



Better Buildings Residential Network Peer Exchange Call Series: *Boom Chika Boom: Demand Response and Behavior Change (301)*

November 3, 2016

Call Slides and Discussion Summary

Agenda

- Agenda Review and Ground Rules
- Opening Polls
- Brief Residential Network Overview
- Featured Speakers
 - **Michelle Finchum**, Community Engagement Division, City of Fort Collins Utilities (*Network Member*)
 - **Reuven Sussman**, Manager, Behavior Program, American Council for an Energy-Efficient Economy (ACEEE) (*Network Member*)
 - **Douglas Miller**, Senior Associate, Rocky Mountain Institute
- Discussion
 - What approaches has your organization used to change homeowner behaviors to reduce energy demands?
 - What has been most effective? Most cost-effective?
 - How do you motivate residential customers to participate in demand response programs?
 - What are effective ways to encourage homeowners to conduct home energy upgrades as part of energy efficiency behavior change programs?
- Closing Poll and Upcoming Call Schedule

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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

Best Practices: City of Fort Collins Utilities



Behavior Change and Energy Efficiency



About Fort Collins Utilities



Light and Power

- 70,500 metered accounts
- 1,851 miles of distribution lines



Stormwater



Water

- 35,000 metered accounts
- 544 miles of water mains

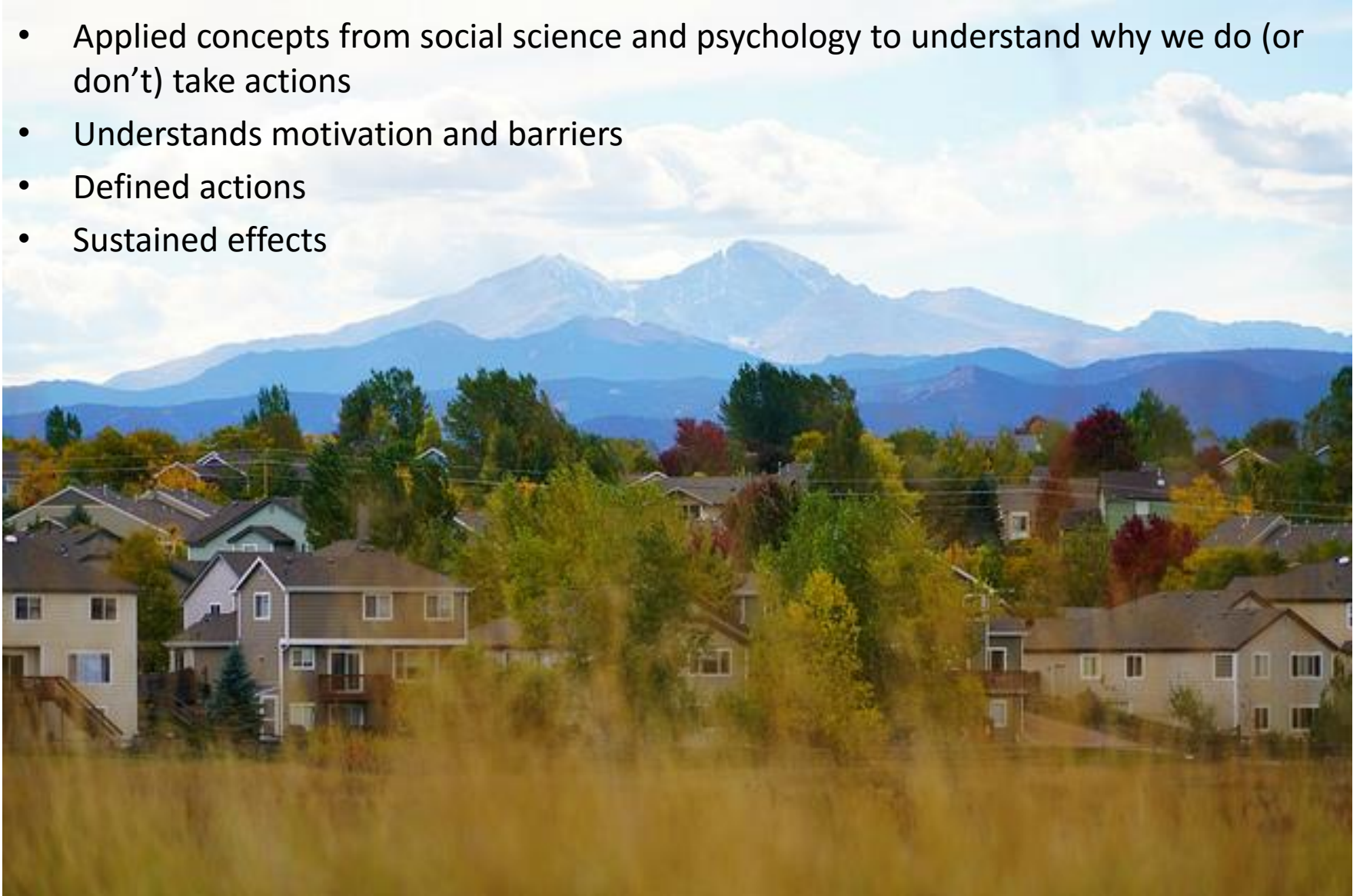
