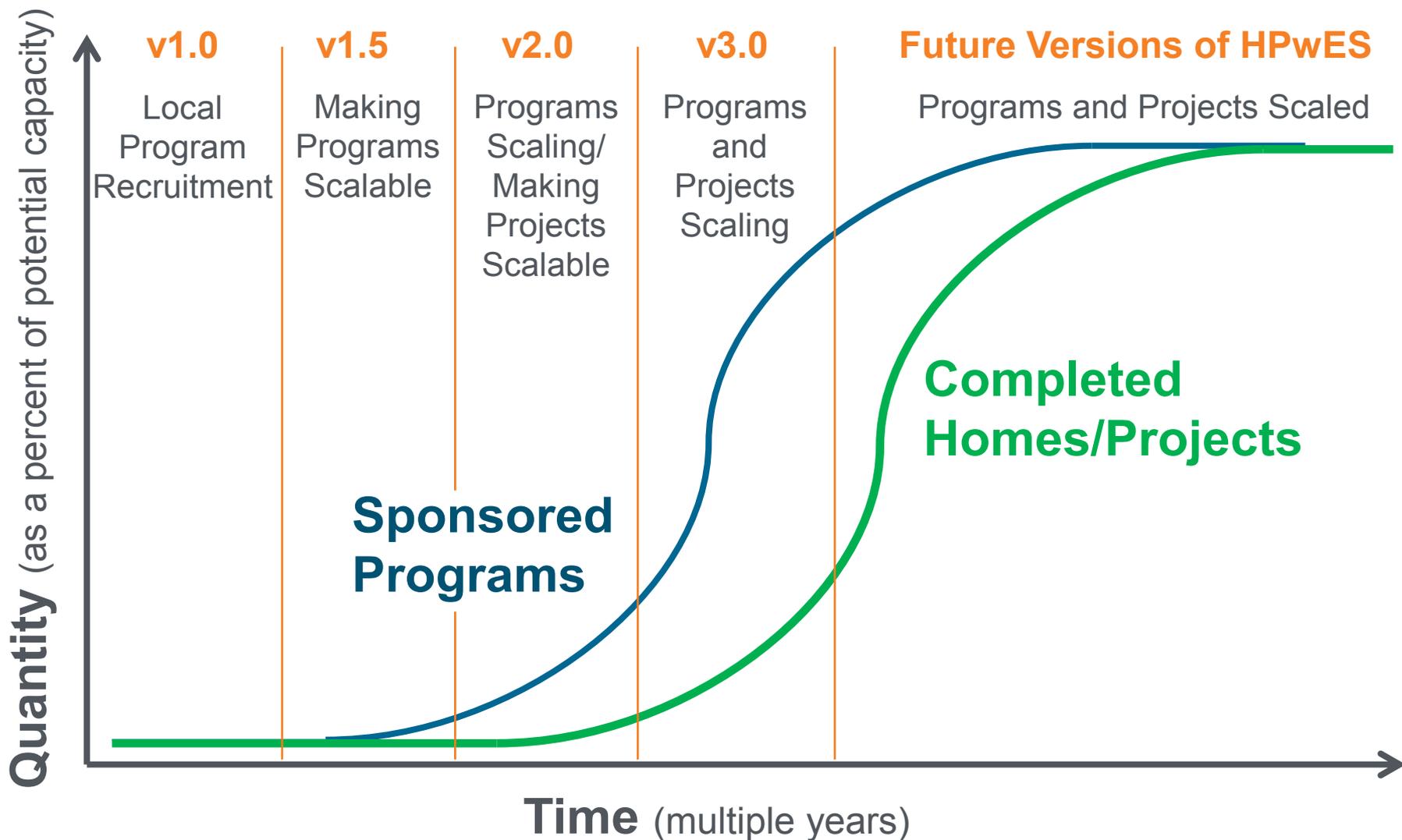
Approach: Distinctive Characteristics

- **Voluntary** public-private partnership program
- HPwES is a **process**, not an end product
- Requires a **whole-house approach**
- The ability to **effectively leverage resources** of public and private stakeholders is a key to the success of HPwES
- In 2012, every dollar DOE invested in HPwES resulted in over **\$86 in leveraged outside funds***

