

Home Performance with ENERGY STAR

2014 Building Technologies Office Peer Review



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

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Project Summary: Home Performance with ENERGY STAR

Timeline:

Start date: 2001

Planned end date: Ongoing

Key Milestones

1. Program Action Plan: Jan '13
2. Data Dashboards: Dec '13
3. Industry Work Group: Jan '14
4. Sponsor Guide (v1.5): Mar '14

Budget:

Total DOE \$ to date: \$2,711,036

Total future DOE \$: \$1,175,000

Target Market/Audience:

- 61 million US homes in the existing homes market
- Sponsors: Utilities; state & local government entities; NGOs; and other organizations
- Contractors: any an organization or company providing whole house related services , including assessments, installation of measures, energy consulting, or other related services

Key Partners:

48 Home Performance with ENERGY STAR Sponsors
Regional Energy Efficiency Organizations
> 2000 Participating Contractors
Home Performance Trades, Financial Institutions, and Manufacturers
Training and Standards Organizations

Project Goal:

To facilitate the achievement of scale in the home performance industry by demonstrating value and moving toward replicable delivery models that support expanded participation in the Home Performance with ENERGY STAR Program

Purpose and Objectives



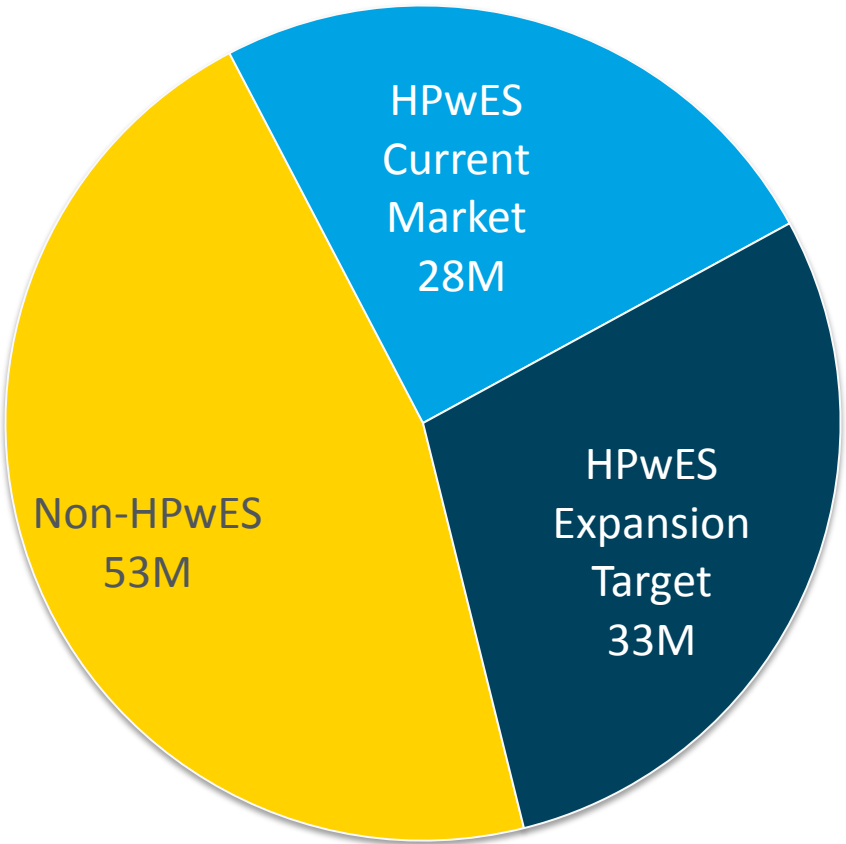
Problem Statement:

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 the existing homes market.

Audience:



Purpose and Objectives: Target Market in Existing Residential



114 Million Total U.S. Homes

HPwES total potential market = 61.1 million households

HPwES' currently reachable market based on current Sponsors' footprint is 46% of the total potential market, or 28.1 million households.