Wastewater

- Two treatment plants (capacity 29 MGD)



What is a behavior change campaign?

- Applied concepts from social science and psychology to understand why we do (or don't) take actions
- Understands motivation and barriers
- Defined actions
- Sustained effects



Steps in Behavior Change



Awareness

Attitude/Values

Knowledge

Skills

Action

Utilities Energy Policy

Reduce local electricity use by
1.75% per year for 2 years
2.5% per year by 2020+

City of Fort Collins Climate Action Plan (2015 goals)

- 20% reduction by 2020
- 80% reduction by 2030
- Net carbon zero by 2050



LEADING THE WAY IN ENERGY EFFICIENCY



\$5,000,000 for the winning community

LOSE -A-WATT

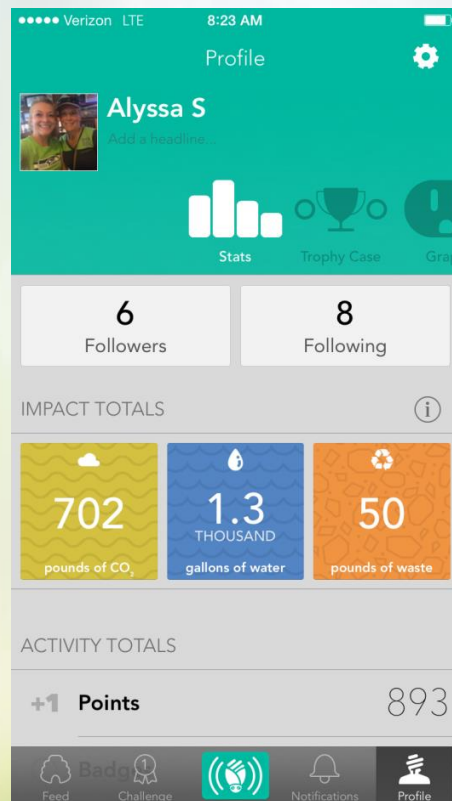
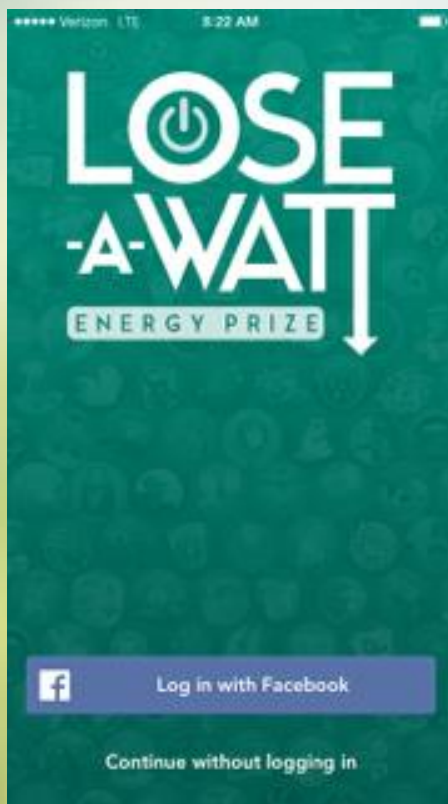
ENERGY PRIZE

City of
Fort Collins

LOSE-A-WATT

ENERGY PRIZE

App



Demand Side Management and Efficiency

- Monitor My Use (www.fcgov.com/utilities)
- Peak Partners
- In home display
- O Power reports showcase residential peaks
- Home Energy Assessment
- Rebates from FC Utilities and Xcel



with Utilities' FREE online tool...

YOU ARE IN CONTROL

Monitor | Control | Conserve

- ▶ Monitor Your Use
- ▶ Control Your Costs
- ▶ Conserve Our Resources

The graphic features a light gray background with green accents. On the right, there is a vertical green bar with a white arrow pointing right. The background of the slide includes a white light switch and green foliage.