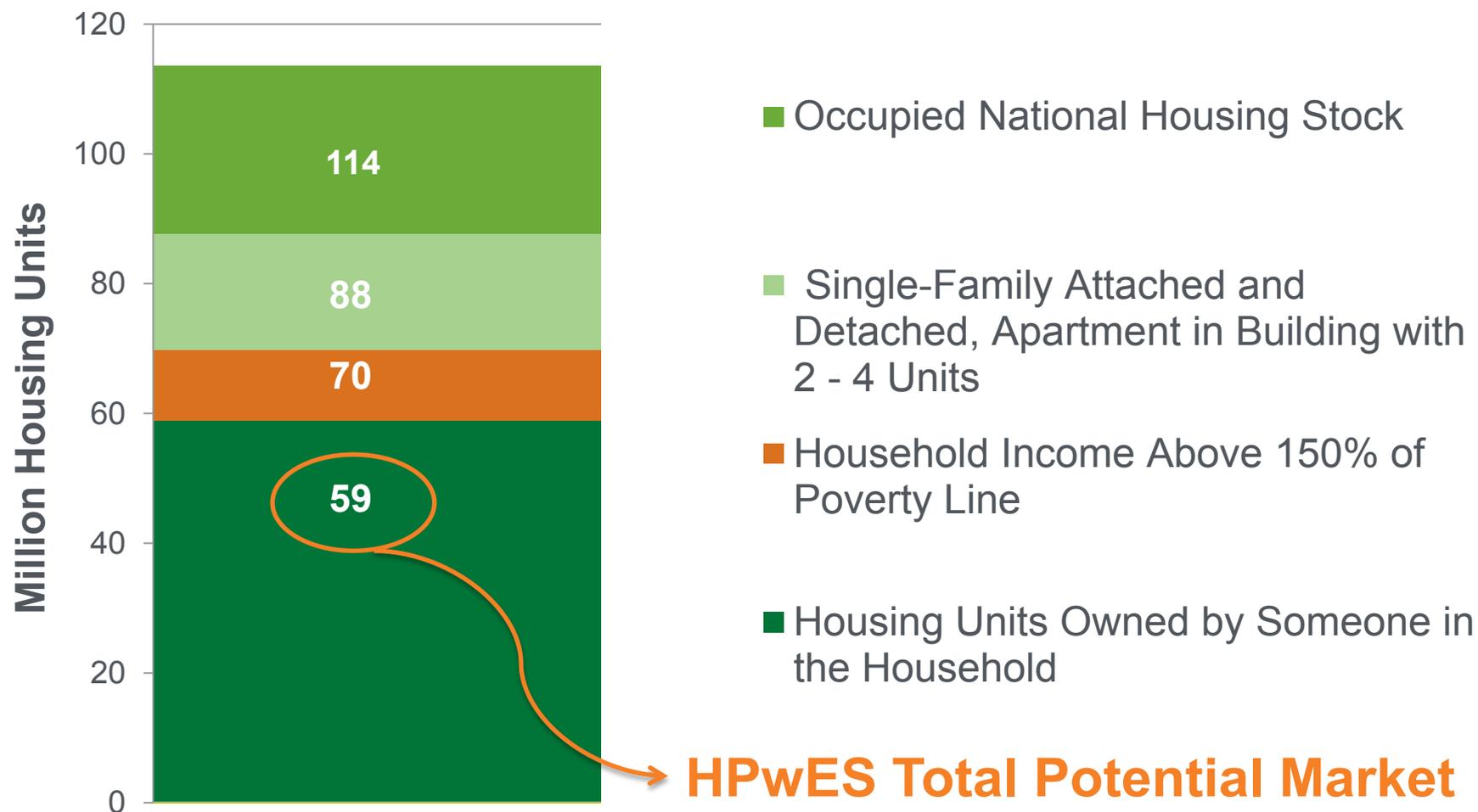
*Based on 28 of 50 HPwES Sponsors reporting data



Approach: Future Projection of HPwES Growth



Accomplishments and Progress: HPwES Total Potential Market



Source: 2009 Residential Energy Consumption Survey by the U.S. Energy Information Administration

