# Better Buildings

U.S. DEPARTMENT OF ENERGY

**Better Buildings Residential Network Peer Exchange Call Series: *0 to 60: Best Practices for Accelerating Program Performance***

January 26, 2017

*Call Slides and Discussion Summary*

# Agenda

- Agenda Review and Ground Rules

- Opening Poll

- Brief Residential Network Overview and Upcoming Call Schedule

- Featured Speakers

  - **Dale Hoffmeyer**, U.S. Department of Energy, Buildings Technology Office

  - **Laura Geel**, Program Manager, New York State Energy Research and Development Authority *(Network Member)*

  - **Chris Baker**, Account Executive, Program Manager and **Charlie Gohman**, Manager, from Arizona Home Performance

- Discussion

  - How has your organization tried to implement process improvements?

  - What process improvement strategies have worked well for your organizations and what were the results of such efforts?

  - What is the most pressing performance challenge your organization faces?

  - Other questions, lessons, or issues related to accelerating program performance?

- Closing Poll

2

# Better Buildings Residential Network

**Better Buildings Residential Network:** Connects energy efficiency programs and partners to share best practices and learn from one another to increase the number of homes that are energy efficient.

**Membership:** Open to organizations committed to accelerating the pace of home energy upgrades.

**Benefits:**
- Peer Exchange Calls 4x/month
- Tools, templates, & resources
- Recognition in media, materials
- Speaking opportunities

- Updates on latest trends
- Voluntary member initiatives
- Residential Program Solution Center guided tours

**Commitment:** Provide DOE with annual number of residential upgrades, and information about associated benefits.

*For more information or to join, email* bbresidentialnetwork@ee.doe.gov*, or go to* energy.gov/eere/bbrn *and click Join*

# Peer Exchange Call Series

**We hold one Peer Exchange call the first four Thursdays of each month from 1:00-2:30 pm ET**

Calls cover a range of topics, including financing & revenue, data & evaluation, business partners, multifamily housing, and marketing & outreach for all stages of program development and implementation

Upcoming calls:

- February 2: Known Unknowns: Key Trends in Energy Efficiency in the New Year
- February 9: Comfort and Safety: Family-Oriented Marketing
- February 16: Innovative Approaches to Financing
- February 23: Making an Impact: Low-Income Energy Efficiency Programs
- March 2: It's a Beautiful Day in the Neighborhood: Scale Interventions

*Send call topic ideas to peerexchange@rossstrategic.com*

*See the Better Buildings Residential Network Program website to register*

# March Energy Madness: Join the game!

Submit your most creative residential energy-related marketing messages to: peerexchange@rossstrategic.com

*Due date: February 17, 2017*

**Tournament Details:**

- We will announce the **Sweet 16** entering the race on the March 2 Peer Exchange call.
- **Call Participants will make their picks** to determine what messages are best in the 8 head-to-head match ups.
- **On each following Peer Exchange Calls in March**, you'll find out who has made it on to the next round and vote on your favorites.
- **The winning message** will be selected on the **March 23 call**!



*U.S. Department of Energy*
**See the video**



*Utilitywise*
**More information**

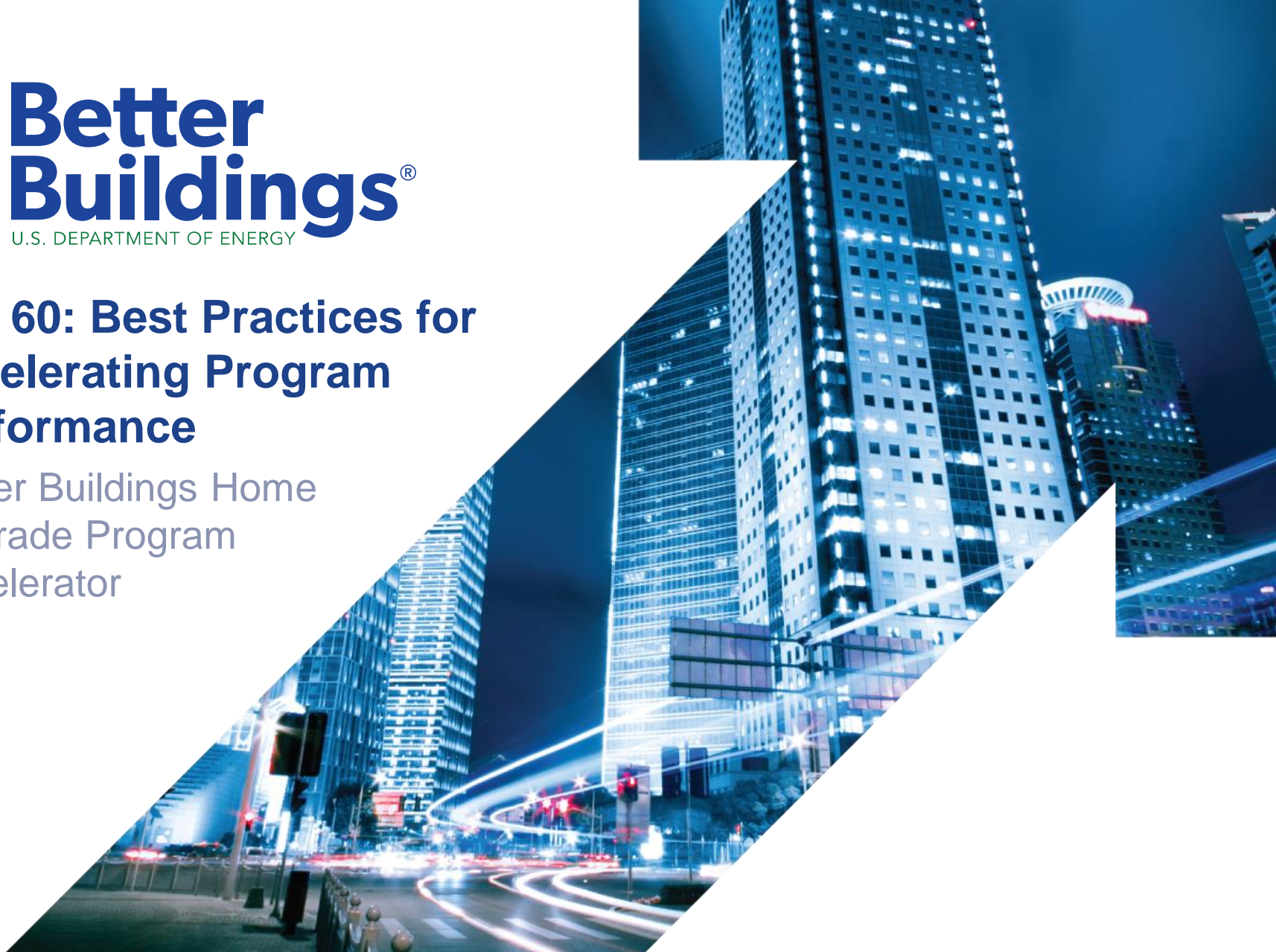*Better Buildings Residential Network members may be given priority consideration.*

