

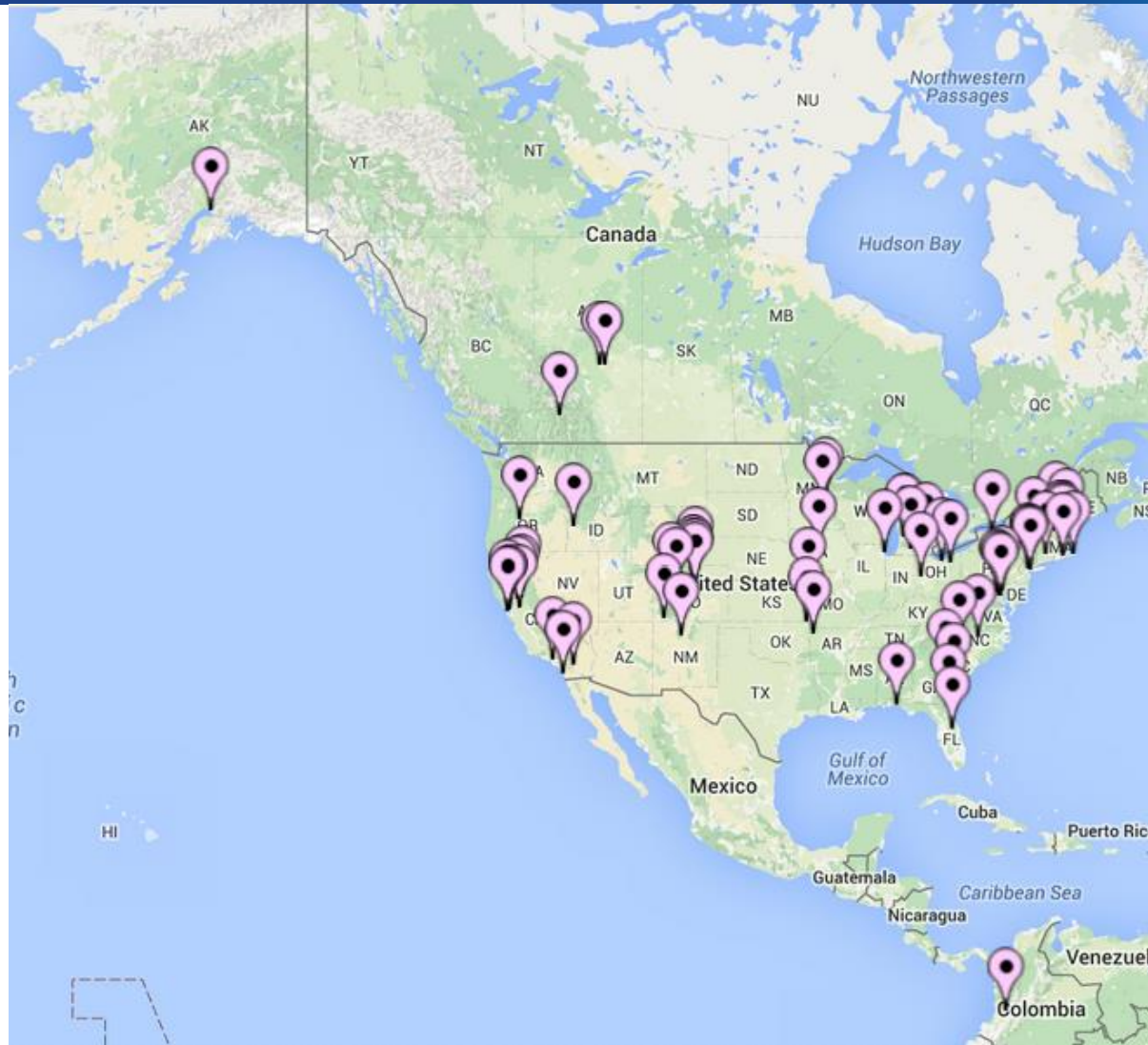


Better Buildings Residential Network Peer Exchange Call Series: *Where Do We Go From Here? The Changing Landscape of Residential Energy Efficiency (201)*