With over 300,000 projects completed, HPwES penetration rate to date is 1.1% of its total current market.

“Non-HPwES” households identified based on WAP eligibility and lack of owner occupancy.

Sources: 2009 Residential Energy Consumption Survey by the U.S. EIA and U.S. Census Bureau's Population Estimates Program

Purpose and Objectives: Impact for HPwES

Our Vision

Home Performance with ENERGY STAR is accessible to all American households.

Our Goal

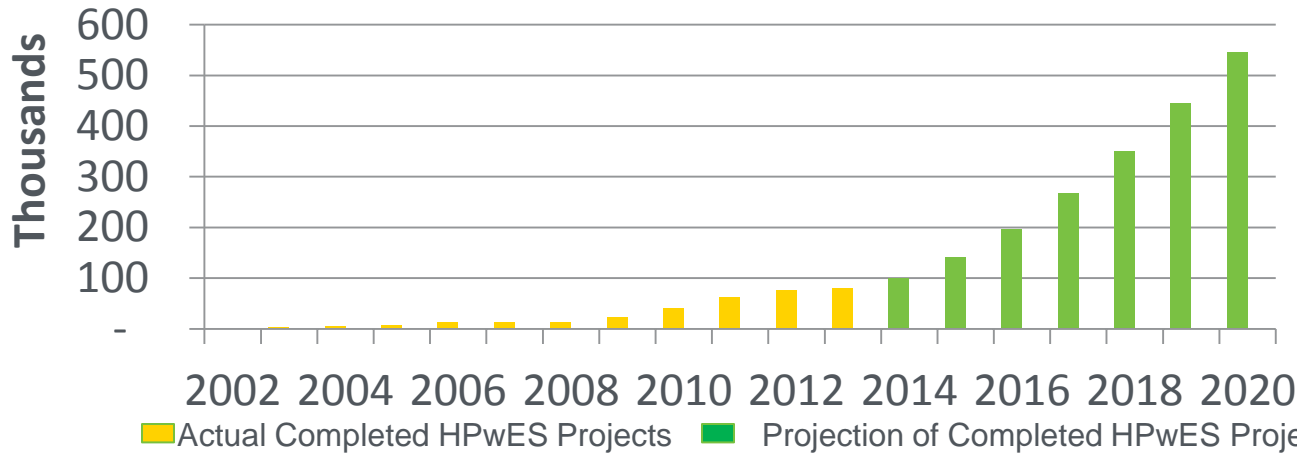
To facilitate the achievement of scale in the home performance industry by **demonstrating value** and moving toward **replicable delivery models** that support **expanded participation** in the Home Performance with ENERGY STAR Program.