# Home Upgrade Program Accelerator Initiative Update

## U.S. Department of Energy (DOE)

# 0 to 60: Best Practices for Accelerating Program Performance

Better Buildings Home Upgrade Program Accelerator

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# What is a Better Buildings Accelerator?

- Collaborative peer-to-peer networks designed to facilitate learning and leadership opportunities that result in new strategies and practices in clean energy development.

- focus on partner identified areas that aim to overcome persistent barriers.
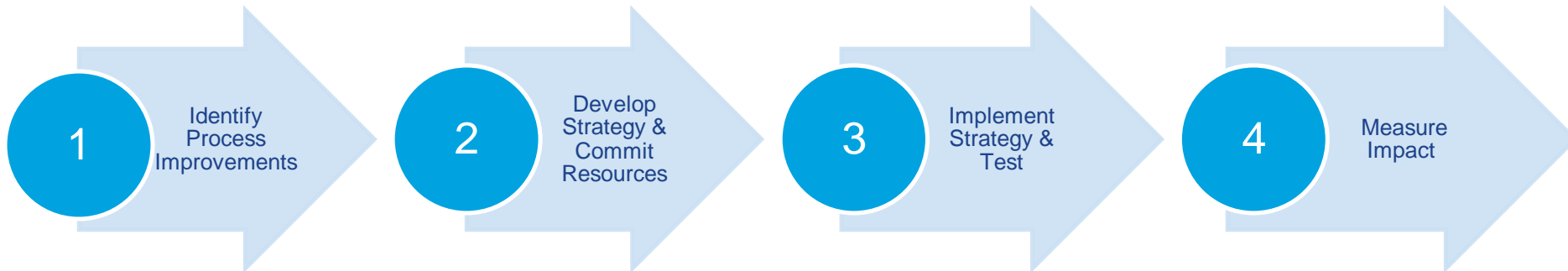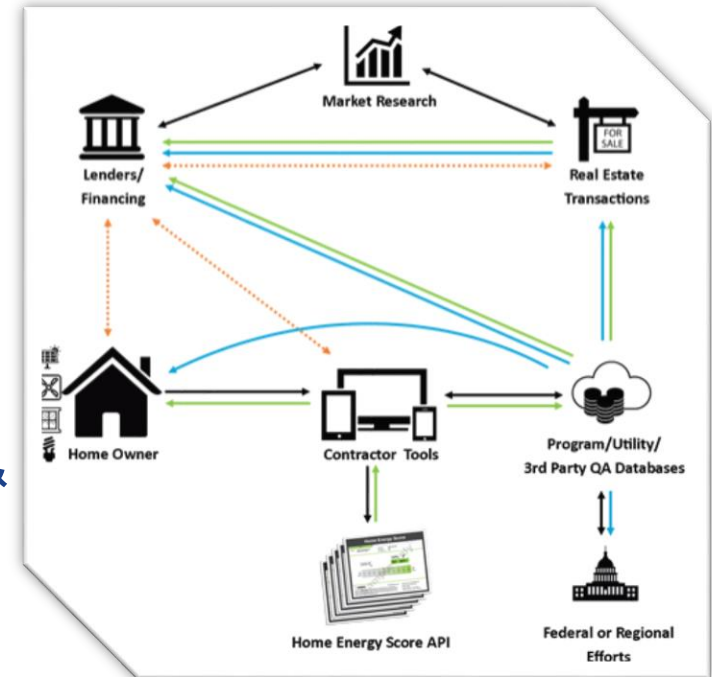
ISSUE SPECIFIC    TIME BOUND    RESULTS-DRIVEN

# Home Upgrade Program Accelerator

**Objective:** Reduce the administrative burden and cost of programs by improving processes to:

- ✓ Manage and track home energy upgrades
- ✓ Review the quality of work
- ✓ Streamline data collection, management, & transfer (e.g., BEDES, HPXML)



| 1 | Identify Process Improvements |
| 2 | Develop Strategy & Commit Resources |
| 3 | Implement Strategy & Test |
| 4 | Measure Impact |