Accomplishments and Progress: HPwES Market

**HPwES Total
Potential**

=

**59 million U.S.
Homes**

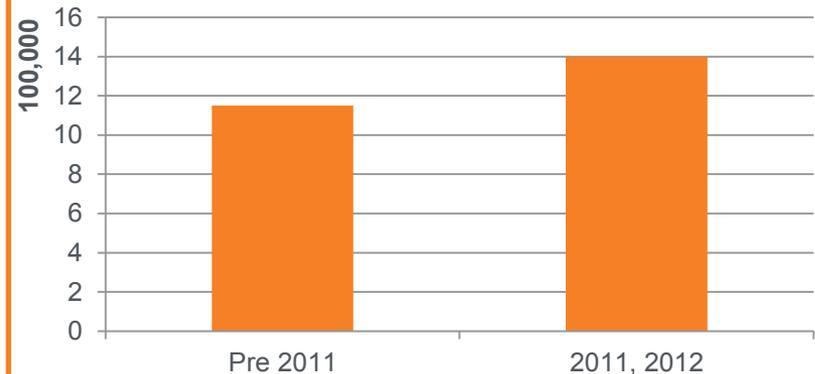
**Estimated Current
HPwES Reachable Market**

=

27 million U.S. Homes

- Active HPwES Sponsor's Service area covers approximately 46% of the U.S. population
- HPwES completed 250,000 projects* in the last decade
- Reaching nearly 1% penetration over its serviceable market of 27 million U.S. Homes

HPwES Completed Projects



Source: U.S. Census Bureau's Population Estimates Program

* Some households may have received HPwES services more than once during this period.

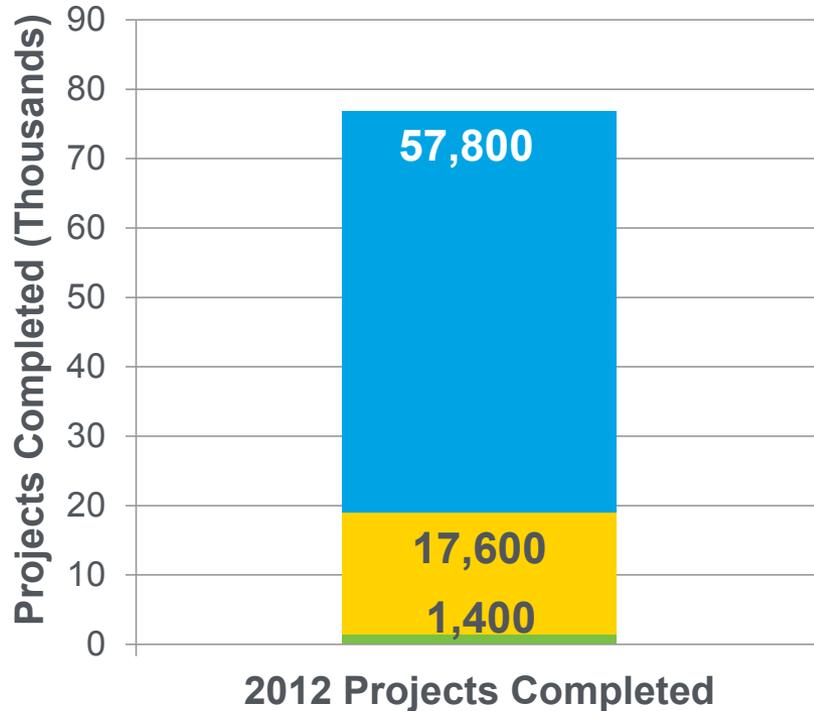
Our goal:

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



Improved data collection and analysis helps drive the HPwES Program strategy



■ **High-Volume Sponsors**

Share: 75%

Active Sponsors:8

Growth relative to 2011:32%

■ **Mid-Volume Sponsors**

Share: 23%

Active Sponsors:22

Growth relative to 2011:20%

■ **Low-Volume Sponsors**

Share: 2%

Active Sponsors:20

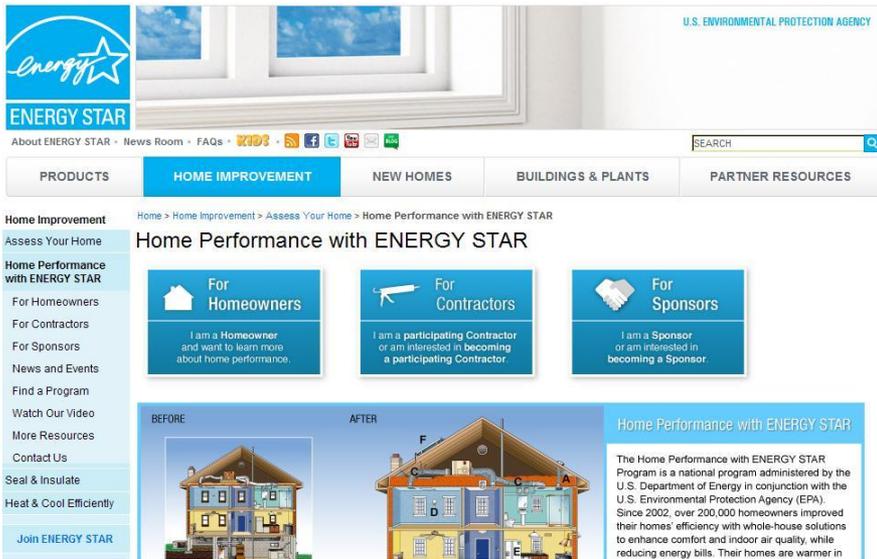
Growth relative to 2011:32%

- Proposed innovations to drive scalability with March 2012 v2 presentation
- Gleaned message to slow the process, leading to a 3- to 5-year action plan
- Seeking consistency and clarity with v1.5



Accomplishments and Progress

- Designed **Account Management** structure to provide support to 50 Sponsors
- Developed **3 Regional Collaboratives** to facilitate information exchange and coordination
- **Revised website** targeting our 3 main audiences; added:
 - ✓ recognition for Century Club Award winners
 - ✓ program results and production dashboards
 - ✓ clickable locator map with links to Sponsor pages



Enhanced data collection and reporting, including Account Management support, enables greater understanding of results and trends



<u>Metrics</u>	<u>CY2011</u>	<u>CY 2012</u>	<u>% Change</u>
Sponsors	50	50	No Net Change
Contractors	1,800	2,000	11%
Projects	61,800	76,800	24%
Field Inspections	18,600	26,400	42%

Revised Quarterly Template -- Overview



Use tabs to navigate among the 3 worksheets.



Accomplishments and Progress: Preliminary Data

- Annual Sponsor data on program results, including costs and savings were collected for first time in March 2013 (*on-going project*)
 - Annual data call designed to allow for analysis to identify **broad trends** and provide **directional guidance** to inform future program design and deployment of federal resources to support Sponsors



Preliminary results:

- 28 of 50 Sponsors reporting representing 40,500 project
- 709,810 MMBtu saved (all fuels combined)
- \$111.8 Million in Sponsor program costs (inclusive of admin, marketing, and incentive)

- Limitations of Annual Sponsor Data:
 - Variations in energy savings data collected by fuel type
 - Variations in program cost tracking (admin, marketing, incentives, etc.)
 - Variations due to maturity of program, market, and delivery infrastructure
 - Variations in calculation methodologies used to estimate predicted energy savings
- Future Analysis:
 - Quantify program costs and savings overall and average per project
 - Filter and segment results by program profile characteristics:
 - Maturity of the program
 - Targeted fuel(s)
 - Critical design elements such as direct-install, free energy assessments, whole-house incentives, financing, etc.

Project Plan & Schedule

(current and on-going deployment activities)

Summary					Legend							
HPwES Project Plan & Schedule		work completed			milestone & deliverable (planned)							
		active task			milestone & deliverable (actual)							
Task/Event	FY 2012				FY 2013				FY 2014			
	Q1 (Oct-Dec)	Q2 (Jan-Mar)	Q3 (Apr-Jun)	Q4 (Jul-Sep)	Q1 (Oct-Dec)	Q2 (Jan-Mar)	Q3 (Apr-Jun)	Q4 (Jul-Sep)	Q1 (Oct-Dec)	Q2 (Jan-Mar)	Q3 (Apr-Jun)	Q4 (Jul-Sep)
Stakeholder Outreach												
Account Management (ongoing)												
Meetings with ENERGY STAR/ EPA		◆		◆	◆	◆		◆		◆		◆
Conduct Webinars			◆	◆		◆						
Newsletter Published	◆	◆				◆	◆		◆			◆
HP Conferences (ACI, RESNET, etc.)		◆	◆		◆	◆		◆		◆	◆	
Communications												
ENERGY STAR Awards			◆				◆				◆	
Century Club Contractor Awards			◆	◆	◆		◆	◆			◆	
Website Revamp & Maintenance		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Case Studies & Articles				◆			◆	◆	◆	◆	◆	◆
Data Tracking and Reporting												
Quarterly Report Data Call/ Analysis		◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
Revised Quarterly Template Form					◆	◆						
Annual Report Data Call and Analysis						◆	◆			◆	◆	