February 18, 2016

Call Slides and Discussion Summary

Call Attendee Locations



Call Attendee Locations, continued



Call Participants – Network Members

- Alaska Housing Finance Corporation
- Arlington County
- Boulder County, CO
- Build It Green
- CalCERTS, Inc.
- City of Kansas City, MO
- City of Providence, RI
- Civic Works
- CLEAResult
- Conservation Consultants Inc.
- Earth Advantage Institute
- Ecolighten Energy Solutions Ltd.
- Efficiency First
- Efficient Windows Collaborative
- Energy Efficiency Specialists, LLC
- Local Energy Alliance Program
- Metropolitan Washington Council of Governments
- Midwest Energy Efficiency Alliance
- NYSERDA
- OmStout Consulting
- South Burlington Energy Committee
- VEIC
- WECC

Call Participants – Non-Members (1 of 4)

- 1000 Home Challenge
- AJO
- AnnDyl Policy Group
- AppleBlossom Energy Inc.
- Armando Cobo, Designer
- Aspen CORE
- Association of Polish Electrical Engineers
- BA Consult
- Bend Energy Challenge
- BKi
- BPA
- Brand Cool
- BRANZ
- Brendle Group
- CAA
- City of Akron, Ohio
- City of Ann Arbor, MI
- City of Calgary
- City of Grand Rapids, MI
- City of Milwaukee, WI
- City of Minneapolis, MN
- City of Orlando, FL
- City of Savannah, GA
- Collaborative Efficiency
- Corcoran Management
- Craft3
- CSRA
- Cushman & Wakefield
- D3G
- Dairyland Power Cooperative
- Deutsche Asset and Wealth Management
- Downtown DC Business Improvement District

Call Participants – Non-Members (2 of 4)

- EfficiencyOne
- Ekotrope
- Emerson Climate Technologies
- Energy Design Update
- Energy Solutions Center
- ENSYSS
- Facility Management Consultores
- Fruitfull Energy
- Fujitsu General America
- GeoPraxis
- Green Builder
- Greenergy Chicago, Inc.
- Hgi
- Holy Cross Energy
- Home Innovation Research Labs
- Home Office Training & Technology
- HSB I&I
- Idaho Division of Building Safety
- Iowa State University
- La Plata Electric Association
- LANL
- Mercy Housing
- NANA
- Nat. Assoc. of Realtors
- Natural Resources Canada
- Navigant Consulting
- New Hampshire Electric Co-op
- New world Eco center
- Northeast Energy Efficiency Partnerships
- NREL
- Nu Wool Co
- Okaloosa Gas District
- Opportunity Council

Call Participants – Non-Members (3 of 4)

- Ekotrope
- Emerson Climate Technologies
- Energy Design Update
- Energy Solutions Center
- ENSYSS
- Facility Management Consultores
- Fruitfull Energy
- Fujitsu General America
- GeoPraxis
- Green Builder
- Greenergy Chicago, Inc.
- Hgi
- Holy Cross Energy
- Home Innovation Research Labs
- Home Office Training & Technology
- Home Performance Coalition
- HSB I&I
- Idaho Division of Building Safety
- Iowa State University
- La Plata Electric Association
- LANL
- Mercy Housing
- NANA
- Nat. Assoc. of Realtors
- Natural Resources Canada
- Navigant Consulting
- New Hampshire Electric Co-op
- New world Eco center
- Northeast Energy Efficiency Partnerships
- NREL
- Nu Wool Co
- Okaloosa Gas District
- Opportunity Council

Call Participants – Non-Members (4 of 4)

- OptiMiser
- Orange Energy Solutions
- PEG, LLC
- PG&E Energy Training Center
- Philadelphia Gas Works
- Proctor Engineering Group, Ltd.
- Rocky Mountain Institute (RMI)
- Salcido Solutions
- SDHDA
- SMS
- Snohomish County PUD
- Southern Energy Management
- Sustainable Real Estate Consulting Services
- The Durst Organization
- The Energy Network
- The Oberlin Project
- Therma-Stor LLC
- TNDC
- TRC Energy Services
- Universidad Autonoma de Occidente
- University of Wisconsin-Madison
- University of Wisconsin-Madison
- US EPA
- Vogtle
- XLR8SUN.com