# Accelerator Partners

- APS
- NYSERDA
- Build It Green
- Enhabit
- Pearl Home Certification
- Building Performance Institute
- Midwest Energy Efficiency Alliance (MEEA)
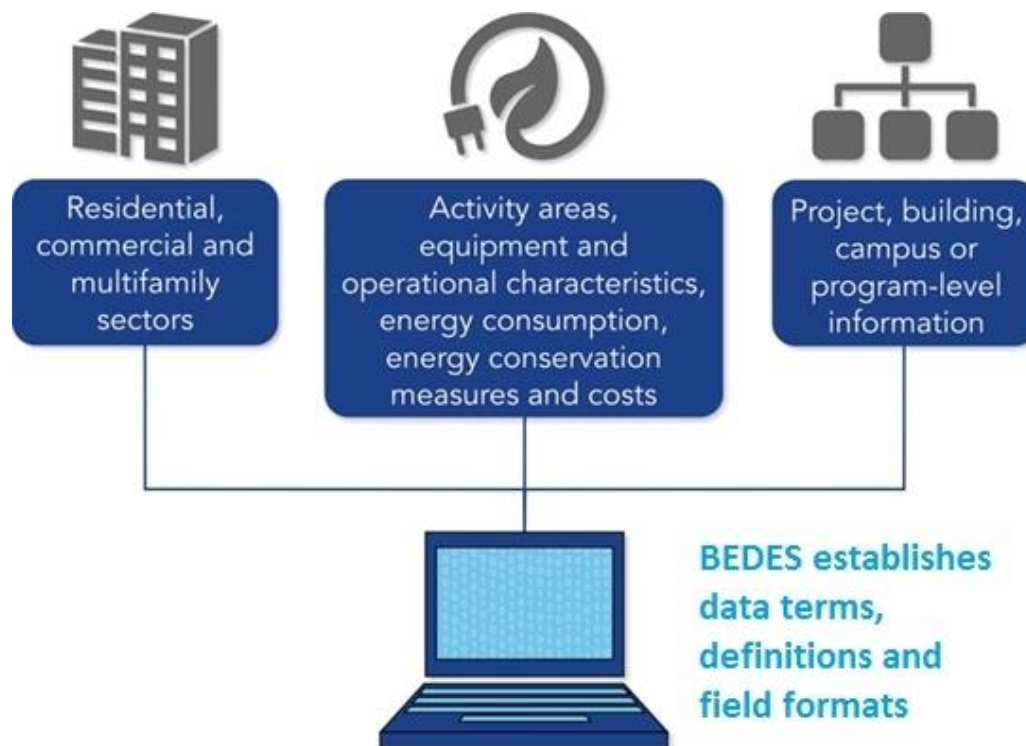- Neighborworks of Western Vermont HEAT Squad

Benefits
- ✓ Peer exchange of knowledge and experience
- ✓ Strategies to reduce program cost and enhance effectiveness, improve participating contractor satisfaction
- ✓ Receive public recognition as leader

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# Standardize Collection of Building Data

- Increase data interoperability between industry software system.

- Facilitate implementation consistency across jurisdictions to drive economies of scale.

- Create consistent, high quality, and large scale data sets to inform market research and valuation of EE resources.

# Building Energy Data Exchange Specification (BEDES)

BEDES provides a common set of data terms, definitions and field formats that can be used by public and private software tools, data schemas and databases working within the building energy performance sector.

Residential, commercial and multifamily sectors

Activity areas, equipment and operational characteristics, energy consumption, energy conservation measures and costs

Project, building, campus or program-level information

BEDES establishes data terms, definitions and field formats

# Home Performance XML

Building Performance Institute (BPI) standards for collecting and transferring home energy upgrade information.

- Dictionary of terms for home upgrades aligned with BEDES
  - Home Performance-Related Data Collection (BPI-2200)
- Schema for data transfer using extensible mark-up language (XML)
  - Home Performance-Related Data Transfer (BPI-2100)
  - **Key for machine to machine communication and automation**

```
EXAMPLE HPXML

<WaterHeatingSystem>
        <SystemIdentifier id="dhw1"/>
        <FuelType>natural gas</FuelType>
        <WaterHeaterType>storage water heater</WaterHeaterType>
        <Location>conditioned space</Location>
        <CombustionVentingSystem idref="combvent1"/>
</WaterHeatingSystem>
```

# Business Process Improvements

*"The <u>first rule</u> of any technology used in a business is that <u>automation</u> applied to an efficient operation will magnify the efficiency. The second is that <u>automation</u> applied to an inefficient operation will magnify the inefficiency." – Bill Gates*

- Combining business process improvements (such as Lean) with automation can enhance the efficiency and performance benefits that either approach could achieve in isolation.
  - **Lean** is a set of principles and methods to remove non-value added activity (or waste) from any process.

# Standardize Specifications for Home Energy Upgrades

- Reflect a whole-house approach to installing energy-efficiency measures (e.g. ventilation, insulation, and air sealing).

- Establishes common expectations of quality work against which consumers, financers, and policymakers can measure performance of home energy-efficiency professionals.

- Supports the development of a skilled residential energy upgrade workforce.

# Specification Example

## 4.1006.1 Pull-Down Stairs

Topic: Attics
Subtopic: Attic Openings
4.1006.1 Detail Name: Pull-Down Stairs
Desired Outcome: Pull-down attic stair properly sealed and insulated

| ROW | TITLE | SPECIFICATION(S) | OBJECTIVE(S) |
|---|---|---|---|
| 4.1006.1a | Installation | Hatches will be insulated with non-compressible insulation and the measure will include a protective barrier or baffle<br><br>Pull down stair assembly will be insulated to the same R-value as the adjoining insulated assembly<br><br>Pull down stair rough opening will be surrounded with a durable dam that is higher than the level of the attic floor insulation | Achieve uniform R-value<br><br>Prevent loose insulation from entering the living area |

The **Specification** defines the minimum level of action required to meet the **Objective**.

The **Objective** defines the required outcomes of the work.

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# Home Performance Community Tools

- [www.hpxmlonline.com](http://www.hpxmlonline.com) provides information on the data standard, the value for the building performance industry, and tools to help programs and software developers.

- Online standard workforce specification tool ([sws.nrel.gov](http://sws.nrel.gov)) can be leveraged in energy audits, scopes of work, quality control, training and field guides.

# Presentation Highlights: U.S. Department of Energy (DOE)

- In collaboration with stakeholders, DOE's Home Upgrade Program Accelerator identified solutions to **improve processes for home energy upgrade programs**.

  - Process improvements can help scale current efforts and reach the goal of completing millions of upgrades annually.

- Data management strategies can reduce administrative burdens and minimize costs for programs:

  - **The Building Energy Data Exchange Specification (BEDES),** creates a "common language" to streamline the exchange of information on buildings and energy use.

  - **The Home Performance Extensible Markup Language (HPXML),** makes the exchange of data possible between different market actors through a shared, standardized coding process.

# Program Experience:
# New York State Energy Research and Development Authority (NYSERDA)

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**ENERGY**

# NYSERDA's Process Improvements

*Residential Existing Homes Programs*

Laura Geel, Program Manager

# Process Improvement Highlights

- Shortened project lifecycle
- Faster workscope approval times
- Improved quality of paperwork submissions
- Faster payments

NEW YORK STATE OF OPPORTUNITY. | NYSERDA

# Key Takeaways

- Embrace Change Management
- Strive for Continuous Improvement
- Consider Others in the Process
- Make process improvements part of your organizational culture

# Change Management

# Change Management

- Change is hard; even good change can be challenging

- Management buy-in is critical

- Enable those closest to the work to be a major part of the process

- Strive for quick wins

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# *Example: Quick Wins*

- Home Performance with ENERGY STAR® Early Wins Goal:
  - Within 60 days, make it possible for 95 percent of customers to move from deciding to use the program to an approved Home Performance contract offer within one week.

