



## **Better Buildings Residential Network Peer Exchange Call Series: *Highlights from ACEEE Summer Study Sessions (201)***

September 29, 2016

*Call Slides and Discussion Summary*

# Agenda

- Agenda Review and Ground Rules
- Opening Polls
- Brief Residential Network Overview
- Featured Speakers
  - **Nick Mark**, Conservation & Renewable Energy Policy, CenterPoint Energy
  - **Marti Frank**, Evaluation + Strategy for Social Innovation
  - **Ram Narayanamurthy**, EPRI
  - **Samara Larson**, Sustainability and Property Services, LINC Housing
  - **Elizabeth Chant**, VEIC (*Network Member*)
- Discussion
- Closing Poll and Upcoming Call Schedule

# 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](mailto:bbresidentialnetwork@ee.doe.gov), or go to [energy.gov/eere/bbrn](http://energy.gov/eere/bbrn) and click Join*

# ACEEE Summer Study 2016

*The ACEEE summer study brings together experts to discuss the technological basis for, and practical implementation of, actions to reduce energy use and the climate impacts associated with buildings.*



*The 2016 Summer Study was held at Asilomar Conference Grounds in Pacific Grove, California August 21-26, 2016*

**Session Highlight, “Bridging the Gap Between  
Direct Install and Whole House Programs:  
Minneapolis Home Energy Squad Residential  
Engagement Pilot”**  
CenterPoint Energy

# ***Bridging the Gap Between Direct Install and Whole House Programs***

**Minneapolis Home Energy Squad Residential  
Engagement Pilot**

*Nick Mark*

*Manager, Conservation & Renewable  
Energy Policy*

*CenterPoint Energy Minnesota Gas*

*Carl Nelson*

*Director of Programs  
Center for Energy & Environment*



# Starting Point: Home Energy Squad



- Joint gas-electric direct install program (Xcel Energy & CenterPoint Energy)
- ACEEE "Exemplary Program"
- Center for Energy and Environment is implementer
- **Question:** How can we drive more whole-house saving measures through this program?



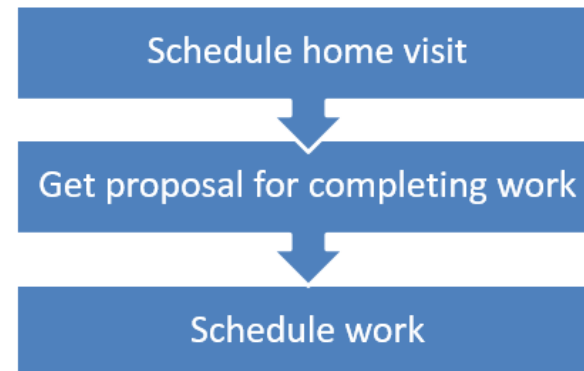
# Pilot Process: Make it easier for customers to do insulation upgrades



## Standard Process



## Pilot Process





# Providing bids at the home visit

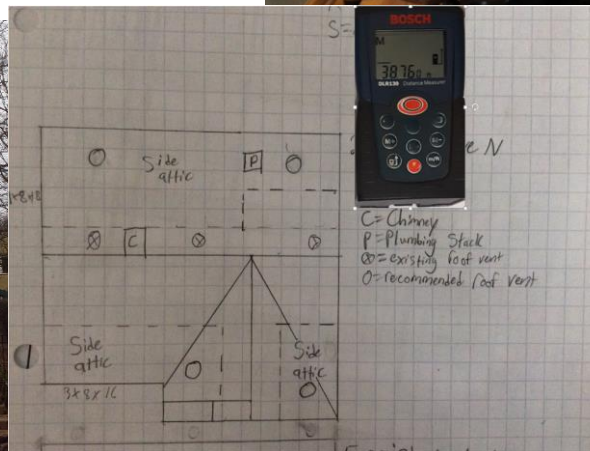
- Pre-agreed on pricing from contractors
- Technicians measure insulation and enter information into iPads
- Bids generated on-site and discussed with customer



INSULATION QUOTE				
Technician: John Kroll    Yr. Built: 1951    Sq Ft: 2684    Cfm 50: 2586    Date: 2016-07-18				
INSULATION QUOTE	R-VAL	UNITS	QTY	COST
<b>Attic Insulation</b>				
Insulate & weatherstrip existing attic ceiling/wall access	-	each	2	
Weatherstrip existing attic ceiling/wall pull out accesses	-	each	2	
Seal below kneewall (rigid barrier)	-	lf	65	
Air seal built-in units	-	each	2	
Caulk air leaks at tongue and groove/paneling boards	-	sf	40	
(Access: none) Dense pack backside eyebrow roof ceiling joists to capacity	6	sf	15	
Insulate kneewall/built-ins to R30 with fiberglass batts and house wrap	1.0	sf	380	
(Access: none) Blow insulation to achieve R50 total where possible in attic peak	10	sf	290	
Dense pack slants to capacity	4.7	sf	385	
Blow insulation to achieve R50 total in attic	18.7	sf	450	
Remove and reinstall existing vent	-	each	2	
Install new roof vent - Silver	-	each	2	
<b>Subtotal</b>				<b>\$3,567</b>
<b>Additional Items (Required)</b>				
Conduct house air leakage test when work is complete	-	each	1	\$80
Conduct water heater and/or furnace/boiler spillage test when work is complete	-	each	1	\$35
<b>Subtotal</b>				<b>\$115</b>
<b>Notices</b>				
Vermiculite: Vermiculite insulation may contain asbestos, which can cause health problems when inhaled. The EPA recommends you contact a certified asbestos removal contractor before completing any recommended air sealing and/or insulation work. Refer to the EPA Vermiculite Attic Insulation informational brochure provided by the home visit crew for more information.				
<b>NOTES:</b>				
<b>Total</b>				<b>\$3,682</b>
<b>Estimated CenterPoint Rebate*</b>				<b>\$500</b>
<b>Total After Rebates</b>				<b>\$3,182</b>

## Next Steps

1. Contact an Energy Advisor with any questions or to schedule your insulation work. 612-244-2484 or EnergyAdvisor@mncee.org
2. Once your insulation work has been scheduled you will receive an email with the contact information for your qualified insulation contractor.
3. The contractor will arrive to complete your insulation work. This typically takes 1-2 days and you can begin enjoying improved comfort and lower energy bills.
4. Apply for CenterPoint Energy insulation and air sealing rebates! Talk to your contractor about submitting a rebate application. For more information



# Energy Advisor follow-up

- Email and phone follow-up
- Answered questions, and served to remind them of their pledge to complete work
- Used City of Minneapolis time-limited financing offering to create sense of urgency




# Pilot Experimental Design



- Additional services in 1,000 Minneapolis homes
- Non-Minneapolis customers received standard HES visits as control group
- Planned to run pilot early 2015-2016
- Additional services cost \$295 per HES visit
- Questions:
  - Are pilot participants more likely to move forward with upgrades?
  - If so, is it enough to justify the incremental expense?


# Preliminary Results (Participation)



	Pilot	Base HES	REA
Total Participants	589	1,802	1,615
Pursuing Upgrades	91	38	112
Conversion Rate (z-stat of difference vs pilot)	15.4%	2.1% (8.7)	6.9% (5.3)

- Pilot visits through Nov. 2015
- HES and REA visits for calendar 2015
- Includes work scheduled but not completed at time of analysis

# Preliminary Results (Savings)



	Pilot	Base HES	REA
Total Participants	589	1,802	1,615
Pursuing Upgrades	91	38	112
Energy Savings (Dth)	2,242	699	1,736
Savings per Participant (Dth)	3.8	0.4	1.1
Savings per Job (Dth)	24.6	18.4	15.5

- Air-sealing/Insulation Saving Only (no DI measures)
- Savings per approved deemed measures


# Preliminary Results (Cost-Effectiveness)




- Utility and Societal Tests
- Incremental Savings vs Portfolio Impact
  - Are the additional 3.42 Dth per HES customer worth the incremental \$295?
- Is the overall portfolio better off with separate HES and ASI programs, or with an HES that includes additional services to build the link to ASI?
  - Considers both the cost to convert customer (\$295) and the ASI rebate



# Considerations

- 
- A thick, orange, curved line that starts on the left, rises to a peak, and then tapers off to the right, acting as a decorative separator between the title and the list.
- Possible Confounders
    - Free visits, zero-interest financing from City
  - Sensitivities
    - Cost of services, frequency of opportunity
      - ✓ Conversion rate higher (20%) among homes with opportunities
  - Training & Planning
  - Timing
  - Safety
    - 25% had safety concerns

# Next Steps

- 
- A thick, orange, curved line that starts on the left, rises to a peak in the middle, and then tapers off to the right, acting as a decorative separator between the title and the list.
- Pilot services incorporated into 2017-2019 program in recent triennial filing
    - Cost per participant lower, more targeted in provision of services
  - Pilot extended to run through 2016
    - Participation & budget goals met
    - Want to avoid disrupting services
  - Analysis of complete pilot in first half of 2017

A thick, orange, upward-curving arc that spans most of the width of the slide, positioned above the first speaker's name.

*Nick Mark*

*Manager, Conservation & Renewable Energy Policy*  
*CenterPoint Energy Minnesota Gas*  
*Minneapolis, Minnesota*

*Carl Nelson*

*Director of Programs*  
*Center for Energy & Environment*

# Presentation Highlights: CenterPoint Energy

- To move homeowners beyond recommendation to implementation, provide:
  - **Actionable information** about the state of their home and the opportunities for upgrades.
  - **A contractor bid** at the time of audit to make it easy for them to move forward.
  - **Support**, such as an advisor, who can walk them through the process and add a level of customer service.
- While the measures above led to an increase in implementation, barriers still remain:
  - **Safety issues** tended to decrease customer willingness to move forward, as it can divert funds from energy upgrades to safety measures.
  - **Copay** for materials and technicians can discourage participation in the initial visit. By providing funding for income qualified homeowners, this can be minimized.

