Home Performance with ENERGY STAR
Advancing Partnership Models

Ely Jacobsohn, HPwES Program Manager, U.S. DOE
Courtney Moriarta, Technical Lead, SRA

ACI National Home Performance Conference
May 6, 2015
New Orleans, LA
Session Agenda

1. Overview of current national landscape for Home Performance with ENERGY STAR
2. Update on HPwES Stakeholder Work Group process and results
3. Update on current HPwES pilot activities
4. Summary and Call to Action
5. Q&A
Understanding Challenges and Barriers in the HPwES Market

<table>
<thead>
<tr>
<th>Program Challenges</th>
<th>Market Barriers</th>
<th>Issues for National HPwES to Address</th>
</tr>
</thead>
</table>
| Perceived program value and market awareness | Lack of industry and homeowner awareness; lack of credible information | • Residential market understanding of the value proposition for home performance is lacking  
• Artificial barriers to participation are inhibiting market penetration |
| Program consistency and effectiveness of delivery | Limited market readiness | • Local program administrative burden and lack of effective residential portfolio integration inhibit broader program acceptance  
• Specific business case to appeal to broader range of trades is lacking |
| Program cost efficiency | Industry and homeowner cost hurdles | • Costly approaches to conducting QA processes and data exchange  
• Missed opportunities to apply the HPwES approach during system specific projects |
“Typical” HPwES Sponsor Profile – legacy program delivery model

A typical HPwES Sponsor is:
- A regulated entity
- Subject to evaluation, monitoring, and verification
- An electric/gas utility OR a state-sponsored non-profit, trust, or authority

A typical HPwES Sponsor’s program includes:
- Discounted or free home energy assessments
- Consumer rebates
- Low interest financing
Limitations and Constraints of the “Typical” HPwES Sponsor Model

- Cost effectiveness tests
- Politics
- Inconsistent and uncertain budgets
- Procurement, legal
- Liability issues
- Split incentive for utilities
- Social equity – public program paradigm
- Gaps in coverage by territory

**Example 1:** In the Northwest, cost-effectiveness tests have deemed air sealing homes ineligible, but air sealing is a fundamental component of most good home performance projects.

**Example 2:** IOU’s must balance the needs of shareholders to maintain or increase revenues while at the same time reducing energy consumption (i.e. sales) to meet the needs of rate-payer funded efficiency programs.
Home Performance with ENERGY STAR Vital Statistics

- Completed over 400,000 projects since 2002
- 27,831 projects were completed in Q4 2014 (20% growth over Q4 2013)
- 93,220 projects were completed in 2014 (15% growth over 2013)
- On average, each project realizes 22 MMBtu of energy savings (all fuels combined)
- The reported average invoice cost of a HPwES project is $5,600 (ranging between $600 – $17K)
HPwES Coverage Area by County (estimated)

Average Expenditure Per Project ($)

# of Projects Annually

Data Source: Harvard Joint Center for Housing Studies
Update: HPwES Stakeholder Work Group Process

January 2014
A voluntary ad hoc work group was established to help inform DOE’s exploration of strategies to improve upon the HPwES model and support a sustainable and scalable future for the HPwES program.

Spring to Fall 2014
Ad hoc sub-committees comprised of Work Group members and non-members assisted in deeper dive activities focused on specific topic areas identified via the Work Group process.

WG Kickoff Webinar – 12/3/13
WG Mtg at ACI Detroit – 4/29/3/14
WG Mtg at Wash DC – 11/6/14
WG Mtg at ACI NOLA – 5/5/14
Work Group Activity: Aggregator Road Mapping Process

• A sub-committee of Work Group members and non-members assisted in the development of the “roadmap”

• The process explored market factors related to the potential for a new form of HPwES partner, deemed “the aggregator” assuming:
  
  – *The Aggregator* could represent a wide range of business interests in both the public and private sector.

  – *The Aggregator’s* primary goal in partnering with HPwES is to gain access to the aggregated benefits accrued over a large volume of HPwES projects, for possible resale or to satisfy other business interests
### Key Partners

- **Federal**
  - EPA, HUD, Labs, Building America, Home Energy Score, Better Buildings Residential Network
- **Up-stream**
  - Energy wholesalers, capital markets
- **Mid-Stream**
  - Current Sponsors, Electric and gas utilities, state agencies, quasi-governmental agencies, energy efficiency utilities, energy marketers
- **Down-Stream**
  - Financial institutions, consumer service providers, insurance providers

