National Home Performance Council

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The National Home Performance Council

- National, non-profit organization
- Supports whole-house upgrade programs through research and convening projects
- Addresses problems that limit growth and development of whole-house programs

NHPC Stakeholders

- Federal agencies (DOE)
- State energy offices (NASEO, NY, TX)
- Program implementers (CSG, ICF)
- Utility sector (EEI, LIPA)
- Industry (NAIMA)
- Real estate (Eco-Brokers / AEEREP)
- Non-profit stakeholders (ACEEE, ASE, EPC, AEE)

NHPC FOCUS AREAS

- HP Performance Roadmap
- HPXML Standard
- Real Estate
- Utility cost-effectiveness
- Smart Grid and Home Performance

HOME PERFORMANCE ROADMAP

"Bringing on the Boom and Beating the Bust"

- Focuses on process for identifying priorities and implementation strategies for HP industry
- Distinguishes between consumer and resource markets
- Intended to support clearer, more focused discussion

http://www.nhpci.org/publications/NHPC_White-paper-Bringing-on-the-boom_20130430.pdf

HPXML

Improving IT Systems

- BPI-2100 and BPI-2200 approved as BPI standards in June 2013
- HPXML testing underway in New York and Virginia: preliminary transfers completed
- Data standards website up (hpxmlonline.com)

Opportunity for Lower Cost and Higher Information Sharing for State Programs

REAL ESTATE

Data Set for HP Certificates

- Developed by stakeholder working group
- Data elements lined up with information in RETS (flow into MLS) and Appraisal Institute Residential Green and Energy Efficient Addendum
- Standard BPI-2101: consensus draft due this week
- DOE interested in referencing it in new Sponsor Guide

COST-EFFECTIVENESS TESTS

- Stakeholder concern: cost-effectiveness tests are becoming a significant constraint on the growth of the energy efficiency industry, particularly whole-house programs

- Questions:
  - What exactly are the problems
  - What can be done to solve it?

Problems

- Home performance programs having difficult time clearing tests, with the TRC the most-discussed hurdle
- Tests preventing programs from getting off the ground
- Tests imposing significant constraints on existing programs
- Excellent programs, some with strong track records, constrained or jeopardized by tests

Cost-Effective Purpose and Rationale

Do the benefits of energy efficiency outweigh the costs?

- Test is must provide a balanced approach to the benefits and costs that are considered or they are meaningless in guiding policy.

- Test should be used mindfully -- larger goals important (Reduce consumer bills, Meet EEPS goals)

2012 Proposed Solutions

- NHPC White Paper: "Measure it Right"
  - Proposes "Best Practices" approach
- Synapse Energy Economics Paper: "Best Practices in Energy Efficiency Program Screening"
  - Discusses a wide range of best practices
  - http://www.nhpci.org/researchpublications/reports.html

Recommendation

- Use Societal Cost Test or Total Resource Cost Test as the primary tool for evaluating programs -- but *only* if best practices can be applied

- Use Program Administrator Cost Test if best practices cannot be followed, or if test best meets policy goals

- 2013: NEW TEST?

HOME PERFORMANCE AND SMART GRID

- Integration of Smart Grid and Demand Response technologies with Home Performance Programs is an industry game changers:
  - Data Revolution
  - Consumer Engagement
  - Aggregation
  - Monetization

The Need for Data

- Validating testing
- Program monitoring
- Incentives
- Monetization
- Customer Engagement
- EM&V

Smart Meters

- ARRA = $3.4 billion
- Currently 25% of all sectors
- 2015 = ½ of households
- California -- San Diego Gas and Electric program provides direct meter access by customers
- Arizona – 100% metered + standard buildings

Connecting HEMS and the Meter

Greater Home Performance through DR.

NEST

- Reliant and Green Mountain
  - Free thermostat
- National Grid in RI and MA
  - $100 online rebate

Honeywell

- BG&E

SMART HOME = SMART PERFORMANCE

Consumer friendly links of security, telecommunications and energy technology

- Comcast's XFINITY
  - TV + Phone+ Security + Video +climate and lighting control + utility energy management program.
- SCHNEIDER ELECTRIC and Alarm.com
  - home security and energy usage - an app that a homeowner can use to close their garage door, which can then automatically alarm the home security system and turn down the thermostat, for example..
- NEST Learning Thermostat
  - Lighting, temperature control, occupancy sensors.

Linked to Apps

Consumer Motivation

Elusive Behavior Change

- **“Prius Effect”**

- A 2010 ACEEE study: real-time –real-time feedback programs is likely to generate the most dramatic energy savings across a given community – on average 6%

- A 2011 Accenture study on the effects of In Home Displays: mean average energy consumption reduction was 7.9% and 90% of trials recorded an energy saving

FUTURE Program Benefits

- Predictions
  - 12 months of utility bills easily-accessed
  - BPI 2400 True-up

- Base-load VS HVAC

- EM&V
  - Data transfer to the program
  - Red flags as weather normalized data doesn't meet predictions.
  - Less need for costly M&V though QA may remain.

Monetization

What is the difference between renewable energy and demand response and home performance energy efficiency?

METERED MEASURED DATA

Why does this matter?

Capacity markets

Carbon Markets

$$$$$$$$

Disclaimer

Home Performance and Smart Grid integration needs to address:

- Quality of Data
- Comparability of Data
- Privacy of Data
- Security of Data
- Source of Data
- Counter-factual Baseline

To build the future…

Energy efficiency and Smart Grid Conference

- NHPC, NASEO, Association of Demand Response and Smart Grid
- insights on the nexus between energy efficiency and smart grid technologies.
- dialogue about how integration of smart grid and demand response technologies and policies can advance building performance in the commercial and residential sectors.

MARK YOUR CALENDARS!
1-2 DAY EVENT IN DC
WEEK OF OCTOBER 15TH

Thank you!