# **Session Highlight, “Who's Participating and Who's Not? The Unintended Consequences of Untargeted Programs”**

**Evaluation + Strategy for Social Innovation**

# **Who's Participating and Who's Not?**

The unintended consequences  
of untargeted programs

Marti Frank, Evaluation + Strategy

[recap from] ACEEE Summer Study  
August 2016



## Methods overview

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Approach	Research synthesis
Sources	Published evaluation reports from PG&E, SCE, SDG&E, LADWP
Sample frame	Every published residential program evaluation for the 2010-2012 program cycle, 66 reports

## Findings Overview: Select California energy efficiency programs, 2010-2012

	Whole-house Retrofit	Plug Load/ Appliances	In-language education	Mfg'd home direct install
Income > \$100k	53%	48%	10%	Unknown
College degree	74%	87%	56%	11%
White	72%	Unknown	0%	94%
Primarily English speakers	Unknown	Unknown	3%	Unknown

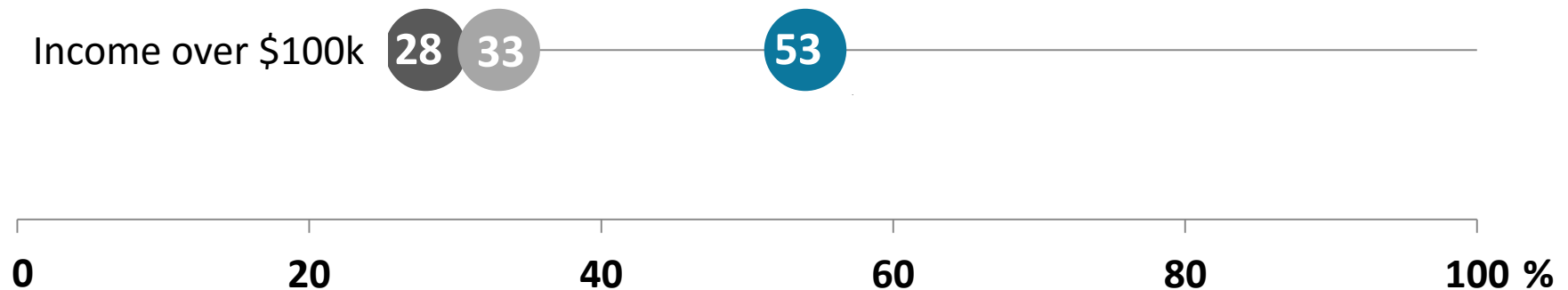
# Findings Overview: Select California energy efficiency programs, 2010-2012

	Untargeted	Targeted
	Plug Load/ Appliances	In- language education
Income > \$100k	48%	10%
College degree	87%	56%
White	Unknown	0%
Primarily English speakers	Unknown	3%

# Whole-house Retrofit: SCE, PG&E, SDG&E

## Participants had high incomes

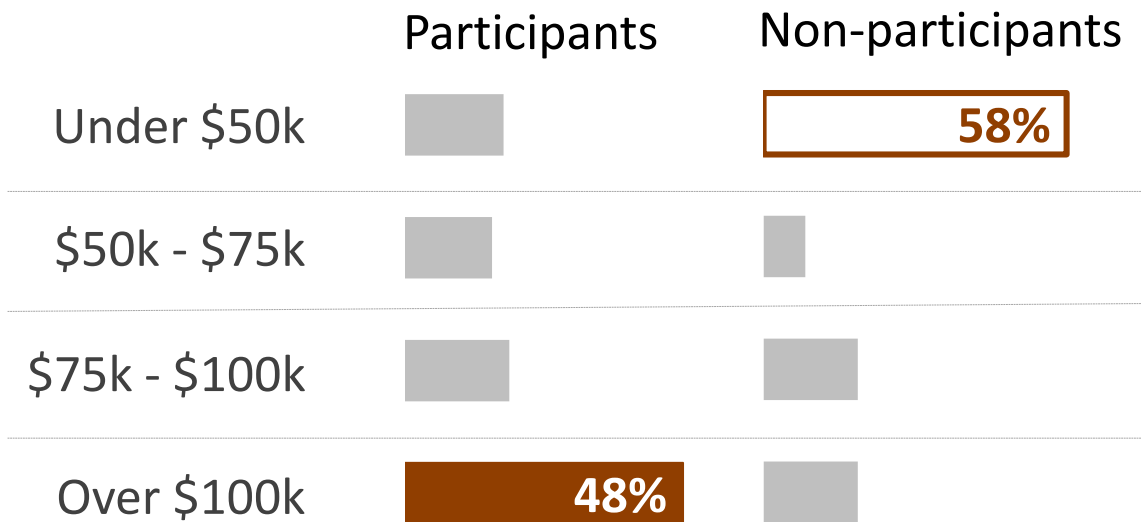
Compared to California ACS census data and RASS single-family homeowners



# Appliances: SCE, PG&E, LADWP

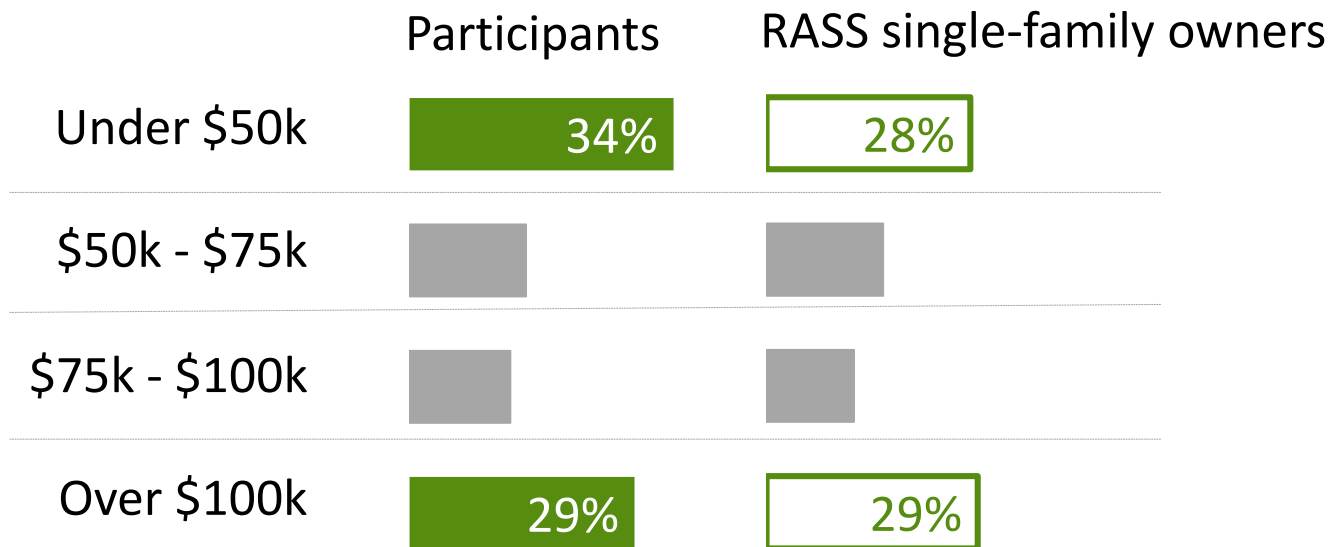
**Nearly half of participants had incomes over \$100k**

A majority of non-participants had incomes under \$50k



# Refrigerator Recycling: SCE, PG&E, SDG&E, LADWP

**Participants'** income distribution is comparable to the population of RASS single-family homeowners





# Control

# Design = Control

# Design = Control

Buy-in cost

Outreach & marketing

Implementation approach

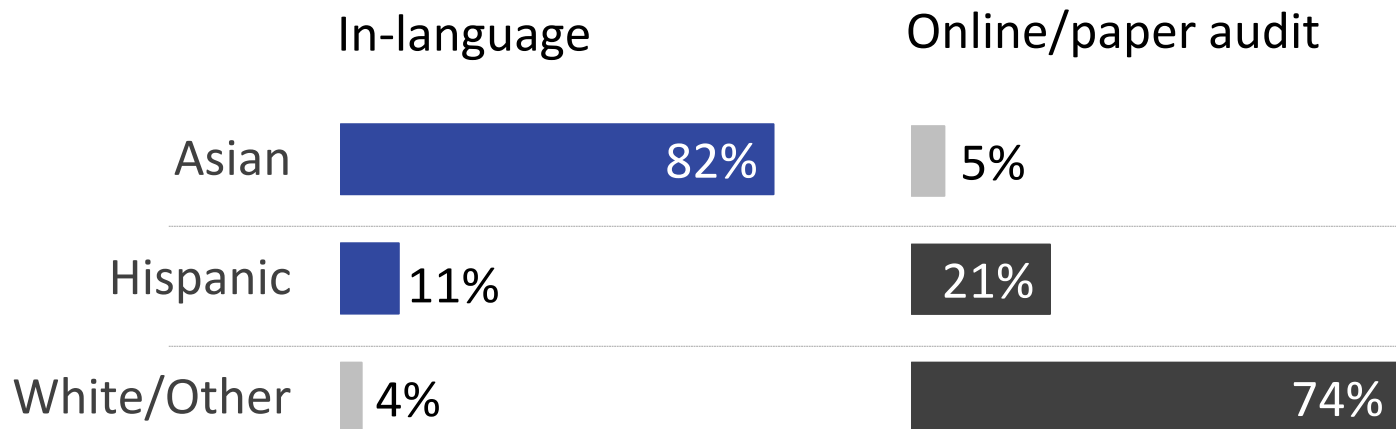
# Impact of: Buy-in cost on retrofit participants

Was ARRA funding available for whole-house retrofits?

		YES	NO
Average incentives		\$10,000	\$4,500
Projects initiated per quarter		~800-1,000	~250
<i>Participant . . .</i>	Income	Lower	Higher
	Home value	Lower	Higher
	Location	Inland	Coastal

# Impact of: Outreach & implementation on education program participants

**In-language** participants differed from online/paper home audit participants in race/ethnicity



# Argument(s)

**Program design** elements like buy-in cost and outreach method determine participant characteristics.

**Targeted programs** succeed in engaging the desired population.

**Untargeted programs** result in a participant population that is largely white, upper income, college educated, or English speaking.

# Call(s) to action

## **Evaluators**

Collect demographics using US Census questions

Report demographic data

Analyze findings by demographic variables

## **Designers & implementers**

Use participation data to innovate & refine  
program designs

# Call(s) to action

## **Policy makers**

Could there be goals for diversity in participation?

## **Funders**

Could each program have a participation target?



# **Who's Participating and Who's Not?**

The unintended consequences  
of untargeted programs

Marti Frank, Evaluation + Strategy

[recap from] ACEEE Summer Study  
August 2016

# Presentation Highlights: Evaluation + Strategy for Social Innovation

- Data from aggregated studies shows that **designers do have control over who participates** in a program.
  - Large-scale, untargeted programs that are **intended to serve all** **tend to be utilized by wealthier and whiter participants** than the general population.
  - Programs that are **intentionally designed to reach target demographics (e.g. low-income, non-native English speakers)** have representative participant demographics.
- **Recipe for success:**
  - **Low or no cost to participate:** A California program that provided a rebate for recycling a refrigerator captured a higher proportion of low income households than are present in the general population.
  - **Multilingual Outreach:** If the target population includes non-native English speakers, all communications should match this diversity, both in outreach channels and language.