Project Plan & Schedule

(current and future development)

Summary					Legend												
HPwES Project Plan & Schedule (continued)		work completed				active task				milestone & deliverable (planned)				milestone & deliverable (actual)			
Task/Event	FY 2012				FY 2013				FY 2014								
	Q1 (Oct-Dec)	Q2 (Jan-Mar)	Q3 (Apr-Jun)	Q4 (Jul-Sep)	Q1 (Oct-Dec)	Q2 (Jan-Mar)	Q3 (Apr-Jun)	Q4 (Jul-Sep)	Q1 (Oct-Dec)	Q2 (Jan-Mar)	Q3 (Apr-Jun)	Q4 (Jul-Sep)					
Strategy																	
Design program enhancements (v 2)			◆	◆													
Develop Program Report				◆		◆											
Revise Sponsor Guide (v 1.5)							◆										
Seek & Address comments																	
Launch v 1.5								◆									
Research/Pilots (working towards v 2.0)																	
Recognition & Labeling						◆	◆		◆	◆							
Enhanced Data & Reporting						◆	◆	◆	◆	◆							
Delivery Models						◆	◆	◆	◆	◆							

Project Budget: HPwES Budget is used to procure the support services of SENTECH (now SRA International)

Variances: None

Cost to Date: See table below

Cost-Share: None, except Program Sponsors pay local implementation costs, leveraging DOE expenditures by an estimated 86-to-1

Additional Funding: None, except some shared resources of BTO Residential Program to fund cross-cutting items, such as special articles in Home Energy Magazine