- 5 key areas for improvement were identified
  - Make the program more understandable
  - Improve the application process
  - Make it easier to select a contractor
  - Reduce administrative project approval times
  - Streamline the financing process

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# *Example: Quick Wins*

Guiding Principles

- Focus on action and the achievable.

- Aim high.

- Do not let perfection be the enemy of progress.

- When in doubt, ask those closest to the market.

- Do not build around exceptions.

- Request assistance when you get stuck.

- Challenge the conventional wisdom.

- Record assumptions and baselines where possible.

- Have fun!

# *Example: Quick Wins*

- Process:
  - 5 team established to address key target areas
    - Used resources from other departments for increased impact
  - Each team an action plan to identify realistic goals to be accomplished in 60 days
  - Teams also identify additional opportunities beyond the 60 day implementation plan

# *Example: Quick Wins*

- 60 Day Results
  - Created simple, concise language on website and printed materials
  - Simplified applications to remove questions with little value
  - Reduced paperwork requirements
  - Reduced audit application times from 3 days to 1
  - Reduced project approval times from 8 days to 1
  - Identified additional changes beyond 60 days
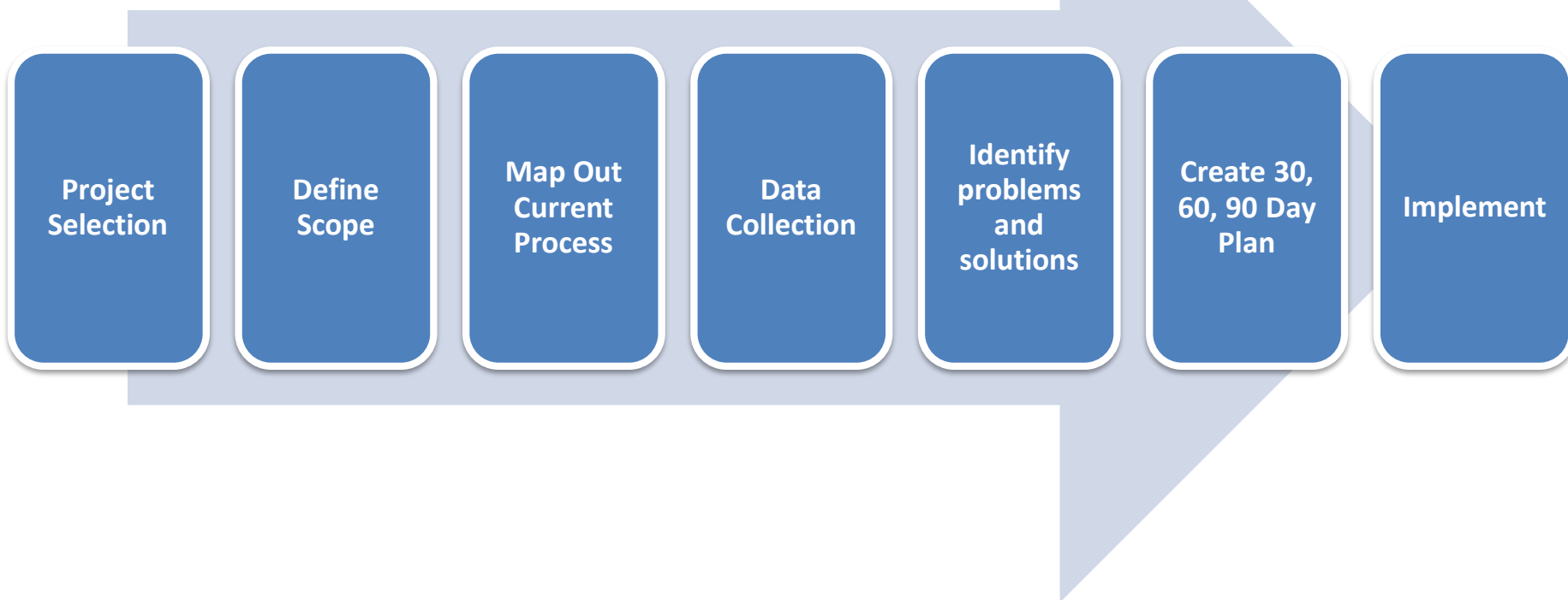  - Increased approval rates on loans

# Continuous Improvement

# Continuous Improvement

- Map out your current process to understand where bottlenecks can happen and opportunities for improvement and streamlining

- Small, incremental changes can have a big impact

- Review performance data regularly

- Be flexible and willing to change your plan

# *Example: Lean*

- The core idea of Lean is to maximize customer value while minimizing waste. Example of waste may include: excess use of paper; backlog of work; obsolete databases; or unnecessary process steps.

- The Lean Program supports the ideas of learning, evolving, and improving in all we do.

# *Example: Lean*



Project Selection → Define Scope → Map Out Current Process → Data Collection → Identify problems and solutions → Create 30, 60, 90 Day Plan → Implement

# *Example: Lean*

- EmPower NY has used the Lean process to:.
  - Reduce project lifecycle from an audit to an approved project by 7.5 days
  - Reduce project approval processing times by 30%
  - Improve paperwork quality rate from 69% to 93%
  - Reduce payment time from 35 days to 7 days

# Consider Others in the Process

# Consider Others in the Process

- Consider everyone you work with often: homeowners, contractors, other departments, etc.

- Include them in your conversations; learn their pain points and understand how changes will impact them

- Understand the right timing to roll out make changes

- Sometimes your improvements can help others beyond your group

# Make Process Improvements Part of Organizational Culture

# Organizational Culture

- Process improvements do not need to be a formal process

- Encourage staff to identify new ideas and to question current processes

- Provide time for staff to collaborate with others within and outside your organization

# Presentation Highlights: New York State Energy Research and Development Authority (NYSERDA)

- **Enable those closest to the work** performing the day-to-day processes **to be part of the overall change process**.
- **Strive for quick wins** to demonstrate the benefits of change and get your team on board.
  - NYSERDA's quick win 60-day process with Home Performance with ENERGY STAR allowed customers to have their approved contracts within one week.
- **Focus on your typical projects:** do not build your improvement processes around exception cases.
- **Consider how potential changes directly impact participants.**
  - Ensure that changes are meaningful by reaching out directly to external stakeholders (e.g., contractors) to ask for their perspectives.
- **Make process improvements the norm of your organization.**
  - Improvement is a continuous, but not necessarily a formal process.