> Overview

> Enroll Today

> Thermostat Program

> Water Heater Program

> **Home Energy Monitor Program**

> How Cycling Works

> Smart Thermostat

> Peak Partners Dashboard

> Frequently Asked Questions

> Program Rules

> Contact Us

Home » Home Energy Monitor Program

Home Energy Monitor Program



**Peak Partners helps you
to be more efficient**

Watch your bill drop as you learn about your energy habits and make small changes that can make a big difference.

The Home Energy Monitor provides real-time tracking of your household electricity use in kilowatts, kilowatt hours, dollars and cents.¹ Track your electricity use and see exactly where you could be saving.

- Turn appliances on and off to see what your energy hogs are.
- Compare today's power usage with yesterday's usage.
- Automatically connect to your meter — no electrician set-up required.²

The monitor is available for check out at all three Poudre River Public Libraries. You can borrow the monitor just like a book. It's that easy!

Device Features

Stand it on the kitchen counter or put it on the refrigerator. Make saving energy a family affair. Load the batteries or just plug it in, then call us at 855-350-1464 to activate the meter link. In moments you're ready to start saving. (Service only available to Fort Collins Light & Power customers.)

- Two buttons for scrolling
- Secure, encrypted wireless link
- Bright, backlit screen for easy reading
- Mini USB port for downloading data
- AC adapter included for always-on operation
- Battery-powered for portability and back-up



Thank you

Michelle Finchum
Community Engagement Specialist

Best Practices: American Council for an Energy-Efficient Economy (ACEEE)

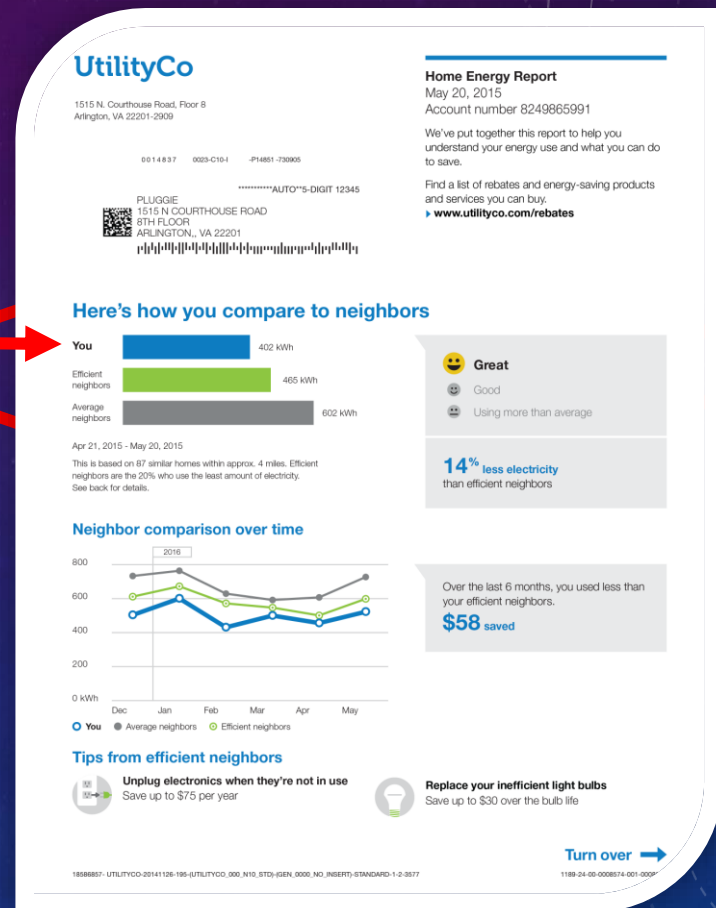
BEHAVIOR CHANGE PROGRAMS ENCOURAGING ENERGY UPGRADES

DR. REUVEN SUSSMAN

BETTER BUILDINGS PEER TO PEER EXCHANGE: NOVEMBER 4, 2016

HOME ENERGY REPORTS: OPOWER

- Strategy: Social comparison
- Mostly curtailment and lighting upgrades
- Slight uplift in other programs
- Reduced peak demand use



HOME AUDITS: NARRAGANSETT ENERGYWISE PROGRAM

- Program includes
 - In-home assessment
 - Free low-cost upgrades
 - Weatherization assistance program for heating-oil customers
- Strategies and behavioral insights
 - Foot-in-the-door and shopping momentum
 - Reciprocity effect
 - Tailored messages
 - Other elements of in-person interactions
- Savings: 13,242,000 kWh and 693,350 therms in 2014