Agenda

- Agenda Review and Ground Rules
- Opening Polls
- Brief Residential Network Overview
- Featured Speakers
 - **Rachel Gold**, Rocky Mountain Institute
 - **Mike Rogers**, OmStout Consulting (*Network member*)
 - **Nate Natale**, Home Performance Coalition
- Discussion
 - What changes or trends have you observed in the market for home energy upgrades? Which have been most significant?
 - What do those changes imply for different market actors – energy efficiency programs, contractors, financial industry, realtors, consumers, etc.?
 - What, if anything, are you going to do differently in your energy efficiency program/business based on the changes in the industry?
 - Other questions/issues related to changes in the residential energy efficiency sector?
- Closing Poll and Upcoming Call Schedule

Opening Poll #1

- What type of organization are you affiliated with?
 - Consulting firm – **28%**
 - Non-profit organization – **25%**
 - Federal, state, or local government – **21%**
 - Utility – **12%**
 - Other – **21%**

Opening Poll #2

- What is your role in residential energy efficiency?
 - Program administration and support – **53%**
 - Research and evaluation – **45%**
 - Service delivery and implementation – **32%**
 - Not involved in residential energy efficiency – **1%**
 - Other (please explain) – **18%**

Opening Poll #3

- Which of the following best describes your organization's familiarity with trends affecting the residential EE sector?
 - Very experienced/familiar – **52%**
 - Some experience/familiarity – **43%**
 - Limited experience/familiarity – **5%**
 - No experience/familiarity – **0%**
 - Not applicable – **0%**

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

Rachel Gold
Senior Associate
Rocky Mountain Institute

RESIDENTIAL ENERGY+

Together, we hold the key to better homes



Trends and Opportunities in Home Energy Upgrades



FURTHER, FASTER, TOGETHER

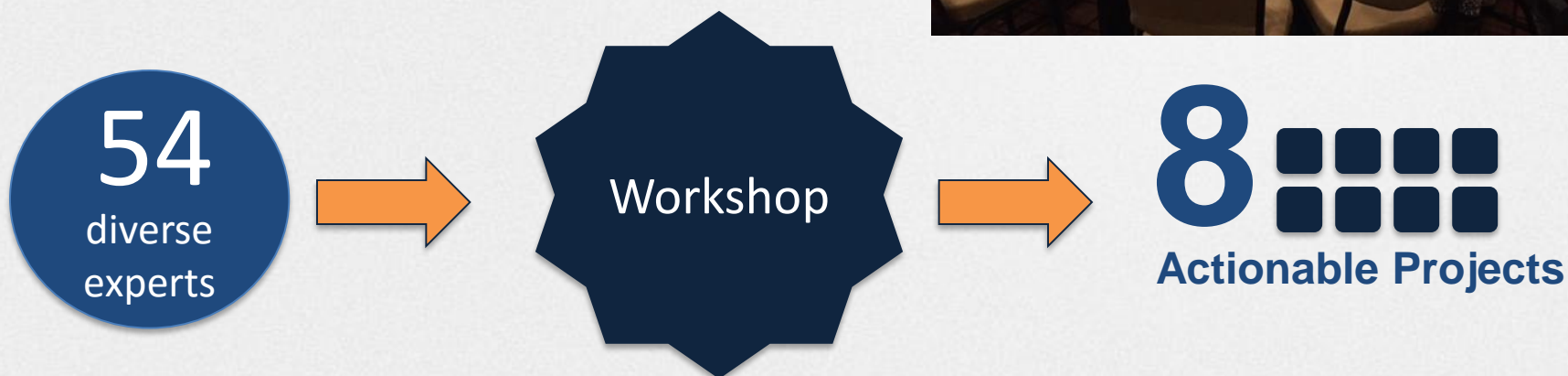
**Rachel Gold, Rocky Mountain
Institute
February 18, 2016
DOE Better Buildings
Residential Network**

Organizing Focus: the Customers



RE+ Workshop

- November 2015 in Washington, DC
- **Organizing question:** How can we unlock the residential energy market so that the majority of existing single-family homes in the U.S. get energy upgrades in the next 15 years?