### Key Activities

- **Develop** market-based QA oversight model similar to ES New Homes and Products
- **Develop** eligibility/qualifying criteria including demonstration of business viability
- **Deploy** guidance & tools to support uptake
- **Validate** value proposition with most relevant customer segments first
- **Promote** & demonstrate methods for valuing benefits to sell
- **Promote** secondary market buy-in

### Key Resources

- HPwES Team, HPwES Stakeholder Work Group, EPA Residential Team, PowerSaver Team, Building America research, BBNP data and results, HPwES data, SUI market research and proof of concept, market-driven innovation and proof of concept

### Value Propositions

- **Leveraging** the ENERGY STAR brand
- **Third-party** endorsement
- **Standards** and quality assurance
- **Access** to contractors
- **Access** to downstream customer leads
- **Market** differentiation
- **Increased** sales of products or services
- **Reselling** of monetized benefits
- **Reduced** warranty claims and callbacks
- **Improved** customer satisfaction
- **Recognition** opportunities for Aggregators, contractors, and homes, other TBD by customer segment...

### Customer Relationships

- HPwES Sponsor, ENERGY STAR Partner, Sponsor service provider, Contractor service provider, something new?

### Customer Access Channels

- Public energy efficiency programs, ENERGY STAR, BBNR, Building America teams, trade publications and events, conferences, Sponsor network, contractor network, stakeholder network

### Customer Segments

- **Up-Stream**
  - Building product manufacturers, building equipment manufacturers, appliance and lighting manufacturers, distributors
- **Mid-Stream**
  - Training providers, credentialing organizations, QA providers, trade associations, supply houses, equipment suppliers, energy marketers, energy data services, program implementers, contractor service providers
- **Down-Stream**
  - Financial institutions, consumer service providers, retailers, community based organizations, contractors, healthcare providers

### HPwES/DOE Investment

- HPwES Team support, HPwES Stakeholder Work Group Support
- **Leveraging other resources:**
  - SUI Project
  - EERE and Lab data projects (BPD, SEED, etc.)
  - Building America new research
  - Collaboration with EPA and HUD

### HPwES/DOE Benefits

- Reach a broader market, achieve greater energy savings (breadth and depth), work toward scale, establish HPwES as the preferred and most recognized channel for delivering energy improvement services to the residential market

---

*Based on “The Business Model Canvas” designed by Business Model Foundry, the makers of Business Model Generation and Strategyzer*
Key Activities: Qualifying Criteria and Supporting Tools and Resources

- Develop qualifying criteria for a non-traditional “sponsor” partner

- Deploy tools to support uptake (financing, data, etc.)
  - Examples: HPXML guide, data initiatives (SEED, BPD, etc.), solution centers

What other tools are needed to engage private sector?
Key Activities: Develop the QA Oversight Process

• Develop QA oversight model
  • Coordinating with EPA to align QA oversight structure with existing QA model(s) used for other ENERGY STAR programs

• Outstanding Questions:
  • Can the ISO/ANSI model work in Home Performance?
  • Can a regulated transaction satisfy the need for third-party oversight?
  • Can a performance based model help solve the QA dilemma?
Key Activities:
Deploy pilots and support primary and secondary market value proposition

Short Term
• Validate the value proposition with each customer segment representing a viable partner

Mid Term
• Pilot different models and strategies with new and existing partners

Longer Term
• Promote methods for valuing benefits to sell
• Promote secondary market buy-in
### Key Partners

- Federal
- EPA, HUD, Labs, Building America, Home Energy Score, Better Buildings Residential Network, Upstream Energy wholesalers, capital markets
- Midstream Current Sponsors, Electric and gas utilities, state agencies, quasi-governmental agencies, energy efficiency utilities, energy marketers
- Downstream Financial institutions, consumer service providers, insurance providers

### Key Activities

- Value Propositions
- Customer Relationships
- Customer Segments

### Value Propositions

- **Leveraging** the ENERGY STAR brand,
- **Third-party** endorsement,
- **Standards** and quality assurance,
- **Access** to contractors
- **Access** to downstream customer leads,
- **Market** differentiation,
- **Increased** sales of products or services,
- **Reselling** of monetized benefits,
- **Reduced** warranty claims and callbacks,
- **Improved** customer satisfaction,
- **Recognition** opportunities for Aggregators, contractors, and homes,
- **Other TBD by customer segment**

### Customer Segments

#### Up-Stream
- Building product manufacturers, building equipment manufacturers, appliance and lighting manufacturers, distributors

#### Mid-Stream
- Training providers, credentialing organizations, QA providers, trade associations, supply houses, equipment suppliers, energy marketers, energy data services, program implementers, contractor service providers