COMMUNITY-BASED PROGRAM: AEP OHIO COMMUNITY ENERGY SAVERS

- Community level
 - Goal Setting
 - Feedback (community-level)
 - Reward (cash for communities that met goals)
- Customer level
 - Prompts (program inserts in water bills, posters)
 - Elements of social interactions from
 - Door-to-door canvassing and attending local events
- Increased participation in existing EE programs
 - 1,164 more customers, saving additional 662,704 kWh

Energy
Savers





THANK YOU

ACEEE REPORT, *Behavior Change Programs: Status and Impact:*

<http://aceee.org/research-report/b1601>

Dr. Reuven Sussman, Behavior Program
American Council for an Energy-Efficient Economy



Best Practices: Rocky Mountain Institute (RMI)



Peer Diffusion: A promising way for service providers to unlock investments in home energy upgrades



Today's release of RMI & BPI's new report
November 3rd, 2016

Doug Miller, Rocky Mountain Institute (RMI)





RESIDENTIAL ENERGY+

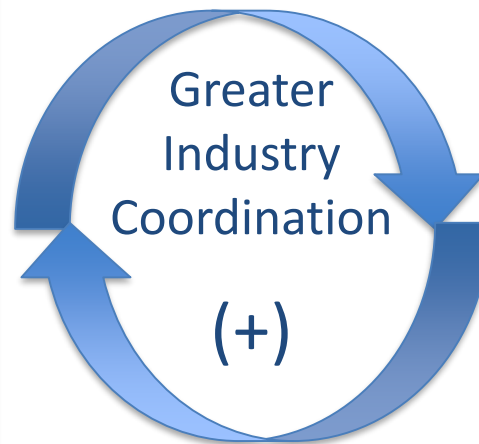
A SNAPSHOT ABOUT RMI'S INITIATIVE FOR
THE U.S. RESIDENTIAL SECTOR

CATALYZING AND SCALING A BOLD VISION FOR THE U.S. HOME ENERGY UPGRADES MARKET

In partnership with industry leaders, RMI is deploying **mutually-reinforcing market interventions nationwide with a consumer-centric approach** to empower homeowners to invest in energy upgrades and unlock the U.S. residential energy upgrades market.

Popularize and visualize the “problem”

Boost the financial, social, and emotional appeals for home energy upgrade investments using media and industry channels



Deliver an attractive, easy solution

Streamline the energy upgrade investment process with financing to make them desirable



PEER DIFFUSION

HOW SERVICE PROVIDERS AND PROGRAM ADMINISTRATORS CAN BETTER ENGAGE WITH HOMEOWNERS TO INSPIRE INCREASED HOME ENERGY UPGRADE INVESTMENTS

DOWNLOAD THE NEW RMI & BPI REPORT VIA
WWW.RMI.ORG/PDF_PEER_DIFFUSION

FINDING A COMMON THREAD ACROSS PROMISING RESIDENTIAL SECTOR DEVELOPMENTS

An opportunity emerged after we came across a number of real-world examples over a short timeframe highlighting the **important role of social interaction and social comparison** in home improvement investment decisions.

UtilityCo

Home Energy Report

Account number: 1234567890
Report period: 02/01/09 – 03/01/10

We are pleased to provide this person, to help you save energy.

The purpose of the report is to:

- Provide information
- Help you track your progress
- Share energy efficiency tips

 This information and more is available at UtilityCo.com/reports

BOB SMITH
1515 N COURTHOUSE RD
ARLINGTON, VA 22042

Last Month Neighbor Comparison

You used **22% MORE** energy than your efficient neighbors.



* This energy index combines electricity (kWh) and natural gas (therms) into a single measurement.

How you're doing:

Great 😊

GOOD 😊

More than average

Who are your Neighbors?

All Neighbors

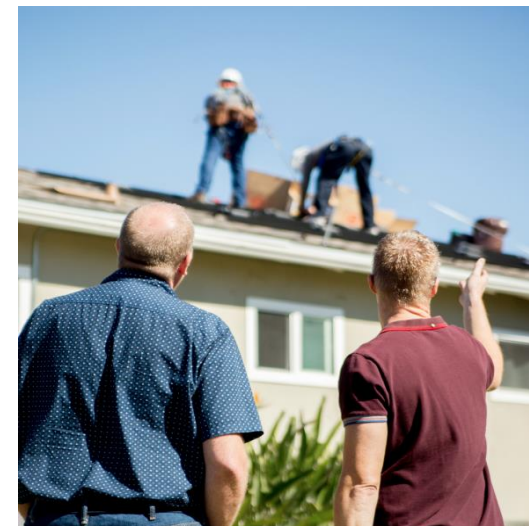
Approximately 100 occupied, nearby homes that are similar in size

Efficient Neighbors

The most efficient 20 percent from the All Neighbors group

Opower's "Home Energy Reports"

SolarCity's finding about residential solar "contagion"



Renovate America's "HERO Program"

EXPANDING THE RESIDENTIAL INDUSTRY'S USE OF “SOCIAL” TACTICS

Service providers and utility/third-party program administrators have **an opportunity to better engage with homeowners and expand homeowners' investment motivations** in order to unlock energy upgrade investments.