Monitoring our Progress

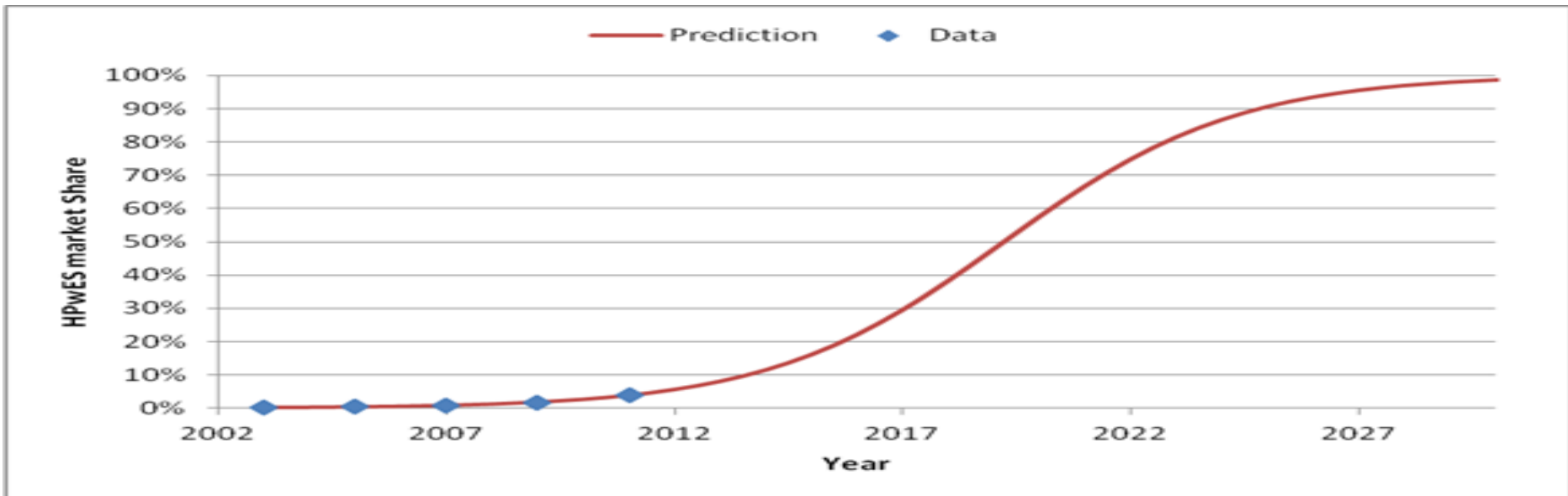
- Increase sponsor participation (# of sponsors and type)
- Increase traction (e.g. results) for sponsors and participating contractors
- Increase number of HPwES projects (# of completed projects)
- Adherence with HPwES program requirements (# of onsite inspections; and programs meeting QA requirements)
- Increase recognition for HPwES brand (# of impressions)
- Increase participation by trades (# of participating contractors and % of type)
- Increase performance (energy savings and related qualitative data on comfort, safety, etc.)

Projected Annual HPwES Production Based on Market Growth

(technical potential based on hypothetical S-curve projection)



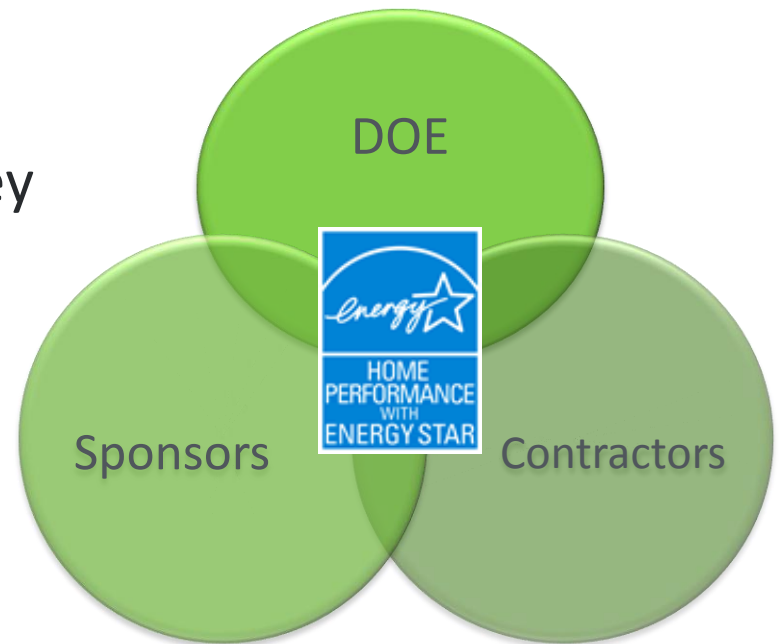
Based on growth estimates, in 2020 HPwES could produce 500K projects and reach approximately 33% market share.