# **Session Highlight**, Smart Thermostats, Electric Power Research Institute

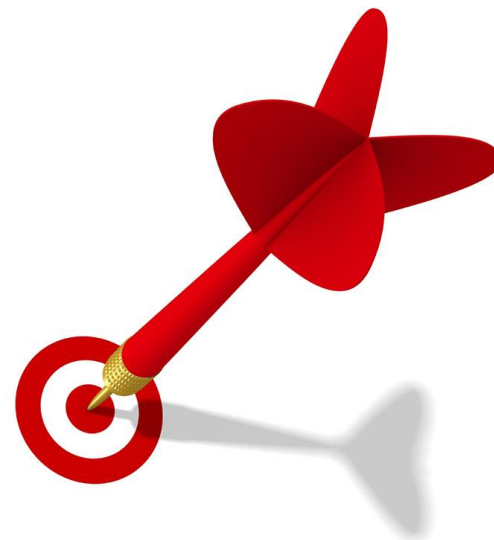
# Smart Thermostats: Learnings from a Collaborative Study

September 29, 2016



## EPRI smart thermostat collaborative

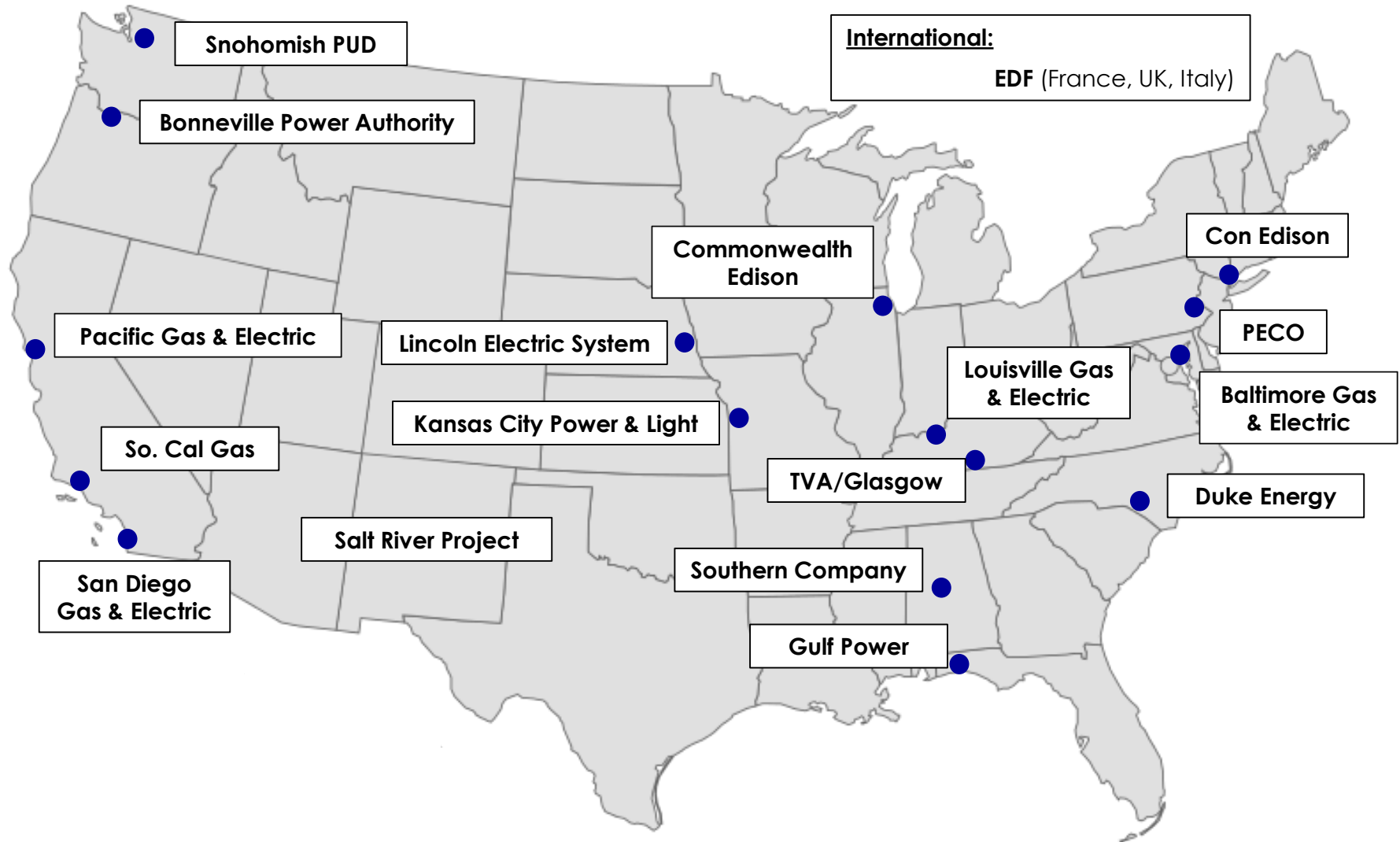
- Evaluate the impact of smart thermostats in real-world circumstances
- Effects of thermostats  
➔ as used by people –  
technology *and* behavior



Do smart thermostats  
reduce demand &  
save energy?

Uses for thermostat  
data to benefit people  
and programs?

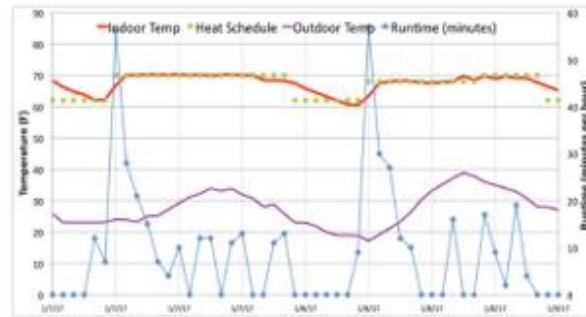
# EPRI smart thermostat collaborative



# Research activity



Pilots



Thermostat Data Analytics



Measurement & Verification



Technology Scouting

### Considered Metrics

- HVAC Run-Time**
  - Furnace Run-Time as a Proxy for Energy Savings
  - Estimates energy savings by examining the elapsed time of furnace (or AC) operation

$$Full\ size = RT \times furnace\ capacity$$

where:  
 $RT = furnace\ runtime$
- Saving Degree-Hours**
  - Identifies use of energy saving set temperatures
  - Takes into consideration thermal mass of building and outside temperature

$$Savings\ degree\ -hours, SDH = \sum_{i=1}^{n} (T_{set,i} - T_{out,i})$$

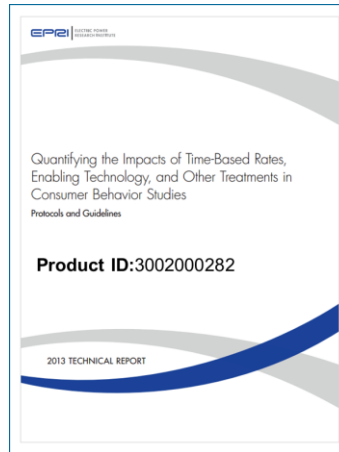
$T_{set}$  = reference thermostat setting  
 $T_{out}$  = observed thermostat setting