Peer Diffusion = a form of communication within and between networks of people that

1. Occurs through varying forms of social comparison and social interaction around an innovation (i.e., a new behavior, idea, or technology), and
2. Ultimately promotes the broader adoption of that innovation – in this case, home energy upgrades.

SPECIFYING PEER DIFFUSION TACTICS TO HELP PROMOTE ENERGY UPGRADE INVESTMENTS

Service providers and program administrators can **promote greater social interaction and social comparison** around home energy upgrades within and between their customers' peer networks by using a robust peer diffusion strategy across project phases.

<i>Platform</i>	<i>Project Phase</i>		
	Pre-Retrofit	Mid-Retrofit	Post-Retrofit
Online	Social media-promoted events, project idea and drawing board platforms, and referral platforms	Shareable photo timelines	Online referrals, side-by-side photo comparisons, and showcasing benefits
In-Person	Group energy assessments and community leader engagement	Field trips, education programs, and “DIY” workshops	Celebratory events and home tours

Additional resources like the *Better Buildings Solutions Center* provide detailed case studies.

OUTLINING POSSIBLE PRE-RETROFIT TACTICS

Service providers and program administrators can encourage more homeowners to get an energy audit, increase follow-through with recommended investments, and inspire homeowners to find ideas / interact with others about options for their own energy upgrades.

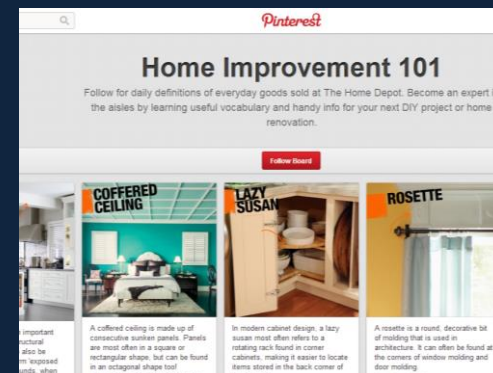
Host group energy assessments (energy “house parties”)



Engage with the broader community



Create online drawing boards and join referral platforms



OUTLINING POSSIBLE MID-RETROFIT TACTICS

Service providers and program administrators can demystify and celebrate home energy upgrades, increase the know-how of current and future homeowners, and bolster interest in residential energy industry employment.

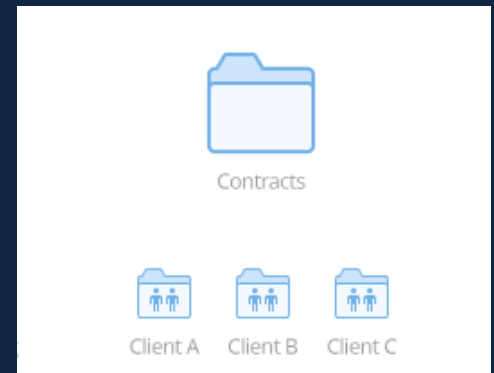
Lead project field trips / site visits



Promote know-how at DIY workshops



Encourage use of online image-sharing platforms



OUTLINING POSSIBLE POST-RETROFIT TACTICS

Service providers and program administrators can homeowners to show off their energy upgrades and provide word-of-mouth referrals.

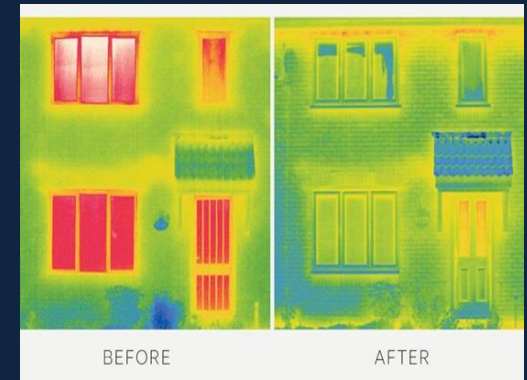
Create budget for post renovation parties



Partner with popular home tours



Post results on social media, contractor referral, and property listing platforms online



SHOWCASING IMPACTFUL HOMEOWNER ENGAGEMENT STRATEGIES

administrators who are interested in (or already) deploying online and in-person tactics that, taken together, will help make quality whole-home energy upgrades more social and their uptake more visible—making these upgrades a “must have” in homes.