# Program Experience:
# Arizona Home Performance

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Worked on the Standardized Work Specifications, (SWS) committee in 2010 with National Renewable Energy Laboratory, (NREL).

The Draft version of that document became the work quality requirements for Home Performance with ENERGY STAR® Program, (HPwES).

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

Many contractors became frustrated with inspection failures and left the program.

# 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.

aps

# Improvements - Measures

FSL Partnered with Advanced Energy and created the "Critical Details"

Initially developed for the Weatherization Assistance Program, (WAP) adapted to HPWES.



CRITICAL DETAIL: SWS 3.1003.6

CAPPING SOFFITS

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

NOTICE: If air sealant is plastic, it must be cove an approved thermal b rockwool, slag wool).

**2 INSTALL SUPPORT**

**3 FIRE RATING**

d seams

Seal all gaps, holes and seams in adjacent framing.

Notes: Be cautious

excessive hammer

(e.g. drywall)

**6 SEAL FRAMING**

aps

## CAPPING SOFFITS

DESIRED OUTCOME: Soffit is capped to prevent air leakage or moisture movement between the attic and conditioned space

Wall cavities within the SOFFIT/ DROPPED CEILING are open to the attic.

Wall cavities capped and air-sealed.

| MATERIALS | TOOLS |
|---|---|
| Interior cladding: see notes | |


**BEFORE**


**AFTER**

### SAFETY + NOTES

Gloves, appropriate respirator, safety glasses

If interior surface covering in soffit is not appropriately fire rated, the material used to cap the soffit must be appropriately fire rated.

*Materials and tools listed are only recommendations and may not include everything needed to complete job.*

Governor's
Office of Energy
Policy

## CAPPING SOFFITS

Prepare work area.

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

NOTICE: If air sea... plast...

sheathing ...ling.

**1 PREPARE**

Air-seal all gaps, holes and of rigid sheathing.

**5 SEAL SHEATHING**

...NG

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### NREL
National Renewable Energy Laboratory
Standard Work Specifications Tool

Ventilation                Baseload

Heating & Cooling

Insulation

Air Sealing

Health & Safety

☆ Favorite

## 3.1003.6 Dropped Soffits

**Topic:** Attics
**Subtopic:** Dropped Ceilings and Soffits
**Desired Outcome:** Dropped soffits sealed to prevent air leakage and moisture movement between the attic and conditioned space

- 1. Using the Standard Work Specifications
- 2. Health & Safety
- 3. Air Sealing
  - 3.10: Attics
    - Penetrations & Chases
    - Open Stairwells
    - Dropped Ceilings & Soffits
    - Cathedralized Attic Ceilings
    - Other Ceiling Materials
  - 3.11: Walls
  - 3.12: Windows & Doors
  - 3.13: Floors
  - 3.14: Basements & Crawl Spaces
  - 3.15: Attached Garages

Single-Family Homes

🖨Print    📑Copy to Excel    ✉Email

| | TITLE | SPECIFICATION(S) | OBJECTIVE(S) |
|---|---|---|---|
| ☐ Select All | | | Repair moisture-related issues |
| ☐ | 3.1003.6a Pre-inspection | An inspection will be conducted for mold, water leaks, and water damage before sealing a dropped ceiling or soffit  Repairs will be completed before work begins | |
| ☐ | 3.1003.6b Soffit | Air flow will be blocked at soffit in locations where access allows | Provide continuous air barrier across soffit openings |

# Improvements - Measures

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.

NOTICE: If air sealant is plastic, it must be cove an approved thermal b rockwool, slag wool).

**2 INSTALL SUPPORT**

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d seams

Seal all gaps, holes and seams in adjacent framing.

Notes: Be cautious

excessive hammer

G

**6 SEAL FRAMING**

# Improvements Measures

Contractors now receive quarterly scorecards

Top 5 Contractor of the year awarded Yesterday.

Special marketing benefits to winners

Has created some friendly competition

2016 Q3 HPwES Scorecar

Performance contractor

Your company is currently Ranked

5th /35

| easure | 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 |

aps

# Current Annual numbers

35 – 40 active contractors.

Approximately 3200 Audits.

44% conversion rates.

Over 6,000 MWh's saved annually

Maintain high realization rates through Program Optimization software

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.

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## 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.

H ome 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

**aps**

"Inspection with the aim of finding the bad one and throwing them out is to late, ineffective and costly.  Quality comes not from inspection but from improvement in process"

Dr. W. Edwards Deming

# Contractor Resources

- Resources/training
  - Define what is right
    - Our standards are based on DOE Standard Work Specifications
  - Resources to help contractors do the right work on all jobs
    - Success with Home Performance
    - Mentorship (one on one training/help in client's home)
    - General building science training

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# AZ QA Process

- Site inspection

- Individual report

- Contractor score (first stage of being implemented, using internally)

# Inspection Report

- There are two components to the inspection report.
  - Job score based on the inspection findings
  - Corrective Action Report (CAR): Specific information on work quality and any needed remedies
    - Template CAR have been created based on the Critical Details

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# Job Score

- 0 to 10 score
  - Zero score for job if Health and Safety standards not followed. Review of measures continued but they will not have impact on score.
  - Each individual measure is scores on a 0 to 3 scale.
    - 0 = on scope but not completed
    - 1 = deficiencies that have large* impact on performance
    - 2 = deficiencies that have minimal* impact on performance
    - 3 = Installed per standard
- *We have established prescriptive guidance on impact

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# Overall Job Score

- Individual job score will be determined by individual measure scores
  - Total points received from inspection divided by total number point possible results in job score
    - Example:
    - 5 measures, possible 15 points
    - 10 point from inspection