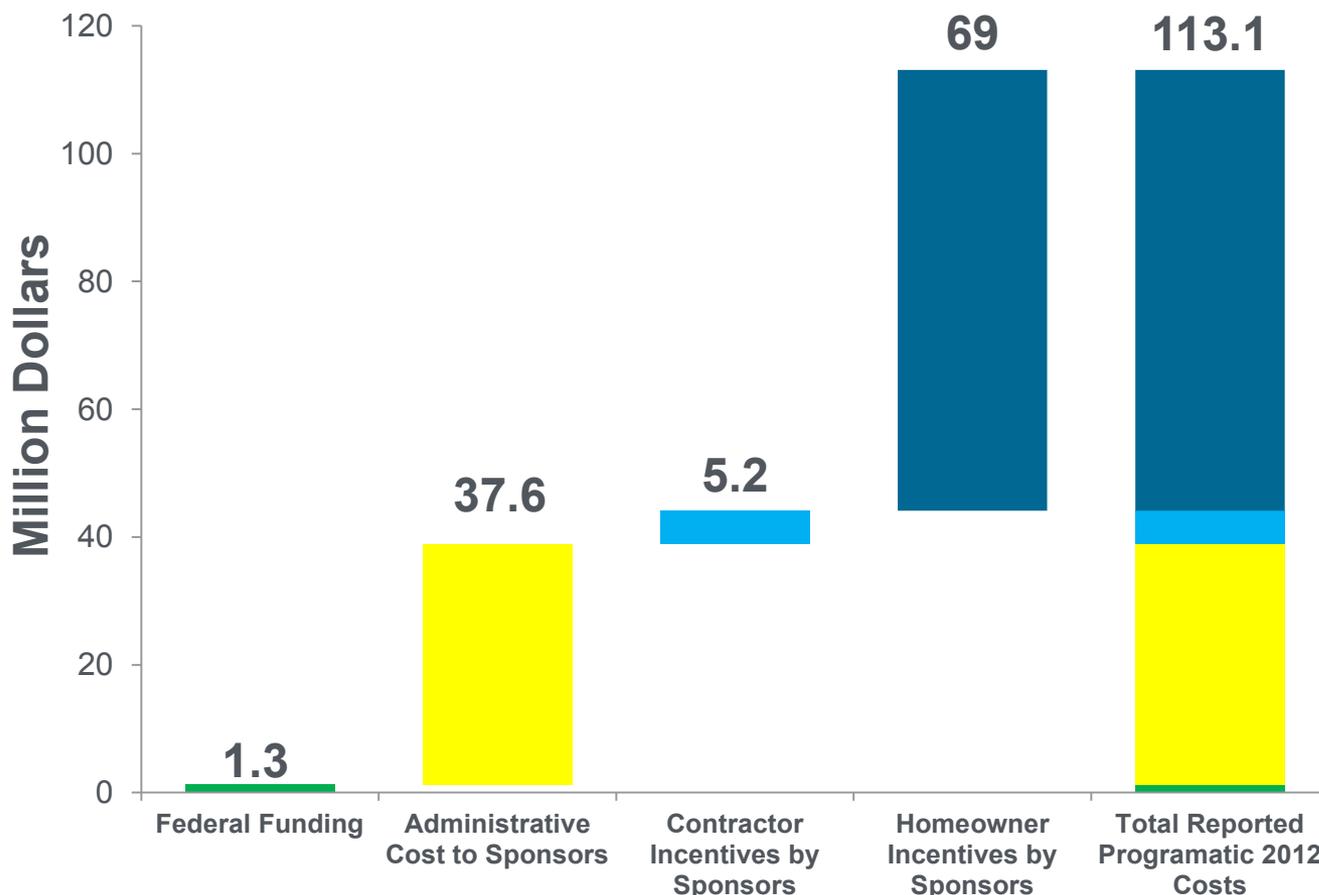
Budget History

FY 2011		FY 2012		FY 2013	
DOE*	Costs	DOE*	Costs	DOE	Costs to Date**
\$500,000	\$65,000	\$1,150,000	\$1,032,000	\$800,000	\$553,000

* Support started in late FY11. Unused budget each year is carried over to next year.