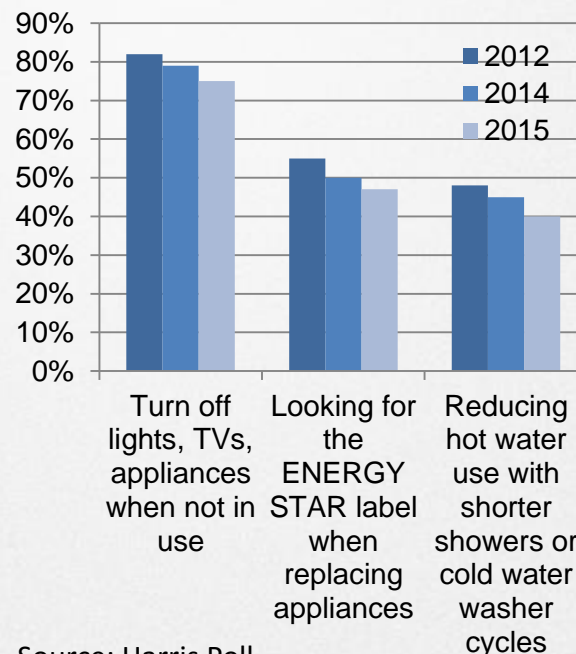
Trend: Consumer Demand Gap Between Unmet Needs and Action

- Energy efficiency is the **#1 unmet need** in homes
- But, the rate of home energy upgrades is **decreasing**



Source: Demand Institute

"Which of the following have you done to improve EE in your place of living?"



Source: Harris Poll

National Engagement Campaign

Workshop Results

Workshop group

- created **plan to create and distribute a compelling national engagement campaign** that accelerates and scales the uptake of energy upgrades in U.S. homes

RMI

- Developing campaign with Edelman and Shelton Group
- Designed to support broader goal to make energy upgrades the **expected and aspired-to standard in our homes**



Getting Involved

We'll be looking for partners to get involved **in supporting the production, testing, and distribution** of the message.

If you're interested in being part the campaign, **contact Doug Miller at RMI**

Trend: Value Increasingly Visible, but Needs Translation for Market Actors

- New **willingness of market actors to share information** about energy upgrades
- Increasing evidence that energy upgrades **improve asset value and reduce default rates**



Finance the Future Campaign

Workshop Results

Workshop group

- Identified “**silver bullet**” **opportunity** to comment on FHFA “Duty to Serve” rule

If successful, home energy use would be incorporated in underwriting practices, which could

- 1) **mitigate default and collateral risk** and
- 2) **improve access** to higher quality building stock for low-moderate income homeowners



Getting Involved

RMI in partnership with the Institute for Market Transformation (IMT) and Natural Resources Defense Council (NRDC) is providing organizations with **materials and "talking points" to enable them to comment** during the public comment period.

If you're interested in commenting before the March 17th deadline, contact **financethefuture@rmi.org**



RESIDENTIAL ENERGY+

Together, we hold the key to better homes

Thank you!

For more, check out: <http://www.rmi.org/residentialenergyplus>

Presentation Highlights: Rocky Mountain Institute

- **Bridging the gap:** Customers indicate that energy efficiency (EE) is important and that they are unsatisfied with the efficiency of their homes, but the number of upgrades is decreasing in many places. There is an unmet need to bridge the demand gap.
- **Behavioral economics** can be leveraged to address the gap, for example creating social pressure for EE.
- **Market actors**, such as real estate agents and appraisal professionals, can help increase the visibility of EE upgrades by sharing information.
- **Energy upgrades improve asset values** and default rates; studies uphold this, but people don't consider that when they buy homes.
- **Equipment manufacturers** can help by producing more efficient equipment and customizing messaging to sell EE.
- **Real estate community** is helping through realtor/appraiser education to help homeowners understand the value of EE.

Mike Rogers
President
OmStout Consulting

Looking out at Home Energy Upgrades

What's coming down the pike that impacts your efforts to improve the efficiency of America's homes.



OmStout
CONSULTING



<http://www.bloomberg.com/graphics/2014-america-shakes-off-oil-addiction/>



Electricity Price Poll

- How much do YOU pay per kWh for electricity?
 - Less than \$0.16/kWh – **58%**
 - \$0.16/kWh to \$0.23/kWh – **26%**
 - More than \$0.23/kWh – **2%**
 - Not sure / I don't know – **14%**

EXXON

Self

CASH

Regular
Unleaded

173 $\frac{9}{10}$

Plus
Unleaded

203 $\frac{9}{10}$

Supreme
Unleaded

223 $\frac{9}{10}$



People don't want heating fuel or coolant, people want cold beer and hot showers.