EPA ENERGY STAR

EPA Collaboration



Stakeholder Meetings & Workshops



## Pilots

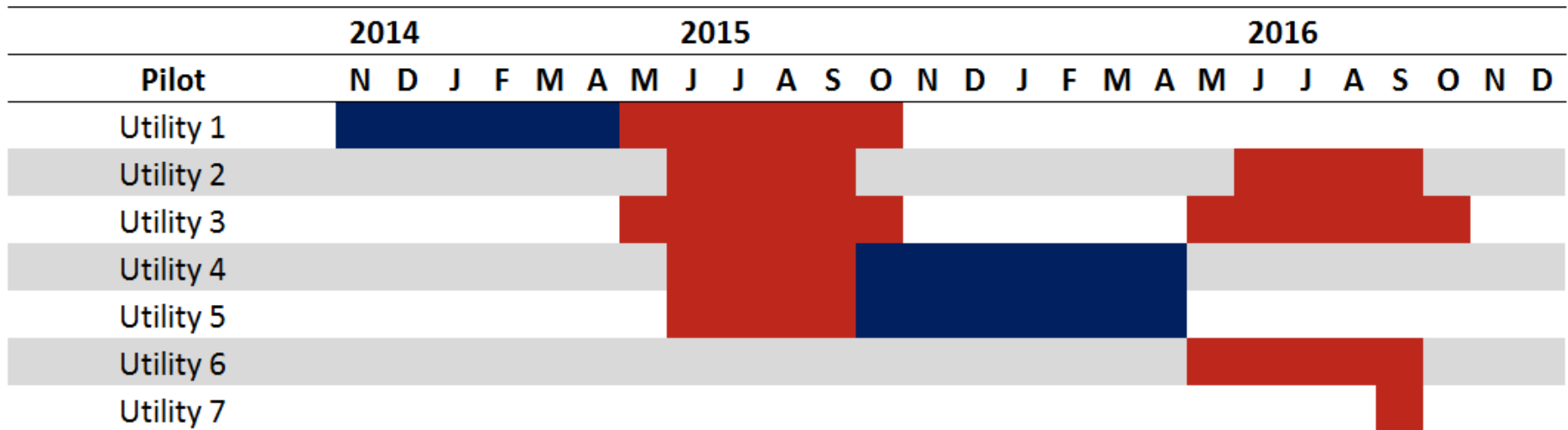


# Pilots at a glance

7  
pilots

5,000  
devices

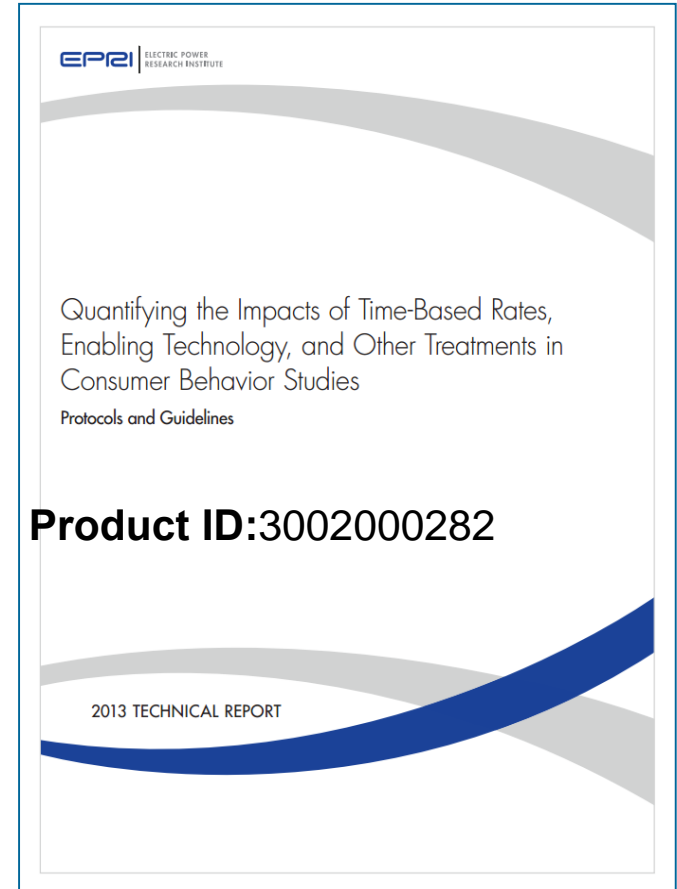
10  
devices/  
platforms



Winter Test Season  
Summer Test Season

# Pilot design approach

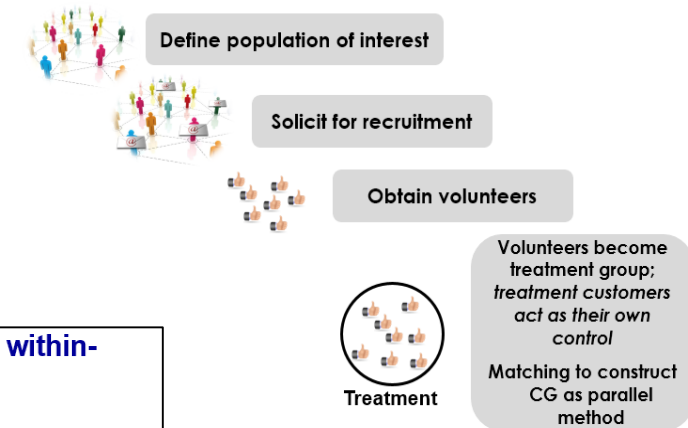
- Started with experimental
  - Randomized Controlled Trial
  - Randomized Controlled Trial, recruit & deny/delay
  - Randomized Encouragement Designs
  - Randomized Events (DR analyses)
- If not possible, quasi-experimental
  - Variation in adoption
  - Matching approaches
  - Within subjects



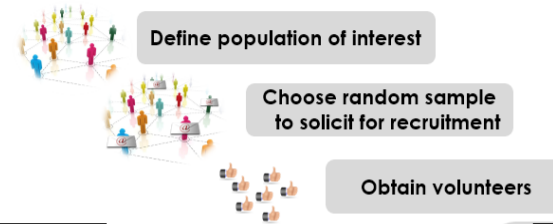
# Pilot design lessons learned

- Of 4 early pilots designs
  - 1 randomized experiment
  - 3 quasi-experiments
    - 2 with some randomization

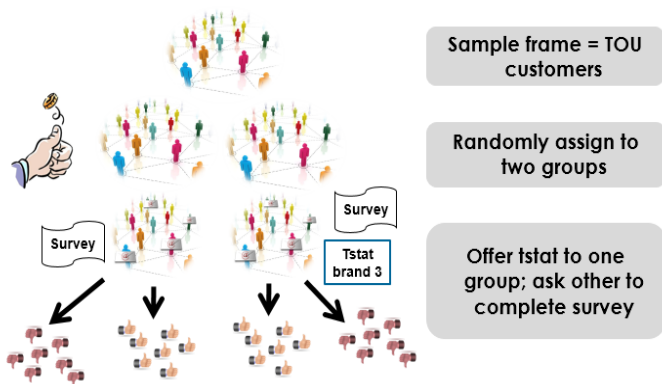
## Pilot #1: within-subjects (and matching)



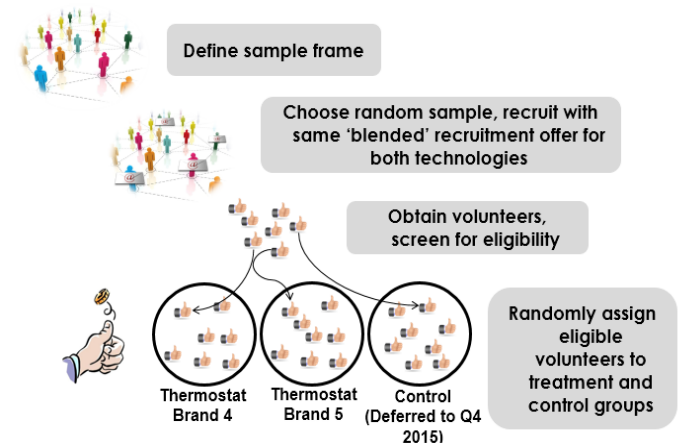
## Pilot #2: some randomized DR events + within-subjects



## Pilot #3: Hybrid recruited Control Group (quasi), back-up Randomized Encouragement Design



## Pilot #4: Randomized controlled trial (RCT), recruit and delay





## Measurement & Verification

# Preliminary impacts from four pilots

## Demand Response Impacts

(Hourly Ave Impact During  
Summer Events)

-0.7 to -1.0 kW per customer  
(from 3 smart thermostat pilots)

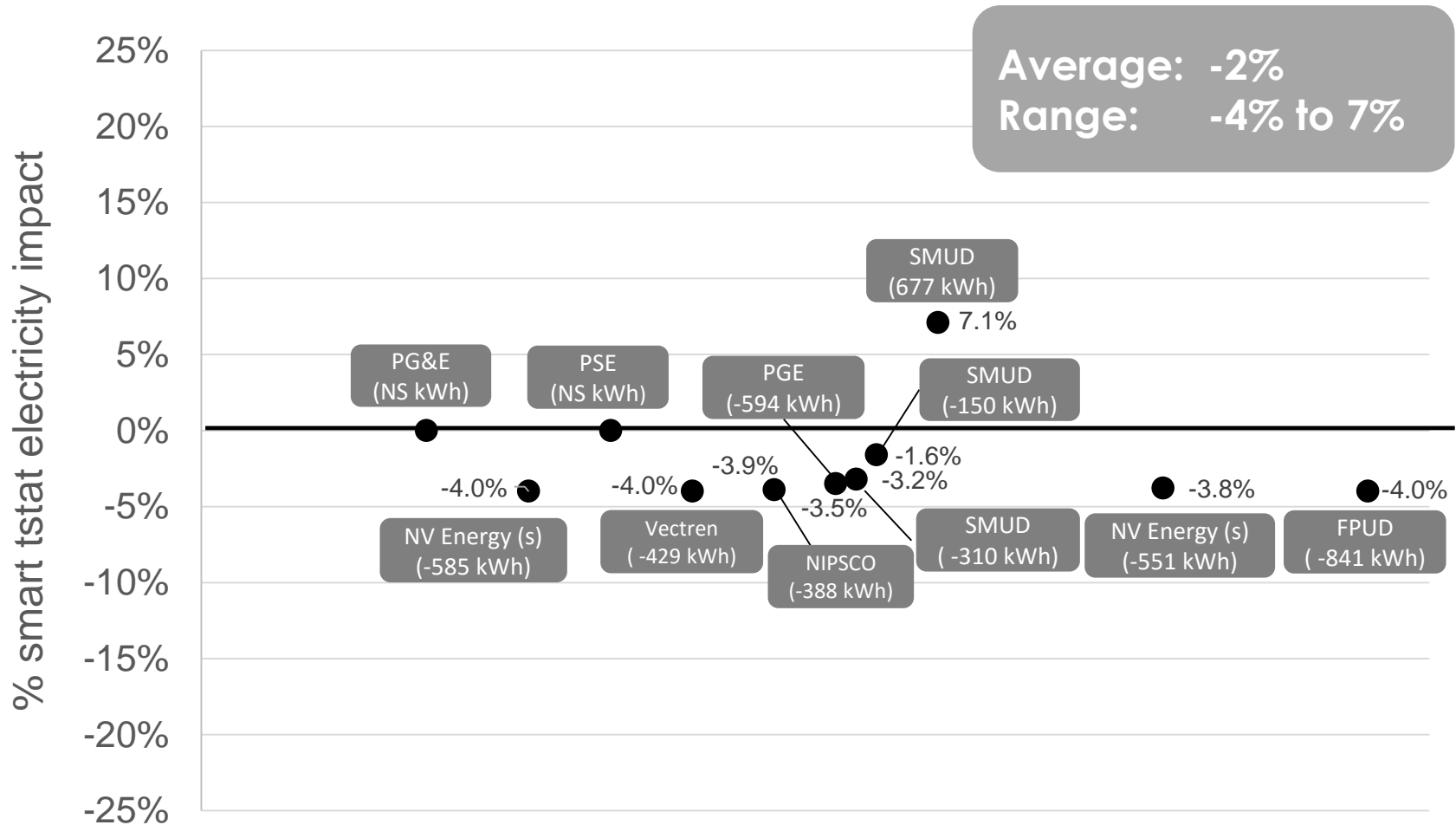
## Energy Efficiency Impacts

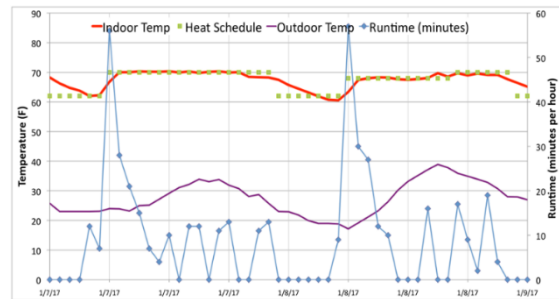
(% of Total Summer Usage)

+2% (increase in overall usage)  
to -5% (decrease)