#### Down-Stream
- Financial institutions, consumer service providers, retailers, community based organizations, contractors, healthcare providers

---

*Based on “The Business Model Canvas” designed by Business Model Foundry, the makers of Business Model Generation and Strategyzer*
## Value Proposition Design Process for HPwES

<table>
<thead>
<tr>
<th>Process Step</th>
<th>Action Items</th>
</tr>
</thead>
</table>
| **Step 1** Create the Value Map (Jobs, Pains, Gains) | Document the customer’s perspective:  
  • What does your business do? (JOBS)  
  • What gains are you seeking? (GAINS)  
  • What pain are you looking to resolve? (PAINS) |
<p>| <strong>STEP 2</strong> Test the Fit on Paper (map HPwEs services to Pains and Gains) | |
| <strong>STEP 3</strong> Test the Fit in the Market (Pilots) | |
| <strong>STEP 4</strong> HPwES Program Model Fit (informs future modifications) | |</p>
<table>
<thead>
<tr>
<th>Trade Associations</th>
<th>Jobs</th>
<th>Gains</th>
<th>Pains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creating member value</td>
<td>Alignment of program standards</td>
<td>Not enough members</td>
<td></td>
</tr>
<tr>
<td>Help members understand standards and regs</td>
<td>Positive recognition and publicity for industry actions</td>
<td>Back office compliance requirements</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financial Institutions</th>
<th>Jobs</th>
<th>Gains</th>
<th>Pains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earn savings for the utility</td>
<td>Reaching those in need (low income)</td>
<td>Insane marketplace – conflicting programs</td>
<td></td>
</tr>
<tr>
<td>Customer service</td>
<td>Access to the Home Performance with ENERGY STAR brand</td>
<td>Quantifying NEBS</td>
<td></td>
</tr>
<tr>
<td>Innovation in delivery models</td>
<td>More business</td>
<td>Bad reviews</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation Vendor</th>
<th>Jobs</th>
<th>Gains</th>
<th>Pains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help fund projects</td>
<td>(virtually) guaranteed returns</td>
<td>Legal restrictions</td>
<td></td>
</tr>
<tr>
<td>Create profit</td>
<td>Aggregation</td>
<td>Financial market fluctuations</td>
<td></td>
</tr>
<tr>
<td>Provide differentiated products</td>
<td>Access to customer feedback via contractors</td>
<td>Finding qualified customers</td>
<td></td>
</tr>
<tr>
<td>Approve loans</td>
<td>Opportunity for deeper energy savings</td>
<td>Overcoming negative perceptions</td>
<td></td>
</tr>
<tr>
<td>Assess risk</td>
<td>Reduced default rate</td>
<td>Regulations</td>
<td></td>
</tr>
<tr>
<td>Validate/ inspect projects</td>
<td>Positive PR/environmental image</td>
<td>Program cycle vs. loan time</td>
<td></td>
</tr>
</tbody>
</table>
Current Work Group Priorities

• Address action items
  – Define the qualifying criteria and process for becoming an aggregator partner

• Address unresolved questions
  – What QA oversight model should be pursued and tested?
  – What can DOE do to stimulate the market (short/med/long terms)

• Identify other issues to test in pilots…
HPwES Pilot Activities

• Quality Management Systems
  – Working with existing Sponsors to integrate QMS principles into their operations incrementally
  – Piloting a small number of Sponsors to develop and implement comprehensive QMS plans based on QA Option 2 in the HPwES Sponsor Guide v1.5
  – Developing a workbook to assist Sponsors in establishing QMS based QA

Want to learn more?
“Reduce Program Costs by Rethinking Quality Management”
Today at 1:30 pm, Strand 10B
HPwES Pilot Activities

• Piloting “non-traditional” sponsor/partner relationships (in development)

• Staged Upgrades Initiative
  – DOE pilot initiative, independent of but related to HPwES
  – Testing strategies and tactics to promote incremental approaches to home energy efficiency improvements on a path toward more comprehensive retrofits
  – Designed to help support broader participation and private sector investment
Summary and Call to Action

Interested in assisting us with the HPwES Work Group activities?  
Want to become a pilot participant?

Contact:
Courtney Moriarta, courtney_moriarta@sra.com
Or
Caroline Hazard, caroline_hazard@sra.com

QUESTIONS?
Questions?

Contact:
Ely Jacobsohn  Ely.Jacobsohn@ee.doe.gov
Courtney Moriarta  Courtney_Moriarta@sra.com