

Process Innovations to Accelerate Home Upgrade Programs

Dec 15th, 2016

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Context

Started 2010

BPI BA process for the assessment.

Mandatory software for modeling and project submission

Between 2,000- 4,000 projects a year



Worked on the SWS committee in 2010 with NREL.

The Draft version of that document became the work quality requirements for HPwES.

All contractors had to sign a document acknowledging all policies and procedures.

3.1003.6 Dropped Soffits

Topic: Attics
Subtopic: Dropped Ceilings and Soffits
Desired Outcome: Dropped soffits seal movement between the attic and conditi

Single-Family Homes

Select All

	TITLE	SPECIFICATION(S)
<input type="checkbox"/>	3.1003.6a Pre-inspection	An inspection will be conducted for mold, water leaks, damage before sealing ceiling or soffit Repairs will be completed before work begins
<input type="checkbox"/>	3.1003.6b Soffit general	Air flow will be blocked at locations where access is required
<input type="checkbox"/>	3.1003.6c Option 1: bring soffit inside (seal at	Entire opening will be sealed with <u>rigid material</u> in line with ceiling level Material will be cut to size and fastened as required

Old Program Management Software.

Buggy, Slow, frequent crashes and issues.

Integrated program software and modeling tool.

Had to create several “work-a-round's” for our stock / climate



Improvements Software 2012/13

Shifted to flexible software for
program management

Receives and aggregates HPXML
files, invoices, rebate forms for
easy access

Allowed contractors to choose
their own modeling software.

Web based. Fast. Easy.



Improvements Software program management

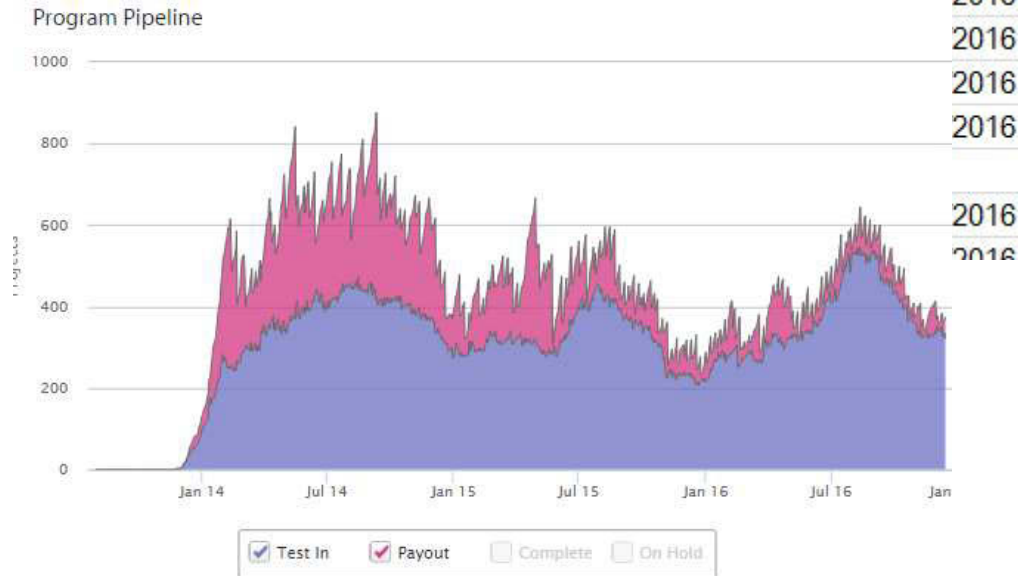
Improved visibility into program operations.

All necessary information in one place for Program managers & M&V

Insights into marketing effectiveness

Insights into contractor performance

ali	Duct Te	Duct Te	Insulatio	Insulatio	Date paid
0	1	400	0	0	12/2/2016
0	1	0	0	0	
0	1	400	1	250	11/23/2016
0	1	400	0	0	11/23/2016
0	1	400	1	250	11/23/2016



Marketing	Operations	Results	Partners
Top applicant sources within time period	Project numbers within time period	Upgrades performed within time period	Most open tasks over SLA on 12/13/16

Improvements Software

This reduced QA admin labor
by 50%

Increased contractor
satisfaction 50%

31% Decrease in contractor
admin labor reporting

Contractor reports became
customizable and sales rates
increased



Improvements Measures

Quality of work varied among contractors.

Training for new hires or crew turnover especially problematic.

Contractors were getting a lot of callbacks to fix simple problems.

Contractor profits impacted.



Improvements Measures

FSL Partnered with Advanced Energy and created the “Critical Details”

Initially developed for WAP, adapted to HPWES.

Training for all contractors on how to use the critical details for in house training, and QC.

Critical details became standard on all corrective action reports following a failed inspection.

CRITICAL DETAIL: SWS 3.1003.6

CAPPING SOFFITS

Install support material (e.g., 2X) for spans wider than 24 inches.

2 INSTALL SUPPORT

3 FIRE RATING

6 SEAL FRAMING

NOTICE: If air sealant is plastic, it must be covered with an approved thermal barrier (e.g., rockwool, slag wool).

Seal all gaps, holes and seams in adjacent framing.

Notes: Be cautious of excessive hammering (e.g., drywall)



Improvements Measures

Contractors now receive quarterly scorecards

Top 5 Contractor of the year awarded in January

Special marketing benefits to winners

Has created some friendly competition

2016 Q3 HPwES Scorecard

Performance contractor

Your company is currently
Ranked
5th / 35

Measure	Scope	Survey	Overall
2.97	3.00	9.63	9.77
2.99	3.00	9.94	9.96
2.50	3.00	9.00	8.83

Current Annual numbers

Approximately 3200 Audits.

40% conversion rates.

All contractors are rated 1-10

#1 – 9.96

#35 – 8.83

Takeaways

Whole house programs cannot exist without good contractors.

Good contractors need to be profitable.

Good contractors need consistent training

Designing and evolving programs should be done with contractor input, and with their perspective in mind.





Home Performance with ENERGY STAR[®] (HPwES) encourages a whole-home assessment approach to provide the most comfortable, efficient living space, looking at all systems for improvement. Since launching the Arizona HPwES program in March 2010, electric utility Arizona Public Service (APS) and Arizona's HPwES Sponsor, FSL Home Energy Solutions (FSL), have focused on continuous improvements designed to elevate customer and contractor experience while boosting program cost-effectiveness.

The program saw success in its early years of implementation, quickly growing to serve more than 2,300 homes in its second program year and more than 4,000 in its sixth year. During this program expansion, three areas for improvement emerged:

- ▶ **Contractor satisfaction:** Participating contractors were frustrated that the program's mandatory energy assessment software was difficult and time-consuming to use. Contractors also complained that the program's home energy reports were



Keys to Home Performance Program Improvements

- ▶ **Simplicity:** A whole-home upgrade is a complicated endeavor, but that does not mean that whole home programs need to be equally complicated. Exploring every avenue to streamline and automate program steps can lower implementation costs.
- ▶ **Standardization:** Streamlining a program requires transparent and well-defined program standards. The Arizona HPwES program looked to industry efforts, including the Standard Work Specifications for Home Energy Upgrades (SWS) and Home Performance Extensible Markup Language (HPXML), as the cornerstone for program improvements.
- ▶ **Flexibility:** HPXML enabled the program to open its market to a wide range of energy assessment tools. Access to these tools gave contractors more choice and control of how they delivered home performance.
- ▶ **Quality:** Delivering consistent and reliable upgrades not only requires a definition of quality, but also a means to manage that quality over time and across all personnel, both program and contractor.

Thanks

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