**1. Download RMI &
BPI's new report**



**2. Develop, deploy,
and refine a robust
peer diffusion
strategy**



**3. Showcase
leadership and
impact**



RESIDENTIAL ENERGY+

Together, we hold the key to better homes

Doug Miller

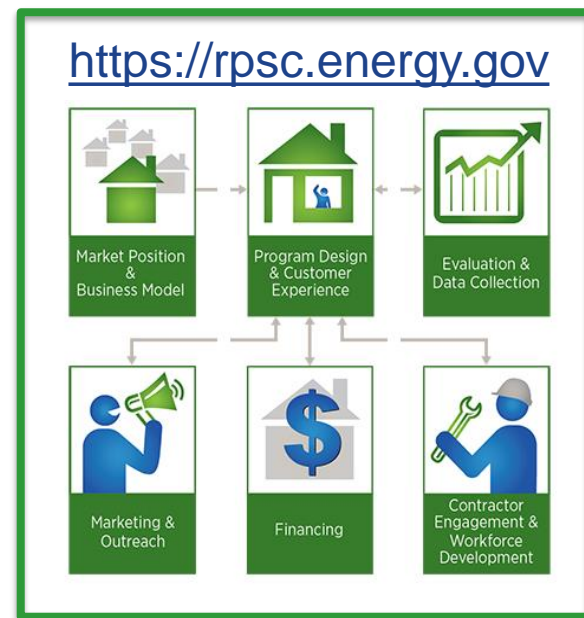
Sr. Associate, Rocky Mountain Institute (RMI)
Washington, D.C.

Download the new RMI & BPI report via
www.rmi.org/pdf_Peer_Diffusion

Related Resources in the Residential Program Solution Center

Explore resources related to demand response and behavior change strategies:

- Engage and motivate your target audience with insights from the [Program Design & Customer Experience – Assess the Market](#) handbook.
- Read this [SEE Action Network report](#) for an overview of residential customer information and behavior efficiency programs, and key challenges and solutions.
- Learn about programs that have elicited positive behavioral changes through gamified energy efficiency programs in this [ACEEE report](#).
- View this [CEE presentation](#) on lessons learned from years of collected information & analysis of behavior-based programs and program evaluation methods.



- While you're there, see the latest [Proven Practices](#) post on [Leveraging Partners to Provide Training and Develop a Skilled Workforce](#).
- The Solution Center is continually updated to support residential energy efficiency programs—[member ideas are wanted!](#)

Discussion Highlights (1 of 4)

- Behavior change campaigns use both sociology and psychology to influence actions within a community.
- Changing behaviors is an ongoing process, and there is no one silver bullet. This is why testing strategies with a small group before wider rollout is useful.
- Energy efficiency awareness initiatives (such as the City of Fort Collins' Lose-a-Watt mobile app, which promotes small behavior changes among younger age group) have the potential to motivate target audiences to make larger efficiency investments over time.
- Demand response programs that reduce peak demand may result in spillover to home upgrade projects later on, although it is difficult to determine to what extent unless those effects are tested with randomized controlled trials.

Discussion Highlights (2 of 4)

- **When designing a behavior change campaign, your program should consider the following factors:**
- **Know your audience:**
 - **Determine the attitudes, social norms, and values of the community.** Programs are most effective when they tap into existing values and take into consideration social norms.
 - **Ownership:** When communities are encouraged to set their own goals, there is more ownership over the outcome and participation.
 - **Identify barriers that prevent the community from engaging** in desired actions. Programs are stronger when they address barriers to action as well as promote actions.

Discussion Highlights (3 of 4)

- **Set clear and realistic goals:**
 - **Articulate the exact action you are trying to change to achieve energy efficiency.** Examples of concrete goals could be resetting a thermostat or weatherizing a home.
 - **Realistic Goals:** Set goals that are attainable for the community and offer different levels of goals to help individuals customize their participation.
 - **Level of Complexity:** Make the desired change clear, with actionable steps to reduce complication and encourage behavior change.
- **Tailored Messaging:** Make sure communications and materials are tailored to the desired, specific behavior. The more personal a message, the more persuasive it is.
 - Notably, messages stressing the health and environmental benefits are some of the most effective.