- 6.67 score for job

# Arizona Home Performance with ENERGY STAR®
## Corrective Action Report

**Duct Sealing: Flex to metal not sealed to standard.**
Standard Work Specifications (SWS) section 3.1602.1 Air Sealing Duct System

**As found on site:**

Pictures of the measure found on site are included

**Critical Detail Specification:**



**AZ** CRITICAL DETAIL:                    SUCCESS WITH WEATHERIZATION
SEALING DUCTS

Seal plenum with mastic. Choose the appropriate sealing technique based on hole size.
**1 SEAL PLENUM**

Peel back outer liner and insulation.
**2 GAIN ACCESS**

Install nylon tie band around inner liner using a tie band tensioning tool.
**3 STRAP**

Seal inner liner with mastic. Choose the appropriate sealing technique based on hole size.
**4 SEAL**

Replace outer liner and insulation.
**5 REPLACE**

Install nylon tie band around inner liner using a tie band tensioning tool.
**6 STRAP**

Notes:

**Notes:**

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# Review of Avenge Scope - All Contractors

Contractor Scores

Date Range: Jan 01, 2015 - Dec 31, 2015

| Number Of Jobs | Average Measure Score | Average Scope Score | Average Survey Score | Overall Score |
|---|---|---|---|---|
| 1 | 3.00 | 3.00 | 8.00 | 9.00 |
| 16 | 2.81 | 3.00 | 9.25 | 9.38 |
| 7 | 2.89 | 3.00 | 9.50 | 9.61 |
| 14 | 2.91 | 3.00 | 8.67 | 9.21 |
| 75 | 2.84 | 2.96 | 8.97 | 9.26 |
| 21 | 2.39 | 2.90 | 9.00 | 8.65 |
| 5 | 2.95 | 3.00 | 9.67 | 9.77 |
| 23 | 2.70 | 3.00 | 9.87 | 9.53 |
| 2 | 3.00 | 3.00 | 9.00 | 9.50 |
| 34 | 2.85 | 3.00 | 9.77 | 9.69 |
| 30 | 3.00 | 2.90 | 9.86 | 9.90 |
| 40 | 2.37 | 2.83 | 9.00 | 8.60 |
| 7 | 2.76 | 3.00 | 9.00 | 9.18 |
| 12 | 3.00 | 3.00 | 9.45 | 9.73 |
| 41 | 3.00 | 3.00 | 9.93 | 9.97 |
| 8 | 2.46 | 2.25 | 0.00 | 8.05 |
| 91 | 2.94 | 3.00 | 9.29 | 9.56 |
| 2 | 2.84 | 3.00 | 9.00 | 9.28 |
| 2 | 3.00 | 3.00 | 8.00 | 9.00 |
| 54 | 2.95 | 2.94 | 9.23 | 9.53 |
| 26 | 2.70 | 2.96 | 8.71 | 8.93 |
| 104 | 2.70 | 2.97 | 9.17 | 9.18 |
| 27 | 2.85 | 2.89 | 9.22 | 9.37 |
| 3 | 3.00 | 3.00 | 9.00 | 9.50 |
| 1 | 3.00 | 3.00 | 0.00 | 10.00 |
| 5 | 2.90 | 3.00 | 9.50 | 9.62 |
| 57 | 2.76 | 2.98 | 9.57 | 9.45 |
| 38 | 3.00 | 3.00 | 9.83 | 9.91 |
| 23 | 2.74 | 3.00 | 9.68 | 9.49 |
| 3 | 3.00 | 3.00 | 10.00 | 10.00 |
| 4 | 2.75 | 3.00 | 9.00 | 9.17 |
| 11 | 2.48 | 3.00 | 10.00 | 9.30 |

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# Individual Job Scores for a Contractor

*Care by Design*

Contractor: Affordable Energy Solutions of Arizona

Date Range:  Jan 01, 2016 - Nov 03, 2016

| Inspection Date | Measures | Scope | Surveys | Overall |
|---|---|---|---|---|
| 1/4/2016  12:00:00 AM | 3.00 | 3.00 | 9.00 | 9.50 |
| 1/4/2016  12:00:00 AM | 3.00 | 3.00 | 8.00 | 9.00 |
| 1/6/2016  12:00:00 AM | 3.00 | 3.00 | 0.00 | 10.00 |
| 1/7/2016  12:00:00 AM | 3.00 | 3.00 | 0.00 | 10.00 |
| 1/11/2016  12:00:00 AM | 3.00 | 3.00 | 0.00 | 10.00 |
| 1/12/2016  12:00:00 AM | 3.00 | 3.00 | 0.00 | 10.00 |
| 1/12/2016  12:00:00 AM | 2.75 | 3.00 | 9.00 | 9.17 |
| 1/13/2016  12:00:00 AM | 3.00 | 3.00 | 0.00 | 10.00 |
| 1/20/2016  12:00:00 AM | 3.00 | 3.00 | 0.00 | 10.00 |
| 1/22/2016  12:00:00 AM | 3.00 | 3.00 | 10.00 | 10.00 |
| 1/27/2016  12:00:00 AM | 3.00 | 3.00 | 9.00 | 9.50 |
| 1/29/2016  12:00:00 AM | 0.00 | 3.00 | 10.00 | 6.00 |
| 1/29/2016  12:00:00 AM | 3.00 | 3.00 | 10.00 | 10.00 |
| 2/8/2016  12:00:00 AM | 2.20 | 3.00 | 9.00 | 8.43 |
| 2/10/2016  12:00:00 AM | 3.00 | 3.00 | 10.00 | 10.00 |
| 2/10/2016  12:00:00 AM | 3.00 | 3.00 | 10.00 | 10.00 |
| 2/16/2016  12:00:00 AM | 3.00 | 3.00 | 8.00 | 9.00 |
| 2/26/2016  12:00:00 AM | 3.00 | 3.00 | 10.00 | 10.00 |
| 3/2/2016  12:00:00 AM | 3.00 | 3.00 | 10.00 | 10.00 |
| 3/3/2016  12:00:00 AM | 3.00 | 3.00 | 8.67 | 9.33 |
| 3/9/2016  12:00:00 AM | 3.00 | 3.00 | 9.00 | 9.50 |
| 3/10/2016  12:00:00 AM | 3.00 | 3.00 | 10.00 | 10.00 |
| 3/11/2016  12:00:00 AM | 2.67 | 3.00 | 0.00 | 9.11 |
| 3/11/2016  12:00:00 AM | 2.75 | 3.00 | 0.00 | 9.33 |
| 3/15/2016  12:00:00 AM | 2.50 | 3.00 | 3.00 | 5.83 |
| 3/24/2016  12:00:00 AM | 3.00 | 2.00 | 0.00 | 9.33 |
| 3/24/2016  12:00:00 AM | 2.00 | 3.00 | 10.00 | 8.67 |
| 3/30/2016  12:00:00 AM | 2.50 | 3.00 | 10.00 | 9.33 |
| 3/31/2016  12:00:00 AM | 3.00 | 3.00 | 9.00 | 9.50 |
| 4/8/2016  12:00:00 AM | 3.00 | 3.00 | 9.00 | 9.50 |