# Review of other utility-led EE smart thermostat studies

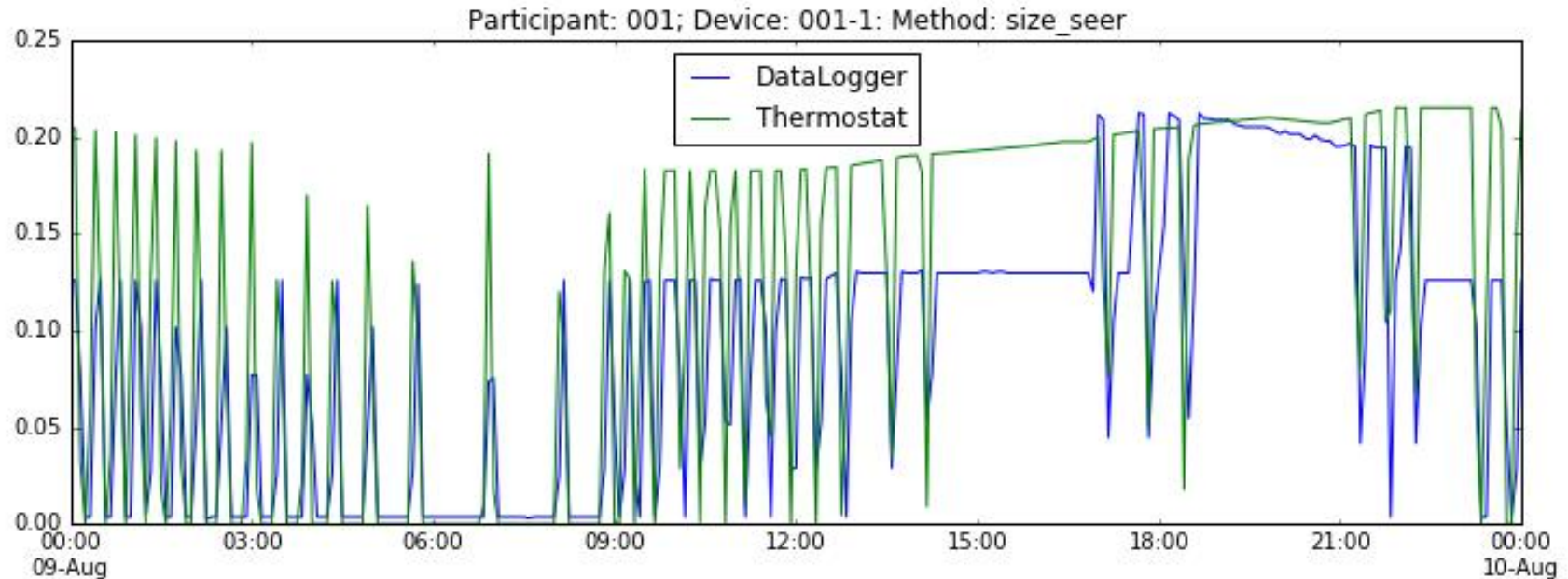
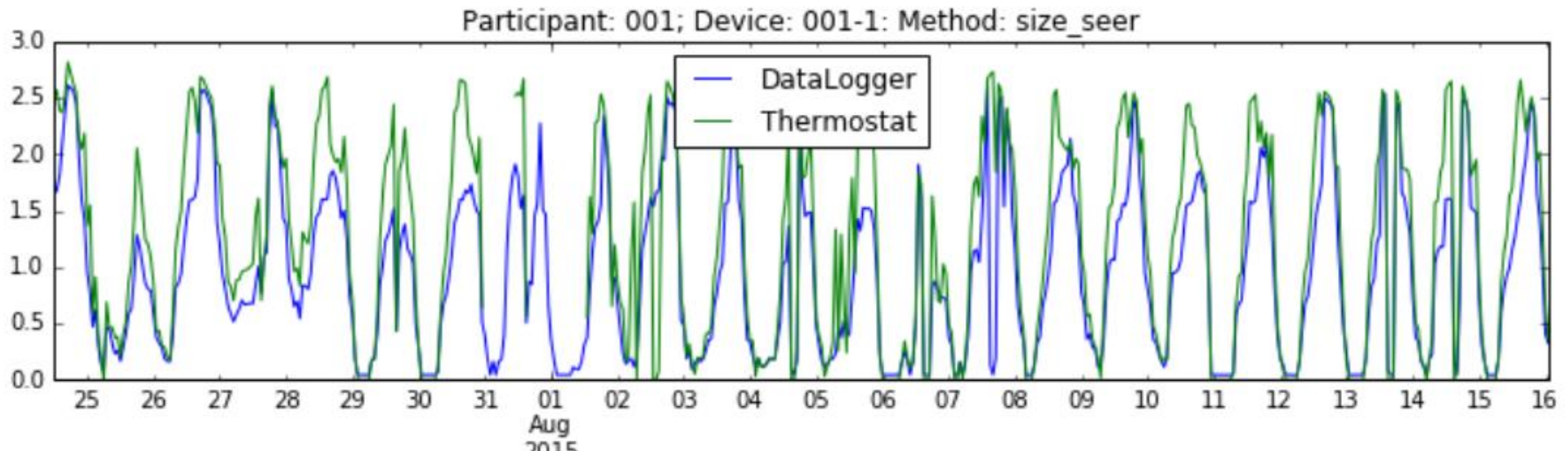
## Metric: annual electricity impact per household





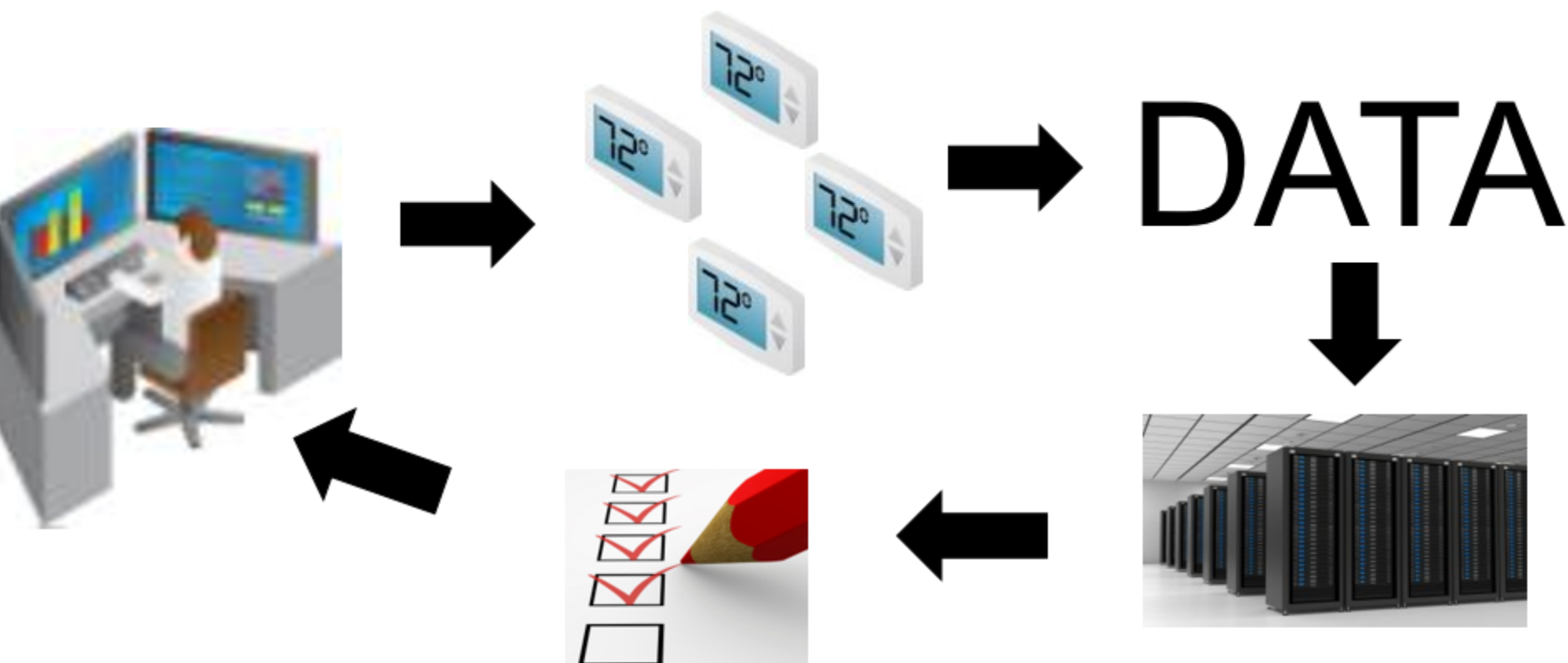
## Thermostat Data Applications

# Thermostat data value: estimating HVAC consumption





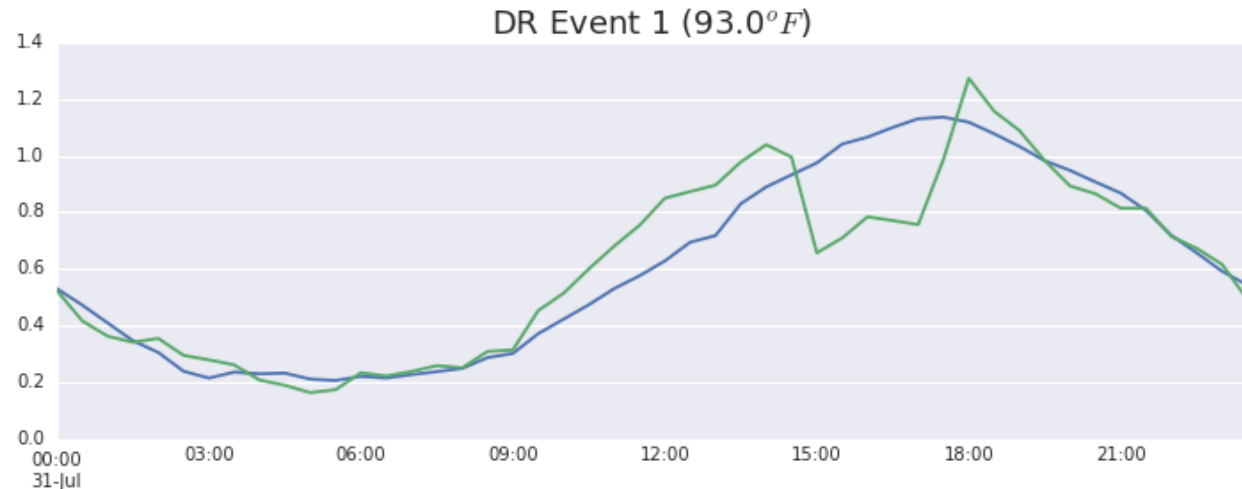
# Thermostat data value: verifying events