Approach: Distinctive Characteristics



- **Voluntary** public-private partnership program
- **Effectively leveraging resources** of public and private stakeholders is a key to HPwES success
- In 2013, every dollar DOE invested in HPwES resulted in over **\$110 in leveraged outside**



Approach: Key Issues and Challenges

Program Challenges	Market Barriers	Issues for National HPwES to Address
Perceived program value and market awareness	Lack of industry and homeowner awareness; lack of credible information	<ul style="list-style-type: none"> • Homeowner understanding of the value proposition for home performance is lacking • Market understanding and awareness of HPwES is low • Misconceptions exist regarding the cost vs. value of a HPwES project • Artificial barriers to participation are inhibiting market penetration
Program consistency and effectiveness of delivery	Limited market readiness	<ul style="list-style-type: none"> • Perceived program administrative burden and complexity inhibits broader program acceptance • Business case to appeal to broader range of trades is lacking
Program cost efficiency	Industry and homeowner cost hurdles	<ul style="list-style-type: none"> • Lack of clarity on minimum program requirements to reduce local program production, data collection, and reporting costs • Costly approaches to conducting QA processes • Missed opportunities to apply the HPwES approach during system specific projects

Approach: Our Growth Strategy

Our Challenges	Grow <u>Within</u> Our Footprint	Grow Our <u>Overall</u> Footprint
<p>Value Proposition & Market Awareness</p> <p>Program Consistency & Effectiveness of Delivery</p> <p>Program Cost Efficiency</p>	<ul style="list-style-type: none">✓ Provide additional resources and tools✓ Identify and support improved methods for better program administration	<ul style="list-style-type: none">✓ Ramp up recruitment and onboard new Sponsors✓ Expand opportunities for participation among new stakeholder groups

Next Steps: Four New Initiatives to Reduce Cost and Increase Scale

HPwES Delivery Models

- ✓ Expand how the whole –house approach is delivered by enabling participation of multiple market actors supporting a variety of pathways for improved home performance

Recognition & Labeling

- ✓ Take advantage of ENERGY STAR marketing platform to encourage adoption of HPwES

Demonstrating Value through Data

- ✓ Promote the business case for adoption of the whole-house approach and investment in HPwES

Quality Assurance

- ✓ Streamline quality assurance procedures and requirements to reduce administrative burden on Sponsors and contractors while improving results

Progress and Accomplishments

Active Stakeholder Engagement

- Program Report Action Plan (3 to 5-year roadmap) – Jan. '13
- Gathered stakeholder input for codifying HPwES – Jul '13
- Initiating industry-wide discussion on expanding HP (getting to v2.0) – January '14

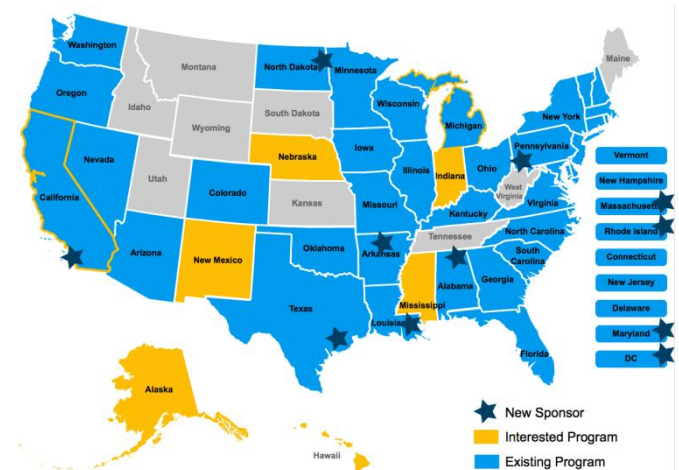
Improved Support for Sponsors

- Account Management with technical support for program design & implementation – ongoing
- Regional collaboratives established in SW, SE, and MW; pursuing for NE and NW – ongoing
- Released Sponsor Guide (v1.5) – March '14
- Clarified data definitions and procedures, including streamlined annual and quarterly templates – Summer '13
- Development of value metrics to measure program impact and cost-efficiency – Fall '13
- Coordination with Kentucky to launch first “incremental measure” pilot initiative – Fall '13
- Restructured QA process to align with ISO principles, outlining an approach for Sponsor QMS pilots – Summer '13
- Online searchable project dashboards – Dec '13