—Amory Lovins

Focus on What People Care About

- Comfort
- Health
- Convenience
- Cool





PACE!

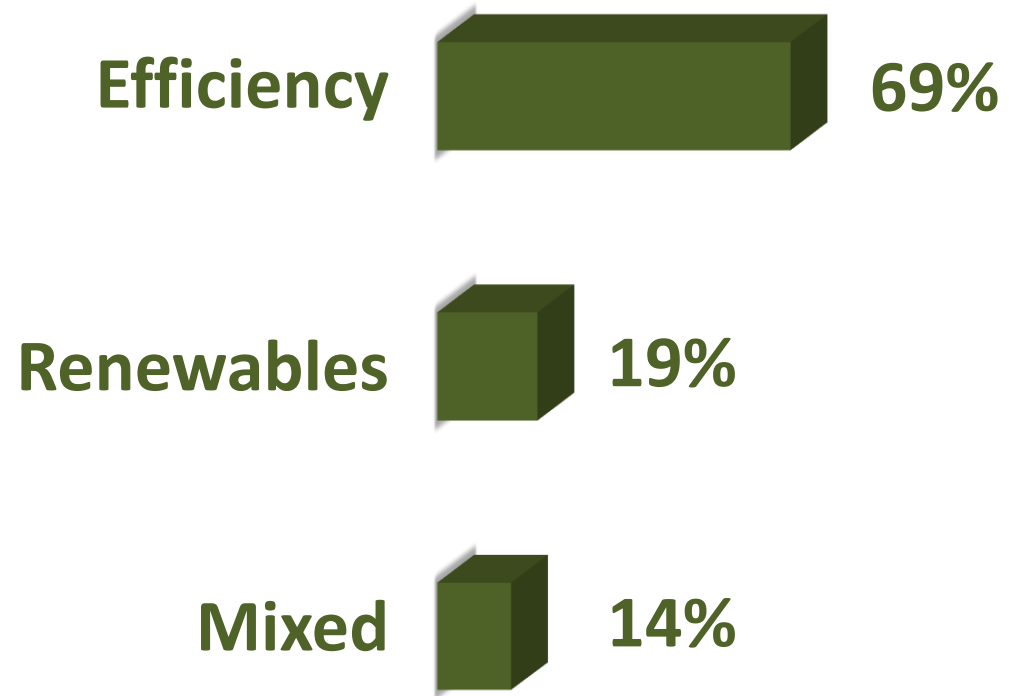
PACE Defined (at least in CA)

- Property tax assessment
- Maximum lien-to-value of 15%
- 5-25 year terms
- \$5,000 - \$200,000!
- Interest rates: around 6-8% +/-
- Plus closing costs

Residential PACE

61,000 Projects
\$1.4B Volume

**18 States w/
enabling legislation
(residential)**



Source: PACE Nation

Homes with PACE Improvements sell for higher prices than homes without upgrades.

“PACE Loans: Does Sale Value Reflect Improvements?”

by Laurie Goodman and Jun Zhu

Journal of Structured Finance, Winter 2016

<http://bit.ly/paceJSF16>



**Time On Market?
Will it Blow PACE up?**

Mon Oct 19, 2015 5:51am EDT

Related: U.S., ENVIRONMENT, GLOBAL ENERGY NEWS

Green financing has hobbled home sales in California

BY NICHOLA GROOM



"I wouldn't ever do it again," Lopez said of the PACE program he used to pay for the windows.

Home owner Steven Lista stands in his back yard under the solar panels he financed using a government sponsored system in Eastvale, California September 4, 2015.

REUTERS/MIKE BLAKE

1 of 4

PACE Challenge?

80 / 20 Rule

Recruitment of, engagement with,
and strong participation by
contractors is a hurdle

90 / 10 Rule

Contractors



- Started in 2006.
- “Acquired” Recurve installation division in 2010.
- A top contractor in PG&E’s EUC program

Contractors



- Started in 2010.
- 2013 U.S. DOE Housing Innovation Award
- 2013 HPWES Top Contractor Award
- 2013 & 2014 U.S. DOE Century Club Award

It's not all Gloom & Doom - Training can help

- Increased sales 12%
(2013 to 2014)
- Ticket sizes increased.
- Profits DOUBLED.
- Quarter over Quarter EUC submissions
doubled.