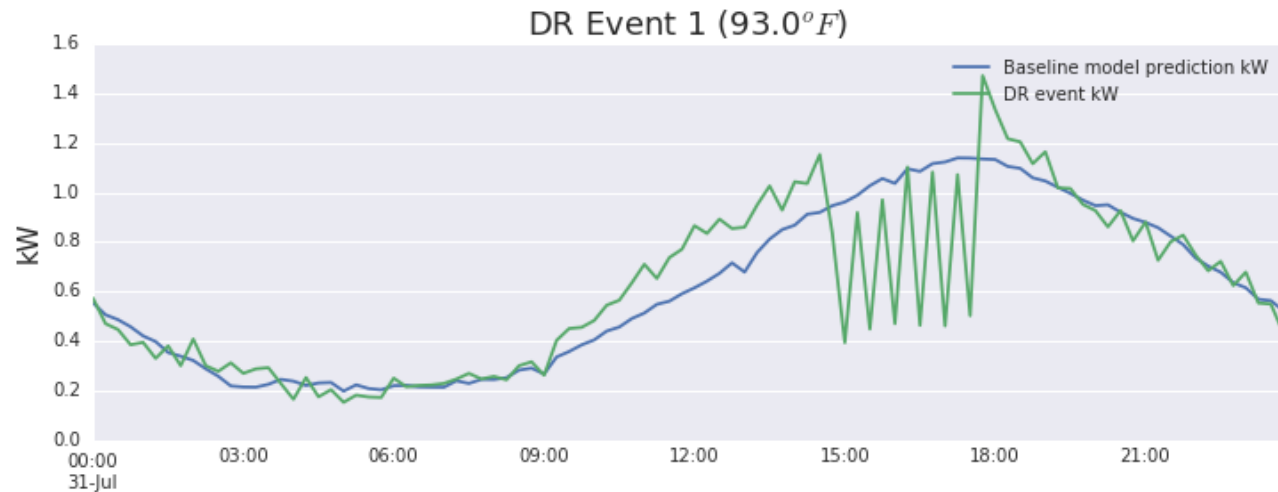
- Reports from vendor demand response mgmt. system (DRMS)
- Cross-validation using thermostat-level data
- Problem detected and corrective action in 9 days

# Thermostat data value: verifying events

**30-minute data:  
characteristics  
event 'notch'**



**5-minute data:  
saw tooth,  
meaning  
synchronous  
cycling**





## Measurement & Verification

# Preliminary impacts from four pilots

## Demand Response Impacts

(Hourly Ave Impact During  
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-0.7 to -1.0 kW per customer  
(from 3 smart thermostat pilots)

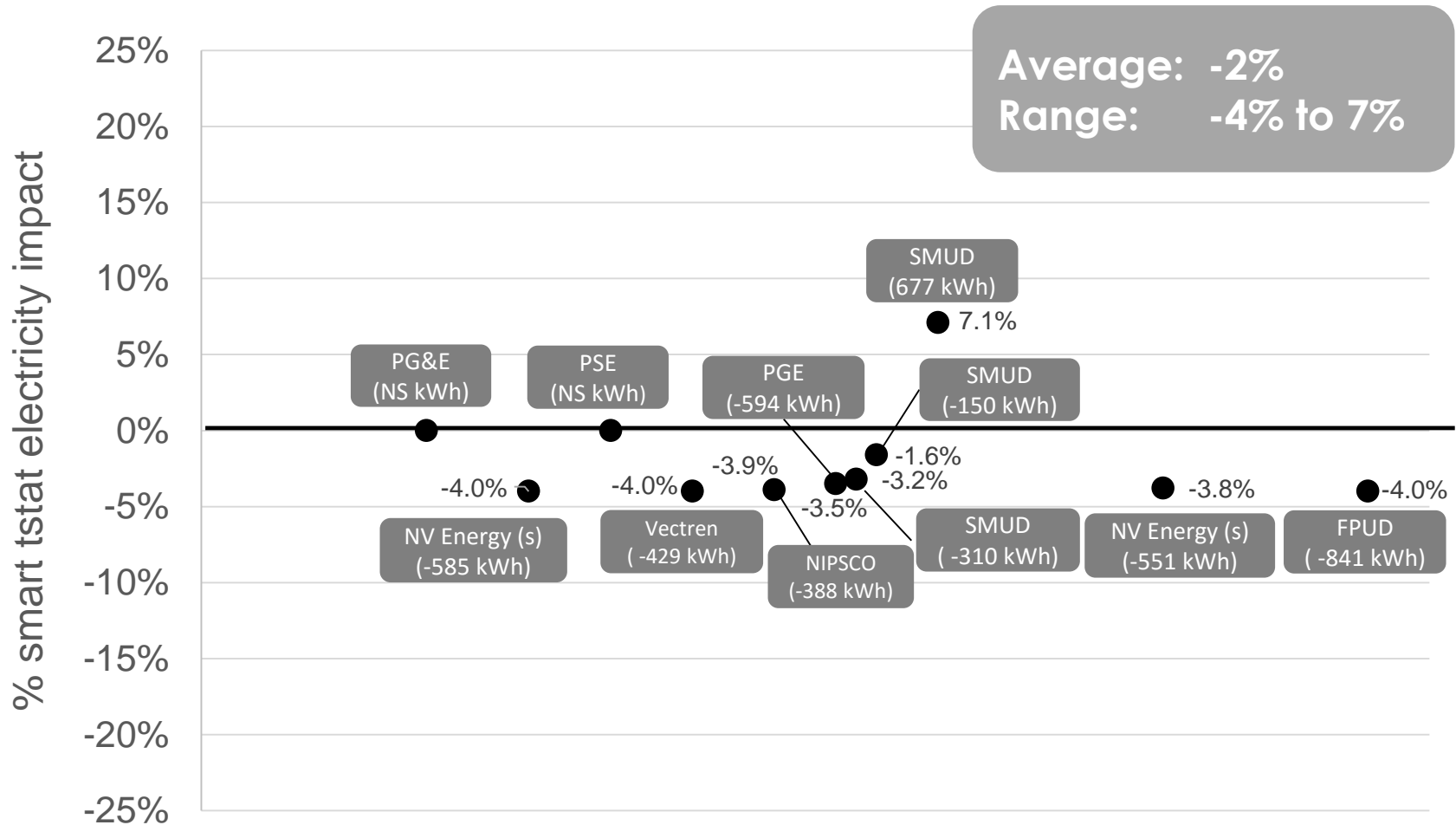
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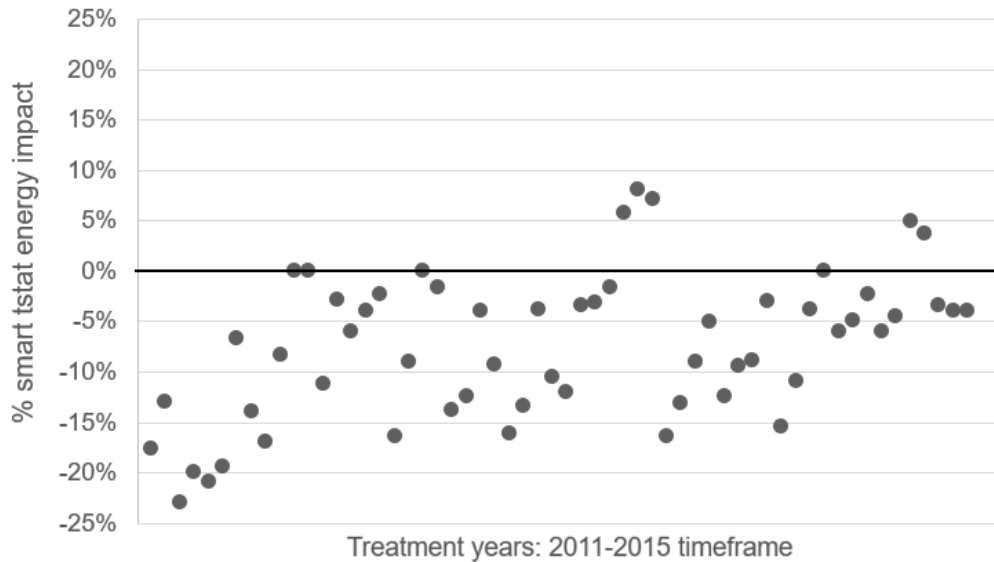
## Metric: annual electricity impact per household



# Energy Efficiency from Smart Thermostats

Results still not fully  
conclusive...

Considering ALL the results...  
(note: this slide is intentionally misleading!)

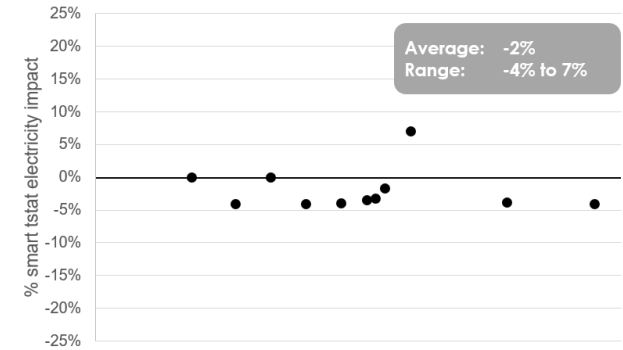


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Total annual electricity impacts per household

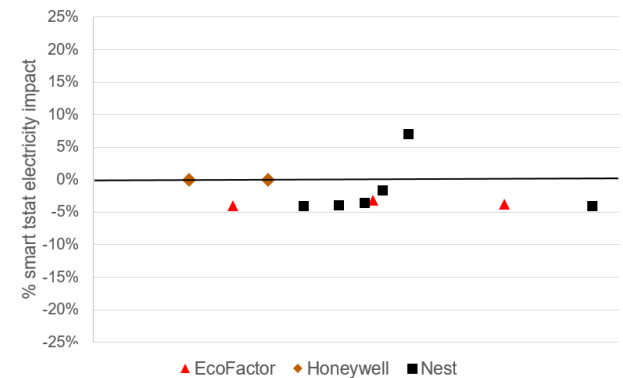


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Total annual electricity impacts per household, by product  
provider



17

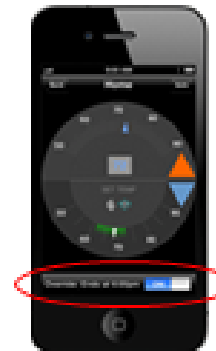
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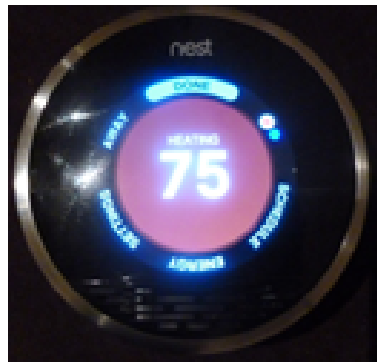
# Leads us to.... What is a Smart Thermostat (FROM 2013)?