AZ Home Performance
with ENERGY STAR®

*A program of the Foundation for Senior Living*

# Contractor Score

- Based on site inspections and customer service scores (based on surveys) an overall contractor score will be generated
  - 1 to 10 score
  - Uses
    - Contractor of the year
    - Track progress
    - Special projects/Pilots

AZ Home Performance
with ENERGY STAR®

*A program of the Foundation for Senior Living*

Arizona Home Performance increased contractor performance and program cost-effectiveness with a set of key process improvements:

- **"Critical Details" set basic quality standards** and **visual representations** of properly installed home improvements.

- **Focused 1-hour trainings** meet contractor needs while ensuring that the workforce is aware of basic standards.

- Transitioned to **Home Performance Extensible Markup Language (HPXML),** which reduced administrative costs significantly.

- **Quality assurance (QA) reviews**. Due to the highly detailed energy data gathered, the QA team is able to send the contractor suggestions for corrective actions when issues are identified.

The Arizona HPwES improvements also **created opportunities in the marketplace:**

- **Fewer call backs and more sales:** Higher quality installations make good business sense for contractors.

- **Increased market competition**. For example, the Arizona HPwES uses:

  - **A yearly top-five hierarchy of the best performer contractors on the market.**

  - **A scoring tool ranking contractor performance on a 1-10 scale.**

    - Scores are based on the **quality of installation and customer satisfaction**.

    - The success of this incentive is also reflected in the **close score** between the highest (9.96 points) and lowest (8.83 points) rated contractor.

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# Related Resources in the Residential Program Solution Center

**Explore resources related to best practices for accelerating program performance:**

- Read this Proven Practices post offering various program examples and best practices regarding information technology systems approaches.

- Learn strategies to improve program processes and enhance data management, contractor relationships and customer experiences in this BBRN case study.

- Explore best practice step-by-step guidance for data management strategies with the Evaluation & Data Collection – Develop Resources handbook.



https://rpsc.energy.gov

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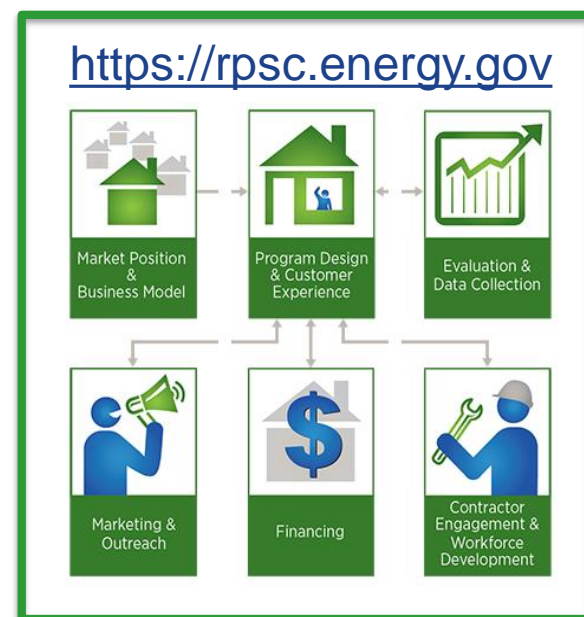
- ➢ Check out the latest Proven Practices post on Speaking About Financing in Ways That Resonate with Homeowners.

- ➢ The Solution Center is continually updated to support residential energy efficiency programs—**member ideas are wanted**!

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# Additional Resources and Examples

- [Arizona Home Performance's resources](#)

- [Arizona Home Performance's Critical Details](#)

- Related Better Buildings Residential Network Peer Exchange Call Summaries:

  - [Energy Efficiency on Display: Using Demonstration Projects to Showcase Home Performance Opportunities (201)](#)

  - [Think Again! A Fresh Look at Home Performance Business Models and Service Offerings (301)](#)

# 2017 Better Buildings Summit
## Registration is now open!



**Be sure to register today for the 2017 Better Buildings Summit!**

**Spread the word:**
*#BBSummit17 registration is right around the corner. Get ready to learn about expert #EnergyEfficiency enhancements http://bit.ly/2iZCMsB*

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**Stay engaged and connected with the Better Buildings Residential Network and our partners from the residential and multifamily sectors!**