Our reach in Oct. 2011



Our reach in Oct. 2013



New programs and interest are growing our footprint

Project Integration and Collaboration: Snapshot of HPwES Leaders

2014 Accomplishments	Achievement
4 Sustained Excellence Winners	Continued leadership in offering through superior energy efficiency programs and services
3 Partner of the Year for Program Delivery	Distinctive accomplishments in established and emerging HPwES markets
2 ENERGY STAR Excellence	Increased market share for HPwES through comprehensive outreach, education, and marketing efforts
4 Housing Innovation Awards	Unique forward thinking business practices to realize success in their local HPwES markets
22 Work Group Members	Industry leaders participating in discussions to help advance the scalability of HPwES

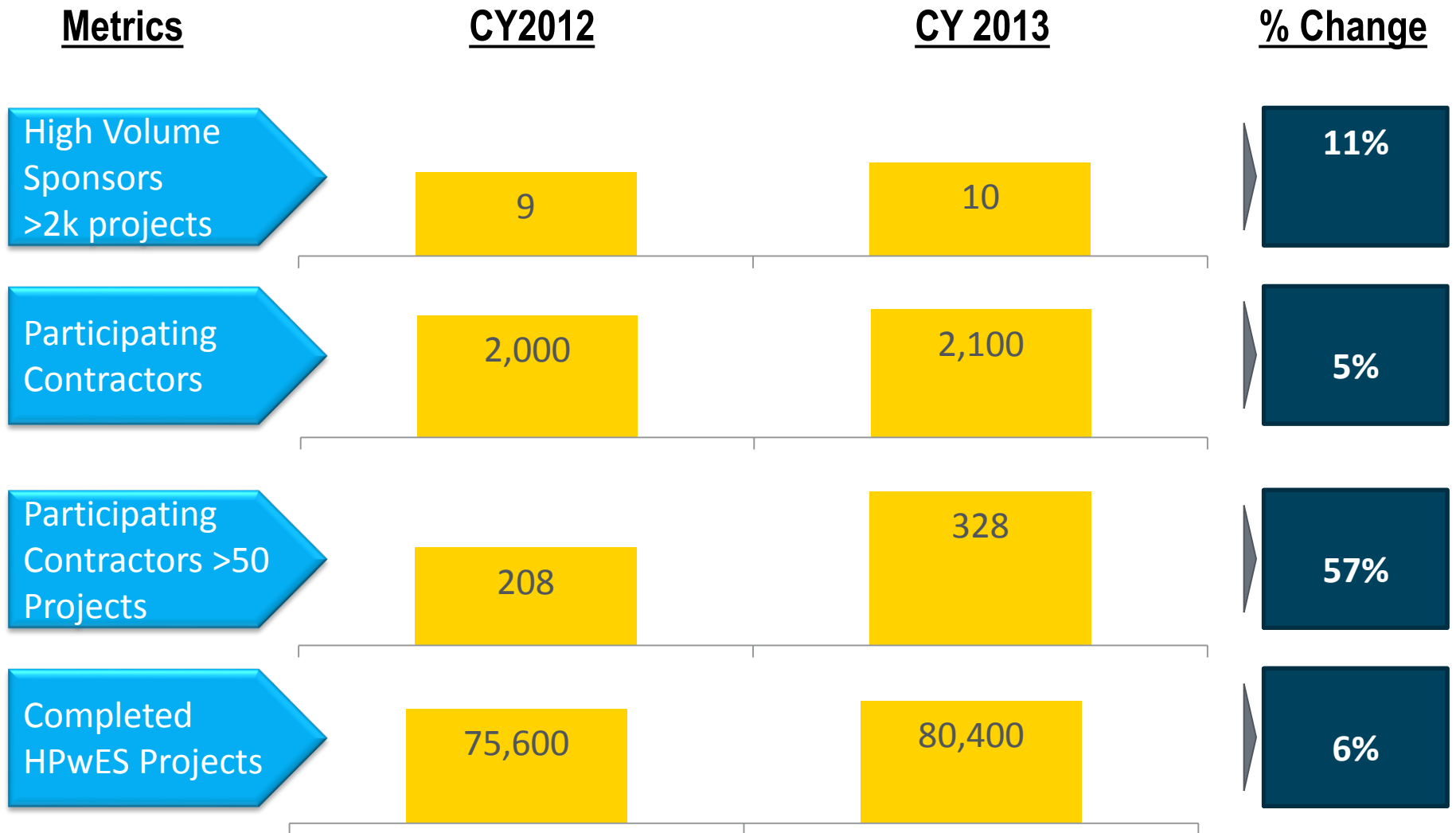


focus on energy™

The power is within you.



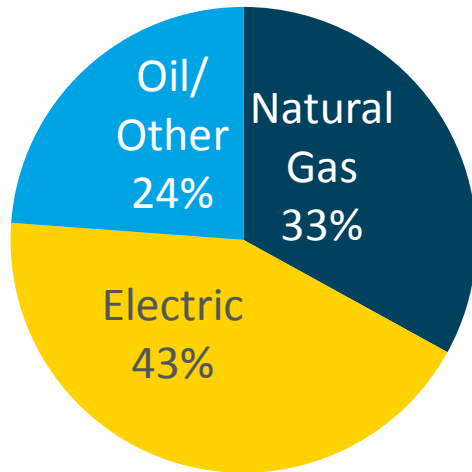
Progress and Accomplishments: A Look at HPwES Metrics



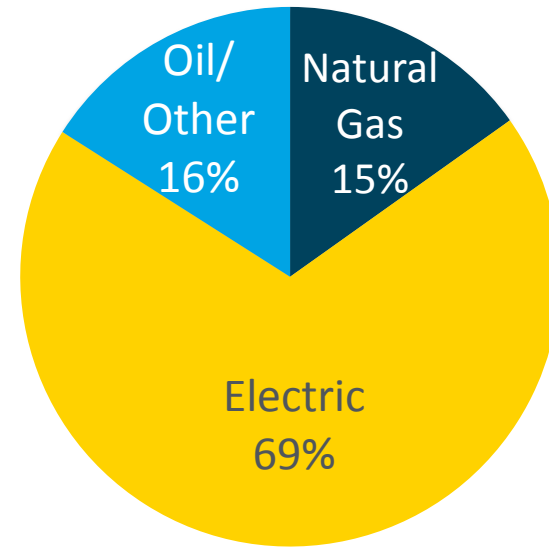
Progress & Accomplishments: Annual Energy and Environmental Savings Impact of HPwES

The HPwES Program saved an estimated 1.8 Trillion Btu's in homeowners' annual energy consumption for 2012.