** FY12 funding was carried over into FY13 and used through March 31, 2013.

Project Budget: Leveraging Resources

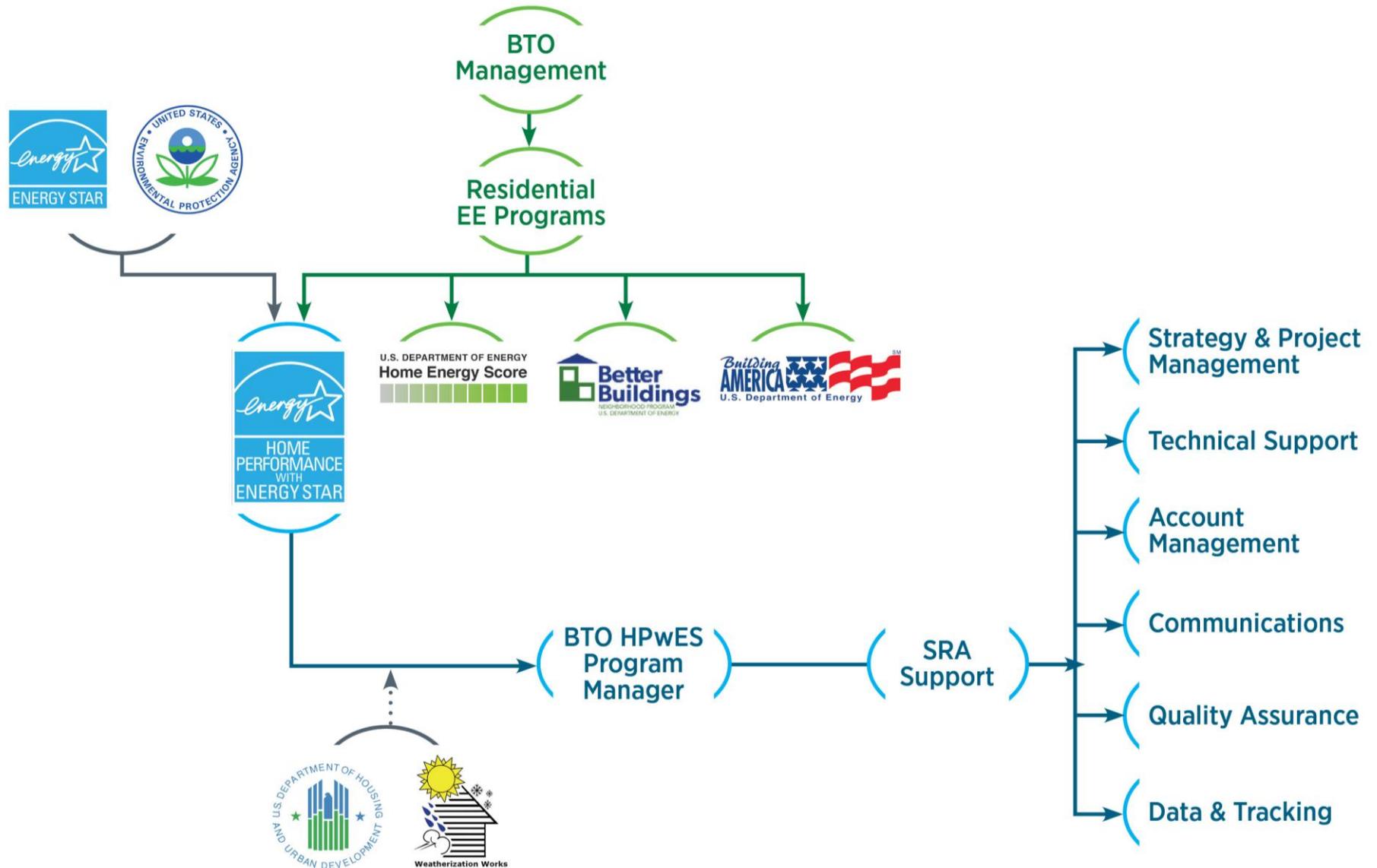


For every \$1 of federal investment, the program leveraged at least \$86 in state, local, and private funding.

This does not include consumer cost-share or additional investments made by contractors.

Source: Annual Reports submitted by 28 active Sponsors. Estimates on programmatic cost for the remaining 22 active Sponsors is not included.

Collaborations: Our Team and Network



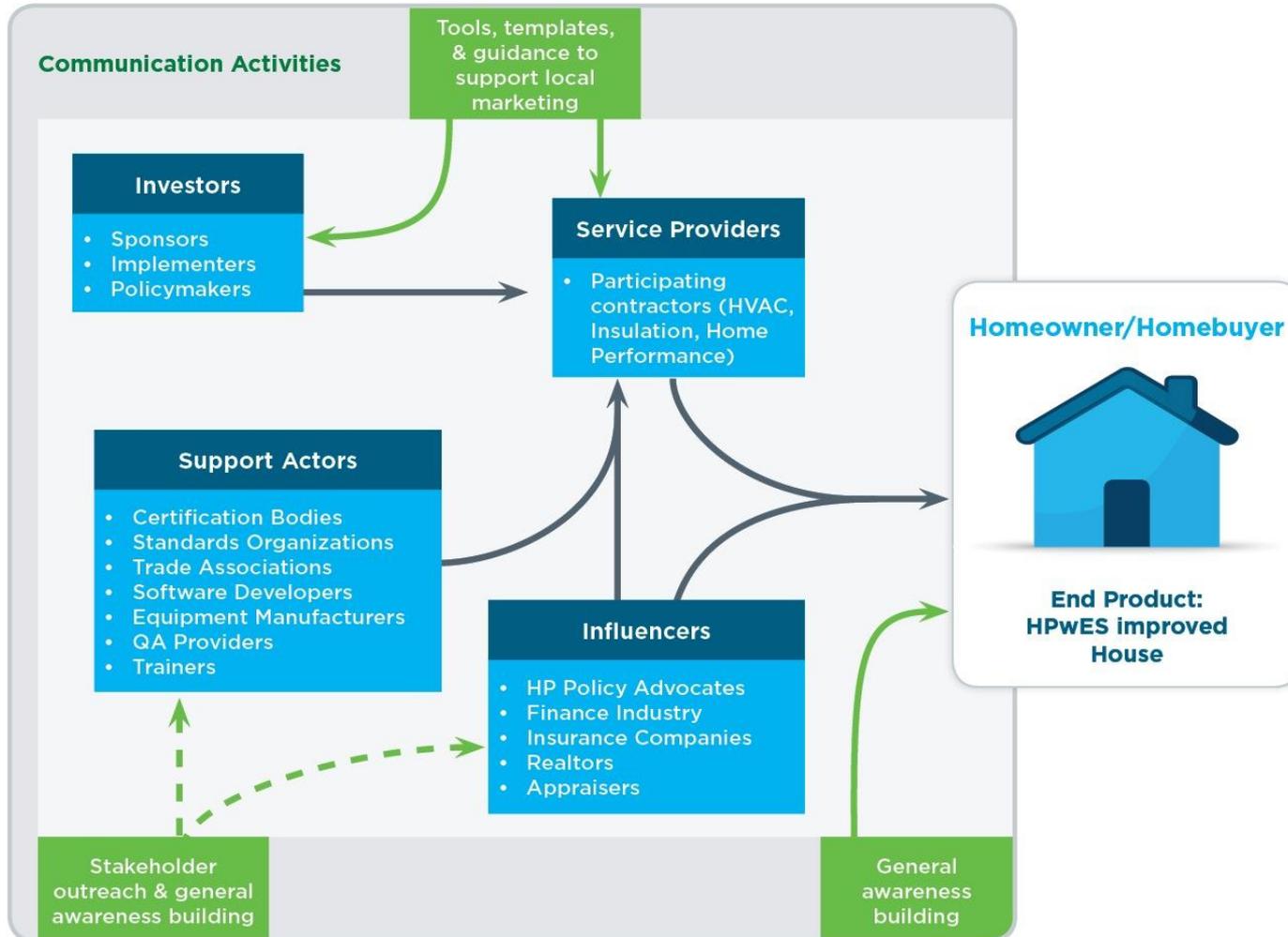
Technology Transfer and Market Impact: HPwES Sphere of Influence