Discussion Highlights (4 of 4)

- **Educational Mediums:** Outreach should go beyond informational material and move to experiential learning. Create these experiences with tours of upgraded homes.
- **Prompts:** Periodically reminding participants of the desired actions, or reminders on timelines, can help remind keep participants on track.
- **Incentives:** Providing positive feedback in the form of rewards (such as a cash prize for number of homes enrolled) or public recognition can reinforce desired actions.
 - Although money is a powerful motivator, tapping into intrinsic motivation will ensure that participants will feel satisfied for their behavior long after financing goes away.

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:

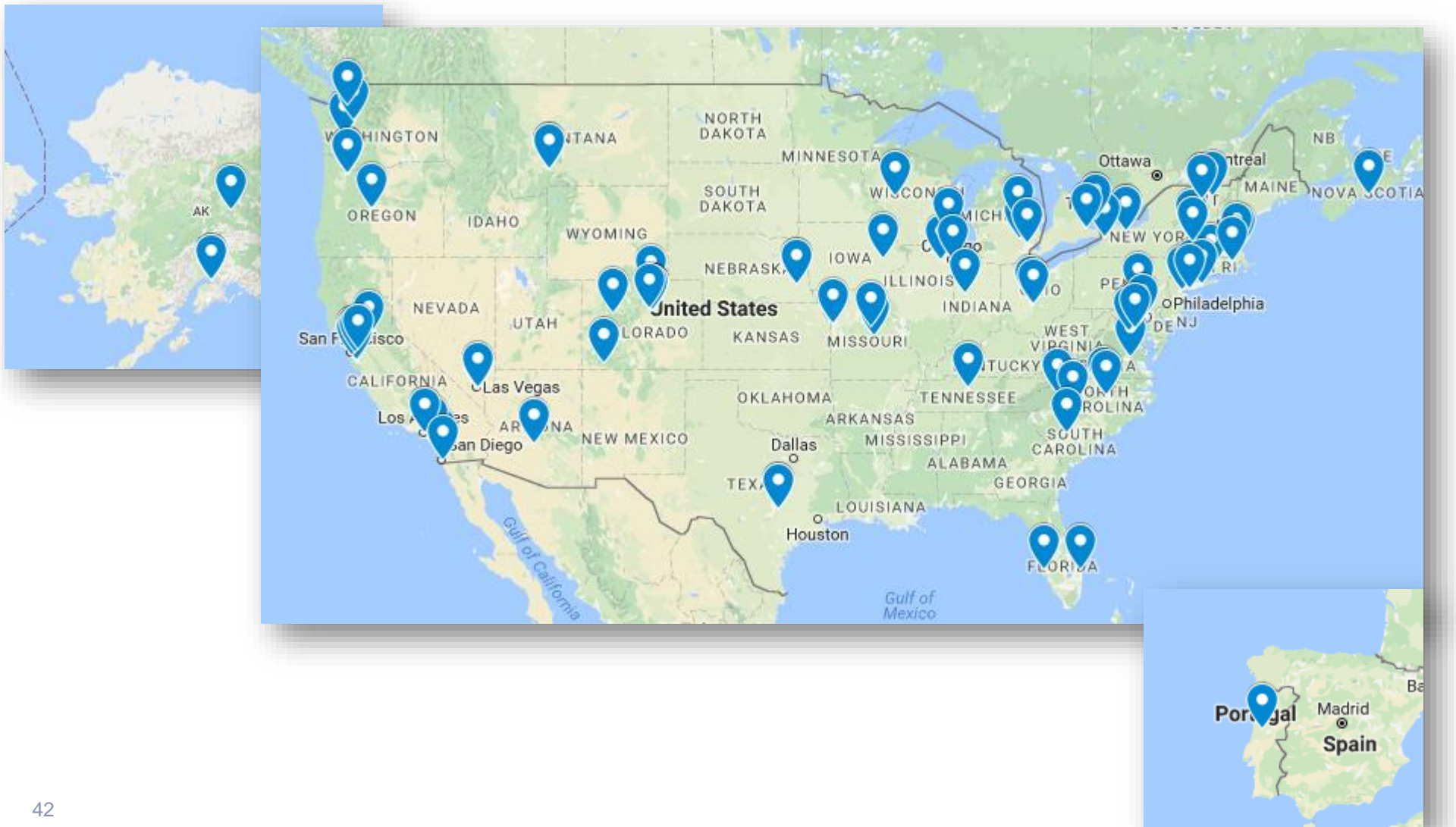
- November 10: Do You Hear Me Now? Communicating the Value of Non-Energy Benefits (101)
- November 17: Diversifying Funding Sources and Building New Revenue Streams (201)
- *November 24: No Call – Thanksgiving*
- December 1: America's Next Top Energy Model: Tools and Best Practices (101)