Program Implications

- Brands and incentives... helpful, but not enough.
- To scale, you must understand the market, and how to profit.
- You can't ignore the business side.
- Find and promote success.
- Work with partners to build tools needed for success.

Thank you!



Mike Rogers
***OmStout* Consulting**
<http://omstout.com>

twitter: **@EnerGMatters**

Presentation Highlights: OmStout Consulting

- **Doing well by doing good:** Programs must work with contractors to help them incorporate EE into their business models, so that they can continue to prosper once incentives are gone.
- **Many contractor business models can work:** Whole-home energy upgrade contractors have had success, but so have other contractors. Some contractors start from the HVAC side and grow from the ground up to address entire homes; some don't even call themselves home performance contractors.
- **PACE financing** does not solve the split incentive issues for multifamily properties, but the financial community is interested in PACE as an exciting part of the future of home performance.
- **Learn** how/when PACE financing could apply in your market: See the [PACEnation website](#).

Nate Natale
Vice President of Education and Events
Home Performance Coalition



Home Performance Coalition

An Introduction & Current Industry Engagement Activities

Nate Natale

February 18, 2016

DOE Better Buildings Residential Network

Aligning for Industry Growth



National Home
Performance Council

a division of the Home Performance Coalition



Home
Performance
Coalition

Current Activities: Innovation Forum Series

The Innovation Forum Series explores the opportunities and barriers we face as an industry interested in enhancing the performance of 130 million single and multifamily homes in the United States.

Market Innovation Forum

- Held this past December in San Francisco, CA
- 40 leaders from the manufacturing, financial, health, technology, and contracting sectors
- 4 working groups; 10 projects emerged

Special thanks to U.S. Department of Energy for its continued support of the Home Performance Coalition's work.





Market Innovation Forum Outcomes & Next Steps

4 Working Groups:

- Partnerships
- Contractor Business Development
- Market Creation
- Data

An Overarching Need Emerged

- A unifying marketing & communications strategy for our industry

How You Can Get Involved:

- www.homeperformance.org
- Read our [“Brief Summary of the Market Innovation Forum”](#) and [“Summary and Actions We Can All Take to Scale Our Industry”](#) documents
- Be inspired to join a working group and help us seize the day!

Presentation Highlights:

Home Performance Coalition

- **Collaborative engagement** is working to help the industry to realize its full potential. Home Performance Coalition (a merger of ACI and National Home Performance Council) is working in concert with Efficiency First, BPI, and Home Energy Magazine to achieve that goal.
- **Develop a new model.** To adapt and evolve, home performance needs new tactics:
 - Reduce the “arrogance to relevance” ratio and accept that incremental improvements are a good thing, be more inclusive (bring manufacturers to the table), develop a collaboration innovation track
 - Develop digestible infographics
 - Create “one stop shopping” for home performance
 - Establish a partnership among multi-system operators
 - Centralized platform for research and aggregated data access
 - Pursue policy focus at the national level
 - Develop a unifying message to rally around

Explore planning, implementation, & evaluation strategies in the Residential Program Solution Center

- [Handbooks](#) - explain *why* and *how* to implement specific stages of a residential program.
- [Quick Links](#) - provide easy access to resources on the key issues that many programs face.
- [Proven Practices](#) posts - include lessons learned, examples, and helpful tips from successful programs.
 - See the latest post on [Streamlined Loans](#).



www.energy.gov/rpsc

The Solution Center is continually updated to support residential energy efficiency programs—[member ideas are wanted!](#)

Poll on Market Trends

- Which of the trends discussed today have you observed?
 - Consumers are more interested in non-energy benefits – **65%**
 - Market actors more willing to share info on energy upgrades – **35%**
 - Consumer demand for home energy upgrades is declining – **28%**
 - Home performance contractors are going out of business – **25%**
 - Other trends or comments (please explain) – **20%**

Discussion Questions

- What changes or trends have you observed in the market for home energy upgrades?
 - Which have been most significant?
- What do those changes imply for different market actors – energy efficiency programs, contractors, financial industry, realtors, consumers, etc.?
- What, if anything, are you going to do differently in your energy efficiency program/business based on the changes in the industry?
- Other questions/issues related to changes in the residential energy efficiency sector?