Energy Savings
Distribution By Fuel Type



CO₂ Reduction by Fuel Type

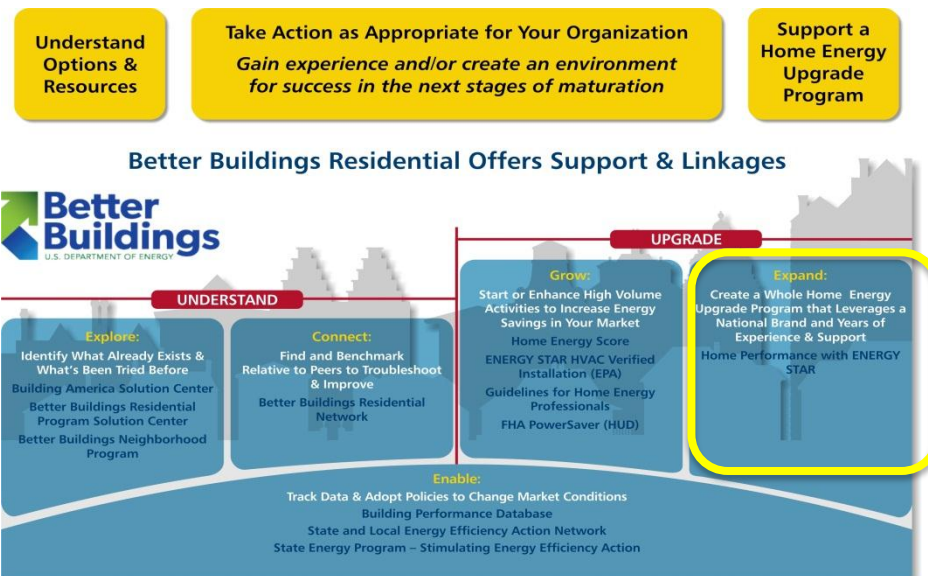


The HPwES Program reduced annual emissions by an estimated 219,000 Metric Tons of CO₂ in 2012.

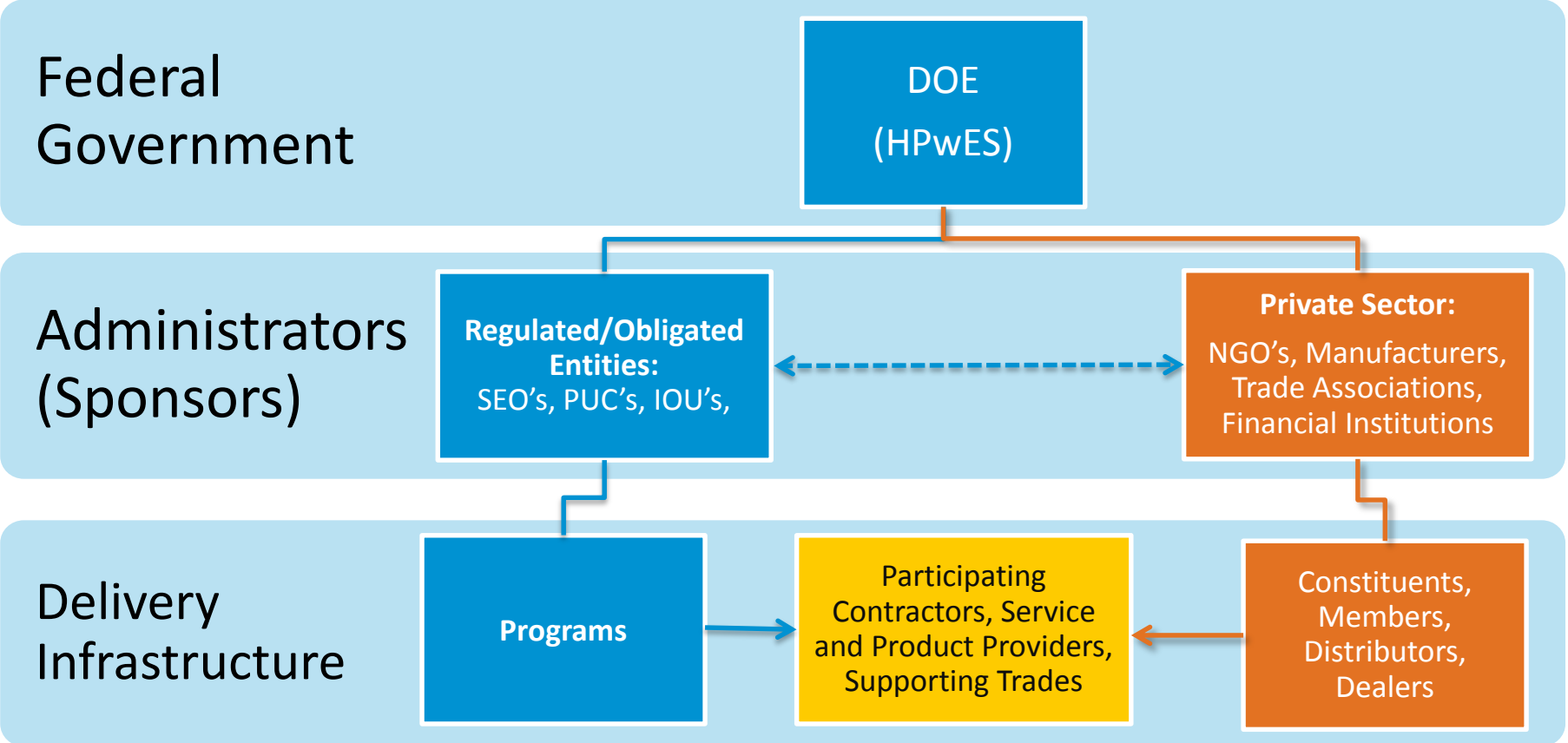
Project Integration and Collaboration: HPwES Leverage of DOE Residential Ecosystem