## What is a Smart Thermostat?

- 2 way communications – built-in/ modular
- Remote control and programming – ease of use
- Captures data on HVAC, temperature, etc.



Consumer has master control



Easy access to key info and control

Ubiquitous accessibility

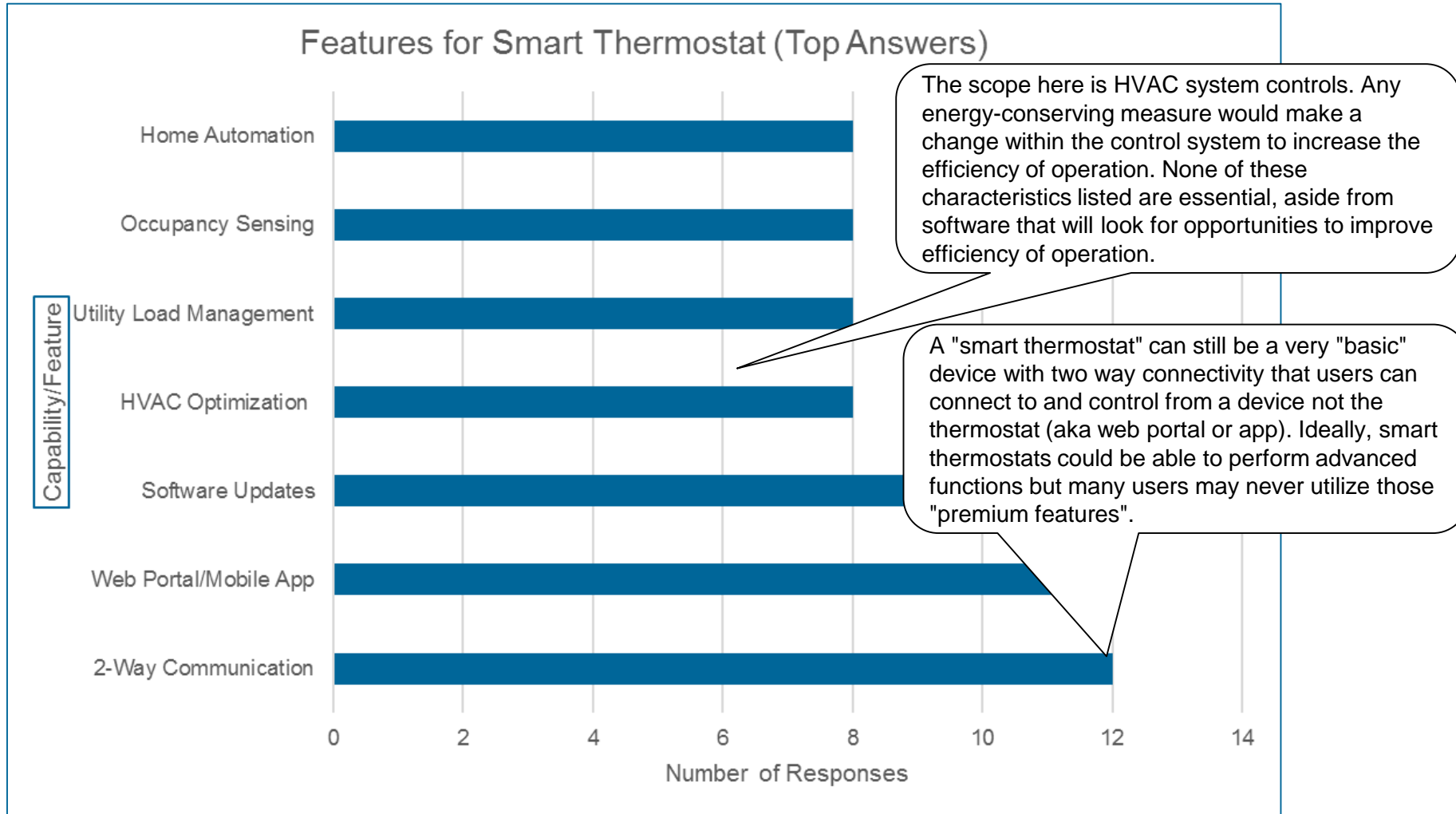


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RESEARCH INSTITUTE

# Features for Smart Thermostat





# Discussion Topics

- Is a connected thermostat necessarily “smart?” Is a smart thermostat necessarily connected or communicating?
- What are the minimum characteristics of smart thermostats to achieve energy/demand conservation?
- Discuss how your utility is approaching running IDSM programs for consumer appliances that change rapidly

# Thank you!

Ben Clarin

Ram Narayanamurthy

Jen Robinson



# Together...Shaping the Future of Electricity

# Presentation Highlights: Electric Power Research Institute

- The smart thermostat is at a critical point, where **technology and behavior intersect**, and this can help us answer questions about attitudes towards comfort.
- **A Young Science:** The study conducted by EPRI identified a number of limitations to drawing conclusions from the current data:
  - Thermostats labelled as “smart” have widely varying characteristics and many do not have the ability to capture data on the HVAC system as well as indoor and outdoor temps.
  - Although smart thermostats are seen as an energy efficiency measure, current results are varied with some homes using more energy after smart thermostats were installed.
- Studies like EPRI’s are beginning to show us **who engages with smart appliance technology and what trade offs they will make for energy use and comfort.**

# **Session Highlight, “Replicable and Scalable Near-Zero Energy Retrofits for Low-Income Multifamily Housing: An Update”**

LINC Housing



# Replicable and Scalable Near Zero Net Energy Retrofits For Low-Income Housing

*A view from inside and out*

## TEAM LEADERSHIP:

**Ian Hammon-Hogan and Rob Hammon**

BIRAenergy

**Samara Larson and Mandy Wang**

LINC Housing / SEED Partners

**Ram Narayanamurthy and Penn Zhao**

Electric Power Research Institute

**Ron Kliewer**

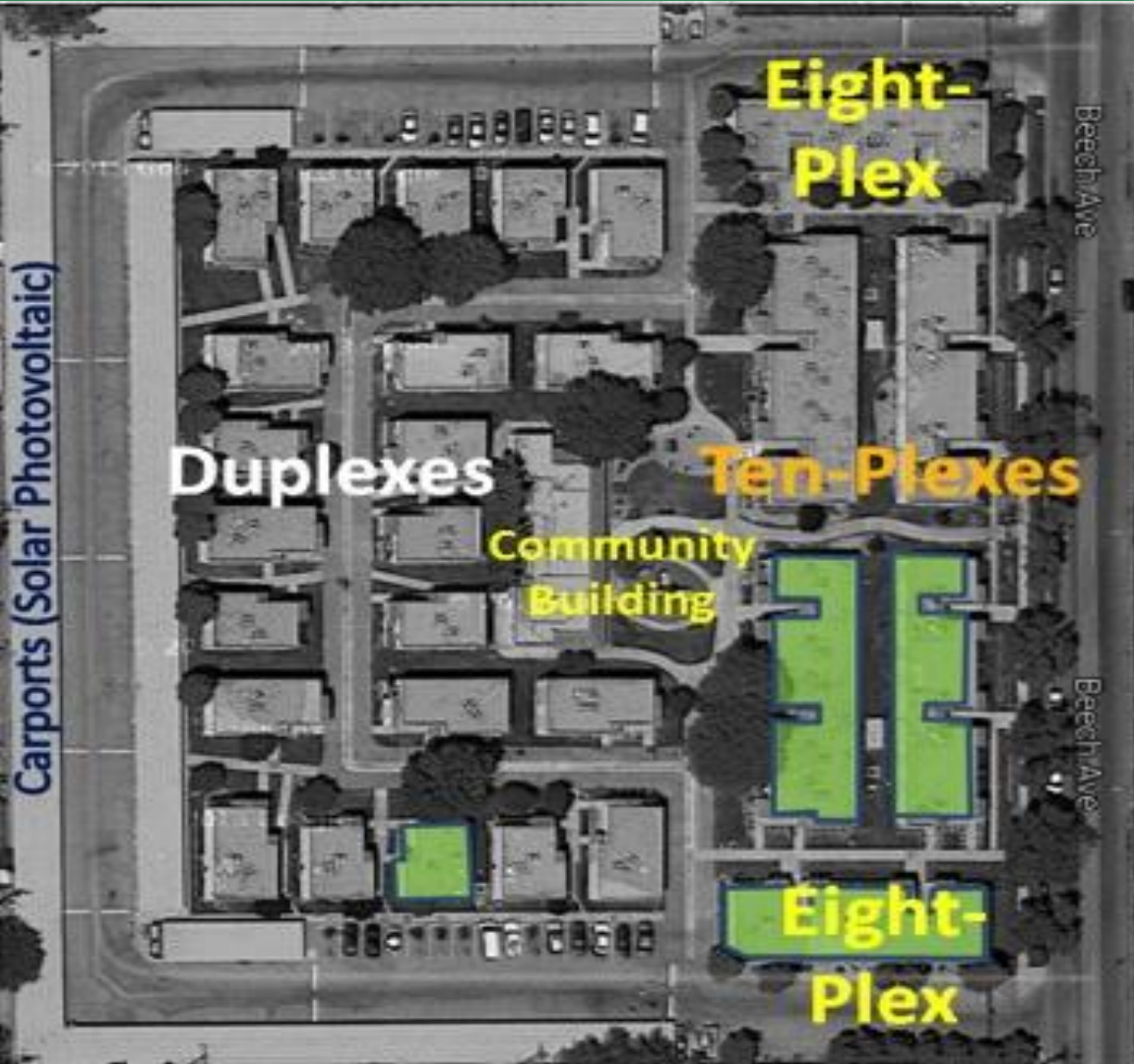
Southern California Edison

**Joe Shiau**

Southern California Gas Company







## Overview:

Lancaster, California

100 affordable units

28 2-story buildings

1 – 3 bedrooms

650sf -1,050 sf

1970's construction


Owner-paid gas

Tenant-paid electricity

Roof mounted HVAC

Boilers at 8/10 plex





**Establish Very Efficient Retrofit  
Packages**  
**Evaluate emerging technologies**  
**Pilot test**  
**Complete Retrofit**  
**Measure results**

- 
- Duct sealing
  - Ceiling and duct insulation
  - Insulated roofing
  - Solar water heating
  - Pipe insulation
  - High efficiency boilers
  - Solar PV for tenants
  - Interior/exterior LED Lighting
  - Weatherization
  - Smart thermostats
  - Low flow fixtures

Gas  
usage  
reduced

50%

Per unit: 234 therms/year  
\$212/year

Electricity  
usage  
reduced

22%

Per unit: 902 kWh/year  
\$93/year



# Resident Education







Job training opportunities





Impacts to residents





Owner demand for programs



# Presentation Highlights: LINC Housing

- **Turnover:** Residents in rental housing that are inconvenienced by construction often do not stay long enough to see the full benefit of the upgrades. Program design should take this into account and provide immediate incentives to residents.
- **Shared Space:** Oftentimes, there is not funding for common area improvements, which often require attention during a retrofit. Providing funding for these improvements can help owners make the leap.
- **Requirements:** The majority of energy efficiency incentive programs have cumbersome requirements for the owner on top of requiring staff resources. Providing a streamlined process can help mitigate these disincentives for owners and managers.
- **Job Training:** An upgrade can provide a valuable opportunity for on-site job training for residents. Programs should look at possibilities for multi-benefits when designing multifamily retrofit programs.