Send call topic ideas to peerexchange@rossstrategic.com

See the Better Buildings Residential Network Program [website](#) to register

Addenda: Attendee Information and Poll Results

Call Attendee Locations



Call Attendees: Network Members (1 of 2)

- Alaska Housing Finance Corporation
- American Council for an Energy-Efficient Economy (ACEEE)
- AppleBlossom Energy Inc.
- Austin Energy
- BAM Superior Solutions
- BlueGreen Alliance Foundation
- Building Performance Institute
- Center for Sustainable Energy
- City of Columbia (Missouri)
- City of Fort Collins (Colorado)
- City of Kansas City (Missouri)
- City of Providence (Rhode Island)
- Civic Works
- CLEAResult
- Cool Choices
- Duke Carbon Offsets Initiative
- Efficiency Nova Scotia
- Emerald Cities Seattle
- Energy Efficiency Specialists
- Environmental Protection Agency (EPA)

Call Attendees: Network Members (2 of 2)

- Group14 Engineering Inc.
- Institute for Market Transformation (IMT)
- International Center for Appropriate and Sustainable Technology (ICAST)
- Midwest Energy Efficiency Alliance (MEEA)
- Northeast Energy Efficiency Partnerships (NEEP)
- PUSH Buffalo
- Richmond Region Energy Alliance
- Seventhwave
- The Environmental Center
- New York State Energy Research and Development Authority (NYSERDA)
- TRC Energy Services
- United Illuminating Company
- Vermont Energy Investment Corporation (VEIC)
- Wisconsin Energy Conservation Corporation (WECC)

Call Attendees: Non-Members (1 of 3)

- Alliant Energy
- Arup North America
- BA Consult
- Bank of Montreal
- Bay City Electric Light and Power
- BCS, Incorporated
- BELCO Ltd.
- Blue Ridge Electric Membership Corporation
- Brand Cool
- Brooklyn Green Home Solutions Inc
- Brooks Kushman
- BSHM Architects
- California Public Utilities Commission (CPUC)
- Carolina Smart Homes
- City of Bozeman (Montana)
- City of Milwaukee (Wisconsin)
- CivicSpark
- Cold Climate Housing Research Center (CCHRC)
- Conservation Connection Consulting
- D+R International
- Ecobee
- EDGE Energy
- Energetics, Inc.

Call Attendees: Non-Members (2 of 3)

- Energy Outreach Colorado
- Environmental Design / Build
- Facility Strategies Group
- Faith in Action Bay Area
- HDR Consulting LLC
- Hearth, Patio & Barbecue Association
- Holy Cross Energy
- Huntington Bank
- Jensen Beach Green
- La Plata Electric Association (LPEA)
- Lincoln Electric System
- Mercy Housing
- MPower Oregon
- Oakland Livingston Human Service Agency
- Pennsylvania Public Utility Commission
- Public Counsel
- Purdue University
- Questline, Inc.
- Residential Raters
- Rocky Mountain Institute
- Sarasota County

Call Attendees: Non-Members (3 of 3)

- StopWaste
- Sustainable Design + Behavior
- Sustainable South Bronx
- Tennessee Valley Authority
- Terracel Energy
- The American Association for the Advancement of Science (AAAS)
- The Energy Coalition
- The Home Ventilating Institute (HVI)
- The South Carolina Office of Regulatory Staff (ORS)
- Université de Genève
- US Department of Housing and Urban Development (HUD)
- Verdis Group
- WDP & Associates Consulting Engineers
- Washington State University Energy Program

Opening Poll #1

- Which of the following best describes your organization's experience with demand response and behavior change?
 - Some experience/familiarity – **50%**
 - Limited experience/familiarity – **23%**
 - Very experienced/familiar – **22%**
 - No experience/familiarity – **3%**
 - Not applicable – **2%**

Closing Poll

- After today's call, what will you do?
 - Seek out additional information on one or more of the ideas – **56%**
 - Consider implementing one or more of the ideas discussed – **33%**
 - Make no changes to your current approach – **7%**
 - Other (please explain) – **4%**

Join our Voluntary Initiative: Help Develop a Toolkit on Community-Based Social Marketing

DOE will be developing a ***Community-Based Social Marketing Toolkit*** for 2017 that will include practical strategies, tips, resources, and case studies for engaging communities in residential energy efficiency programs.

But we can't do it alone!

Toolkits are developed with input from the Peer Exchange community. Participants will provide feedback on the toolkit and receive an acknowledgment in the publication.

If you would like to be involved in the creation of the toolkit and/or have resources that should be included, please contact peerexchange@rossstrategic.com for more information.