- Better Buildings Residential Network
 - Program benchmarking
 - Stakeholder outreach
 - Leverage peer exchange opportunities
- Better Buildings Residential Program Solutions Center
 - Information sharing
 - Encourage HPwES Sponsors and participants to submit information to be included in the SC
 - Encourage use of SC by new and existing Sponsors to improve program design
- Building America
 - Incremental Measures Initiative
 - Collaborate with BBR & BA to demonstrate how incremental measures can be integrated into HPwES approach
 - BA Research Teams
 - Connect HPwES Sponsors to BA research teams to facilitate feedback between implementation and research sectors
 - FY14 Projects & FY15 FOA
 - HPwES Team provides recommendations for BA and Lab projects to support on-going development of HPwES Program and HP industry

- Home Energy Score
 - Use the score in assessment reports, completion certificates, and labeling schemes
 - Coordination with Greening MLS efforts
 - Collaborate on partner recruitment efforts
- Weatherization Assistance Program
 - SWS/Workforce Guidelines
 - Promote adoption of SWS as a reference tool for workforce training and QA
 - Promote use of accredited training centers by Sponsors



Project Integration and Collaboration: HPwES Stakeholders



- Both paths are necessary to achieve scale.
- DOE's challenge is to establish a platform where both paths can co-exist and achieve their own goals while leveraging their respective resources.

REFERENCE SLIDES

Project Budget: Home Performance with ENERGY STAR

Project Budget: HPwES budget is used to procure the support services of SENTECH (now SRA International) since late FY2011. A combined total of \$1,097,000 was expended in FY2011 and FY2012

Variances: None

Cost-Share: None, except Program Sponsors pay local implementation costs, leveraging DOE expenditures by an estimated 110-to-1

Cost to Date: See table below

Additional Funding: None

Budget History

FY2013 (past)		FY2014 (current)		FY2015 (planned)	
DOE Budget	Expended	DOE Budget	Expended	DOE Budget	Expended
\$1,125,000	\$1,116,041	\$1,150,000	\$497,995*	\$1,175,000	N/A

* Costs as of February 28, 2014

Project Plan and Schedule: Home Performance with ENERGY STAR

Project Schedule												
Project Start: October 2012	Completed Work											
Projected End: Ongoing	Active Task (in progress work)											
	◆ Milestone/Deliverable (Originally Planned)											
	◆ Milestone/Deliverable (Actual)											
	FY2013				FY2014				FY2015			
Task	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)
Past Work												
2013 HIA	◆											
Program Report		◆										
2013 ENERGY STAR Awards and Century Club Contractors			◆									
2013 ACI Presentations (including draft Sponsor Guide, draft Annual Data report, QMS conceptualization)				◆								
Current/Future Work												
Sponsor Guide (v1.5)						◆		◆	◆			
Establish and Convene Industry Work Group						◆	◆					
Recruit new Sponsors												
Support Existing Sponsors												
Awards and Recognition							◆		◆		◆	
Data Tracking Analysis							◆	◆				
Recognition and Labeling Initiative							◆					
Delivery Models Initiative							◆					
QMS Initiative							◆					