Closing Poll #1

- After today's call, what will you do?
 - Seek out additional information on one or more of the ideas – **87%**
 - Make no changes to your current approach – **6%**
 - Consider implementing one or more of the ideas discussed – **0%**
 - Other (please explain) – **6%**

Closing Poll #2

- What actions will you consider based on the opportunities you heard about today?
 - Participate in Home Performance Coalition Workgroups – **57%**
 - Participate in engagement campaign as a testbed for messages – **39%**
 - Learn how/when PACE financing could apply in your market – **39%**
 - Comment on FHFA “Duty to Serve” rule – **18%**
 - Other (please explain) – **21%**

What Can We Do Next?

- Learn about the Home Performance Coalition's Market Innovation Forum: [Brief Summary](#) and [Summary/Actions to Scale the Industry](#) and participate in Home Performance Coalition Working Groups: See www.homeperformance.org.
- Participate in national engagement campaign as testbed or distribution channel for messages: contact Doug Miller at RMI.
- Learn how/when PACE financing could apply in your market: See the [PACEnation website](#).
- Comment on [FHFA Proposed "Duty to Serve" rule](#) by March 17: Contact financethefuture@rmi.org for talking points.

Peer Exchange Call Series

We hold one Peer Exchange call [almost] every Thursday 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:

- **March 10:** Addressing Barriers to Upgrade Projects at Affordable Multifamily Properties (201)
- **March 17:** Rainbows and Leprechauns: Finding Gold in Partnerships (101)
- **March 24:** Home Improvement Catalyst: Sequencing Upgrades and Engaging Homeowners over Time (201)
- **April 14:** Training: How to get Results - What Matters, What Doesn't (201)
- **April 21:** Advances in Integrating Energy Efficiency into the Real Estate Market (301)
- **April 28:** Driving Change in Residential Energy Efficiency: Electric Vehicles (301)

Send call topic ideas to peerexchange@rossstrategic.com

Join us @ ACI National Home Performance 2016

Kick-off with DOE on Monday, April 4!

[Home Performance with ENERGY STAR Partner Meeting](#), 8:30 am - 5:00 pm
including special breakout sessions:

- Home Energy Score, 1:30 - 2:50 PM
- Home Energy Information Accelerator, 3:00 - 4:20 PM
- Trade-Based Approach – DOE Home Improvement Catalyst, 3:00 - 4:20 PM

Getting Started with HPXML workshop – *Monday afternoon*

Meet us at many more
sessions, April 5-7!

[Early registration](#) deadline: March 3.



Meet us at sessions, April 5-7!

T, 4/5

- Home Upgrade Program Models for Acquiring Savings in Multiple Climate Zones
- Residential Energy Labels, Why Should You Care & What Do You Do About It?

W, 4/6

- Showcasing Home Performance with ENERGY STAR Contractors
- Transforming the Market with HPXML: Strategies and Lessons Learned
- What Building America Learned in 4 Years About Retrofits & Staged Upgrades
- Realizing the Market Value for High Performance Homes: Reports from the Field
- Health & Home Performance: Unlocking New Funding, Marketing, & Data Value
- The Quest for Smarter Performance Measurement
- The Home Energy Data Huddle: Getting together to Build an Information Pipeline

R, 4/7

- Home Performance Financing Update & Options to Help Close More Jobs
- Insights from the Better Buildings Neighborhood Program Evaluation
- America's Building Blocks to High Performance Housing

Download the full [ACI National Home Performance Conference Agenda](#) for more details.

LET'S ALL MEET IN MAY!

REGISTER TODAY for the BETTER BUILDINGS SUMMIT

Washington, DC · May 9-11, 2016

SAVE YOUR SPOT NOW:

**[https://ww2.eventrebels.com/er/Registration/StepRegInfo.jsp?ActivityID=14611
&StepNumber=1](https://ww2.eventrebels.com/er/Registration/StepRegInfo.jsp?ActivityID=14611&StepNumber=1)**

This Summit will bring together Better Buildings partners and stakeholders to exchange best practices and discuss future opportunities for greater energy efficiency in America's homes and buildings.

There will be time set aside for a specific Residential Network discussion and meet-up!