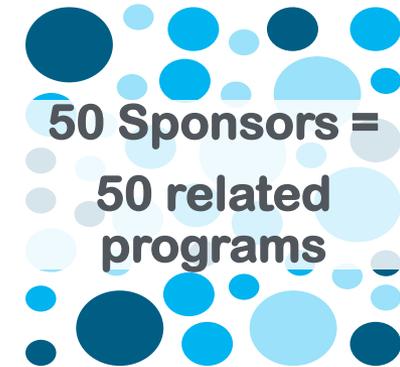
Secondary and tertiary market actors impacted by
information transfer and money flow resulting from HPwES

Technology Transfer and Market Impact: HPwES Communication Plan

DOE HPwES Supply Chain



Tactic	Results/Impact
<i>Quarterly Newsletters</i>	Issued 3 in FY 2012 with a 43% effective rate (this is the ratio of unique clicks to unique opens)
<i>Presentations</i>	Over 18 delivered since October 2011
<i>Webinars</i>	Peak attendance of 160 stakeholders for a single webinar
<i>Reports</i>	<ul style="list-style-type: none">• Over 4,000 downloads of the v2 proposal (since March '12)• Nearly 800 downloads of the Program Report (January '13)
<i>New Website</i>	Visits have grown by 300% (since revamp in December '12)
<i>Impressions</i>	Over 340 million (Source: ENERGY STAR Award Applications, 2013)
<i>Home Energy Magazine</i>	Authored and sponsored more than 4 articles and 3 compilations



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

Proposed and Future Work: Evolution of HPwES (V1.5 Updates)

- Reorganized **Sponsor Guide and Manual**
 - Requirements
 - Recommended Approaches
 - Tools and Resources
- Clearly defined minimum requirements for
 - Home energy assessments and reports
 - Diagnostic testing
 - Health & Safety
 - Low-rise multifamily buildings
- Updated data reporting procedures
 - Clearer definitions
 - Standardized reporting templates
- Updated Quality Assurance (QA) Requirements
 - Clearer definitions and minimum requirements
 - Systems based quality management option



Proposed and Future Work: Stage-Gate Approach for v2.0 Development

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

Strategy: Develop new approaches and technologies targeting this goal through a series of Stage-Gate projects.



- Phased management approach producing fact-based “go/no go” decisions
- Criteria for each progressive gate become more focused and precise

Proposed Pilots	Proposed Research
Recognition and Labeling	Systems Paths Approaches
Quality Assurance Systems	Enhanced Data and Reporting
New Delivery Models	Performance Metrics for HPwES

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.

Thank You!