**Follow us to plug into the latest Better Buildings news and updates!**

**Share with us** your top stories on how your organization is accelerating energy savings through efficiency upgrades, strategies, and investment!
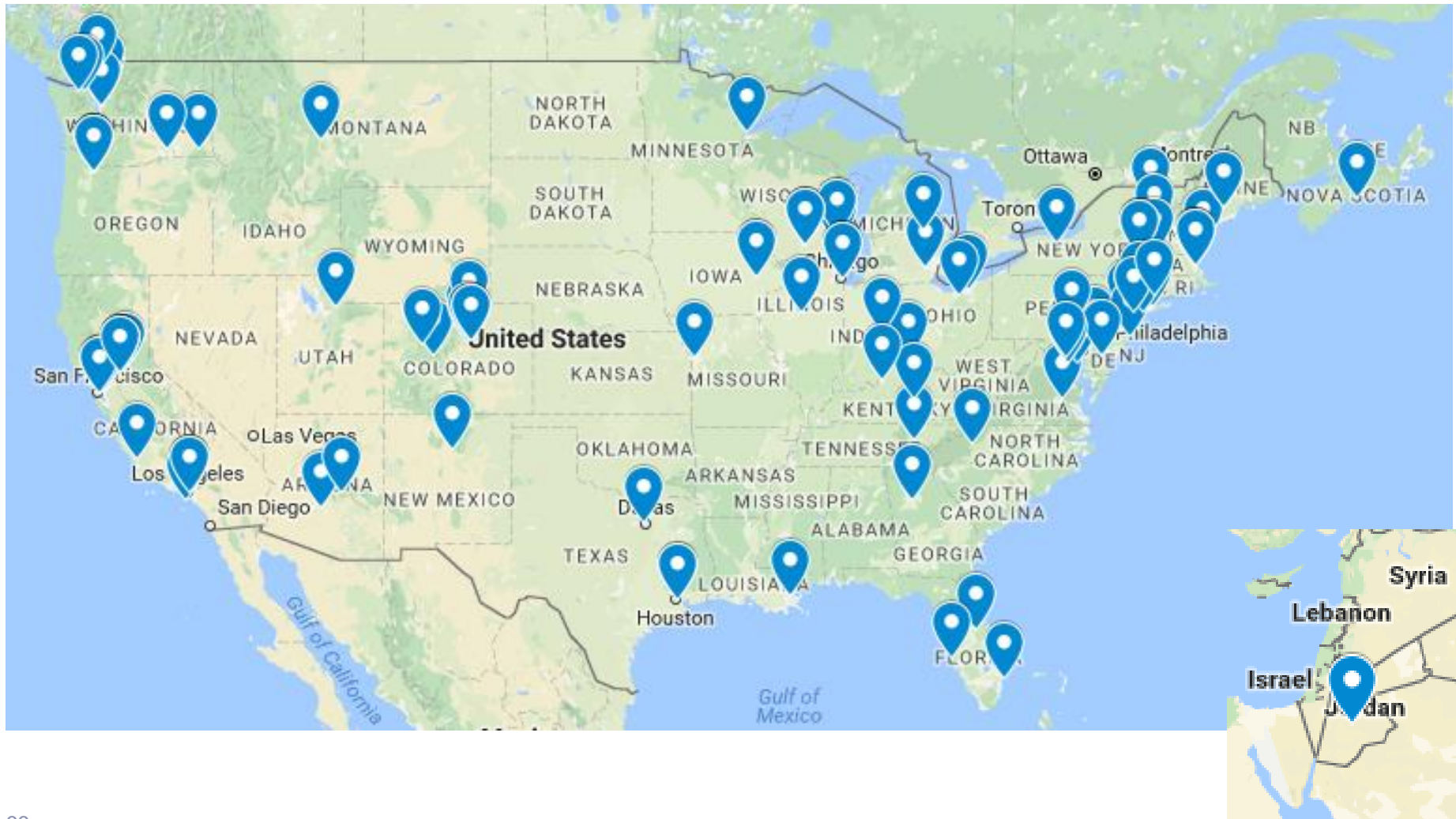
**Better Buildings Twitter** with **#BBResNet**

**Better Buildings LinkedIn**

**We can't wait to hear from you!**

# Call Attendee Locations

- CalCERTS, Inc.
- California Energy Commission
- City and County of Denver
- City of Cambridge
- City of Fort Collins
- CLEAResult
- Cleveland Public Power
- County of San Luis Obispo
- Efficiency First California
- Efficiency Maine
- Efficiency Nova Scotia

- Energy Efficiency Specialists
- EnergySavvy
- Greater Cincinnati Energy Alliance
- HEAT Squad - NeighborWorks of Western Vermont
- International Center for Appropriate and Sustainable Technology (ICAST)
- Mountain Association for Community Economic Development

- Midwest Energy Efficiency Alliance (MEEA)
- New York State Energy Research and Development Authority (NYSERDA)
- Richmond Region Energy Alliance
- South Burlington Energy Committee
- Southface
- The Oberlin Project
- Wisconsin Energy Conservation Corporation (WECC)

- Air Conditioning Contractors of America (ACCA)
- Akin & Associates
- Alliant Energy
- Bay City Electric Light and Power
- BKi
- Blue Ridge Electric Membership Corporation
- Bruce Harley Energy Consulting
- California Public Utilities Commission
- Cascade Natural Gas
- City of Ann Arbor (MI)
- City of Duluth (MI)

- City of Houston (TX)
- City of Milwaukee (WI)
- Clallam County (WA)
- ComEd
- Community Office for Resource Efficiency (CORE)
- Craft3
- Delaware Division of Energy & Climate (DNREC)
- Energize NY
- EnerGreen Sites
- Energy Management Services
- Energy Wise
- Environmental Design / Build

- EPA, Region 8 - Mountains and Plains
- ESD 112
- Franklin Energy
- New York City Housing Development Corporation
- Green Money Search
- Groundswell
- Holy Cross Energy
- ICF International
- Jasmine Universe
- Local Government Commission
- Mark Dyen Consulting LLC
- Mercy Housing

- Michaels Energy
- Montana Department of Environmental Quality
- NANA Regional Corporation, Inc.
- Off The Grid Renovations, LLC.
- Office of the People's Counsel (DC)
- Pennsylvania Public Utility Commission
- PV Blue
- Research Into Action
- Rocky Mountain Institute
- Sarasota County (FL)
- Seattle City Light

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- Snohomish County (WA)
- Studio Jack Rees
- Summit County (CO)
- Sustainable South Bronx
- Southwest Energy Efficiency Project (SWEEP)
- Tactical Energy Solutions, LLC
- Tempo Partners
- The Energy Network
- TRC Solutions
- UIL Holdings Corporation
- Ygrene Energy Fund Incorporated

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# Opening Poll

- Which of the following best describes your organization's experience with process improvements to accelerate program performance?

    - Some experience/familiarity - **45%**

    - Limited experience/familiarity – **23%**

    - Very experienced/familiar – **21%**

    - No experience/familiarity – **7%**

    - Not applicable – **4%**

# Closing Poll

- After today's call, what will you do?
    - Seek out additional information on one or more of the ideas – **61%**
    - Consider implementing one or more of the ideas discussed – **28%**
    - Make no changes to your current approach – **11%**
    - Other (please explain) – **0%**

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