# **Session Highlight, “Swiftly and Massively: Moving 115,000 Units of Multifamily Affordable Housing to Higher”**

VEIC

# Swiftly and Massively: Moving 115,000 Units of Multifamily Affordable Housing to Higher Efficiency

*Elizabeth Chant, Vermont Energy Investment Corporation*

*Rebecca Schaaf, Stewards of Affordable Housing for the Future*

*Toby Ast, Preservation of Affordable Housing*

# A Strategy to...

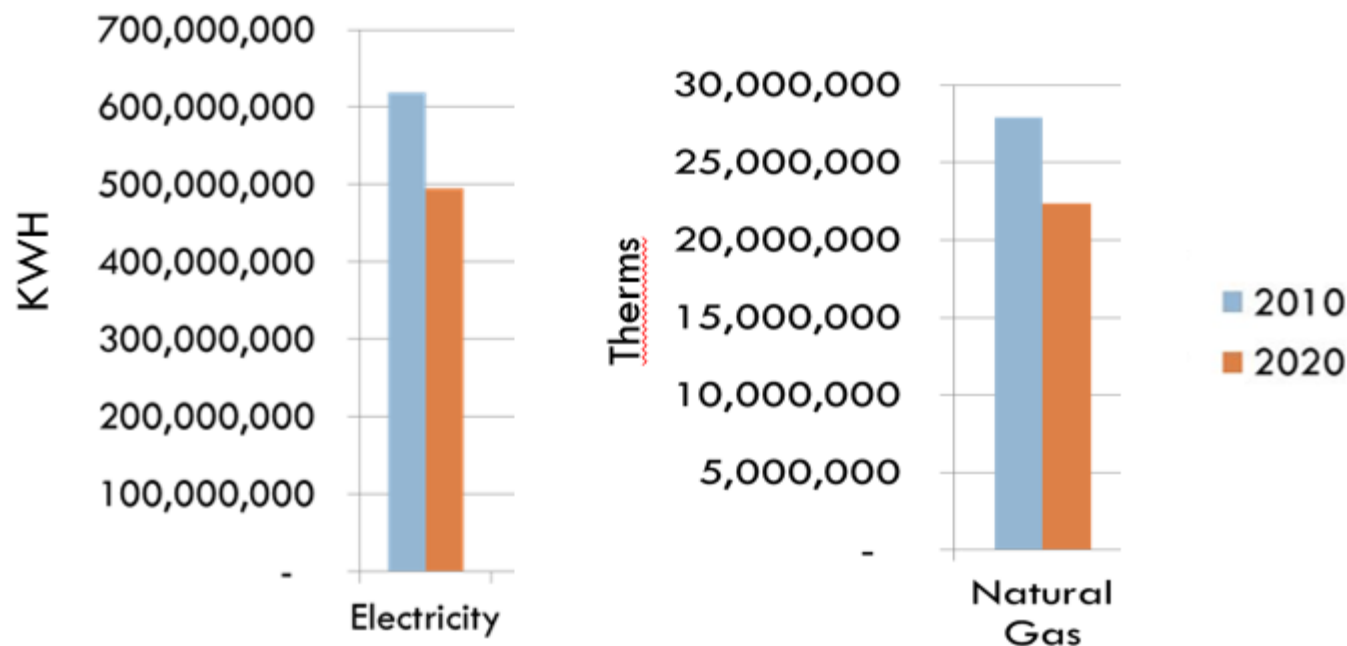
- Reduce operating costs
- Reduce energy and water rate risk exposure
- Promote change within affordable housing regulatory structures
- Influence utility incentive programs
- Change organizational cultures
- Attract resources



# ***The Big Reach***

***SAHF members will lead the industry in the long-term preservation of affordable housing by reducing energy and water use portfolio-wide by 20% by 2020, achieved through a mix of energy and water efficiency, energy and water conservation, and renewable energy.***

# Baseline - 20% = Big Savings



Savings: 124 Million KWH 5.6 Million Therms



# Work Plan Results

## Expected Savings

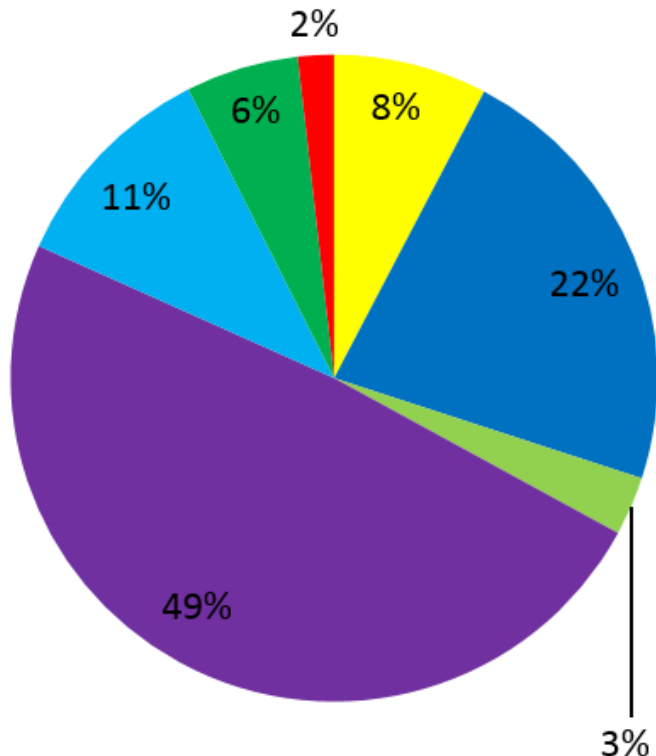


Energy Savings: 28%



Water Savings: 21%

## Sources of Savings

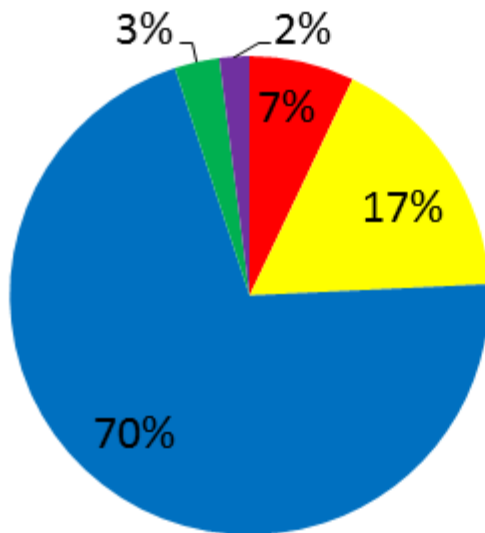


- Resident Engagement
- Improved O&M/Retrocommissioning
- Appliance Upgrades
- Efficiency at New Construction/Rehab
- Discretionary Retrofits
- Solar Domestic Hot Water
- Solar Photovoltaic

# Prevalence of Pathways

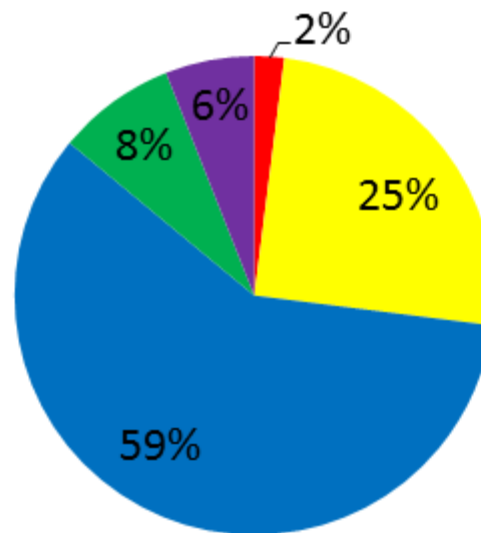
## Projected

Per 2013 Work Plans



## Actual

Per Big Reach Tracker (through June 2016)



- Solar Thermal
- Solar PV
- Retrocommissioning
- Efficiency at New Construction/Rehab
- Discretionary Retrofits



# Scale Helps Drive Policy



[Home](#) » [Partners](#) » Better Buildings » Multifamily Residential Partners



## Expanding to Include the Multifamily Residential Sector

In 2013, the Department of Energy (DOE) and the Department of Housing and Urban Development (HUD) have partnered to expand the Better Buildings Challenge to the multifamily residential sector. This expansion is part of President Obama's Climate Action Plan, which was announced in June and recognizes the role that increased efficiency can play in reducing



# *Thank you!*

Elizabeth Chant, Vermont Energy Investment Corporation

Rebecca Schaaf, Stewards of Affordable Housing for the Future

Toby Ast, Preservation of Affordable Housing

# Presentation Highlights: Vermont Energy Investment Corporation

- **Energy and water costs** are some of the **largest, controllable costs** that a multifamily building operator has control of in their cost structure.
- Each multifamily property has **different opportunities for savings** depending on age of the structure, geographic location, incentive availability etc. Understand your context to determine the pathway.
  - For example, in California, where renewable energy portfolio standards are high and market providers are plentiful, solar PV was a very cost effective strategy.
  - Oftentimes, in the SAHF program, energy efficiency projects went much deeper than initially expected, leading to higher efficiency.

# 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 [Contractor Financing Education](#).



<https://rpssc.energy.gov>

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

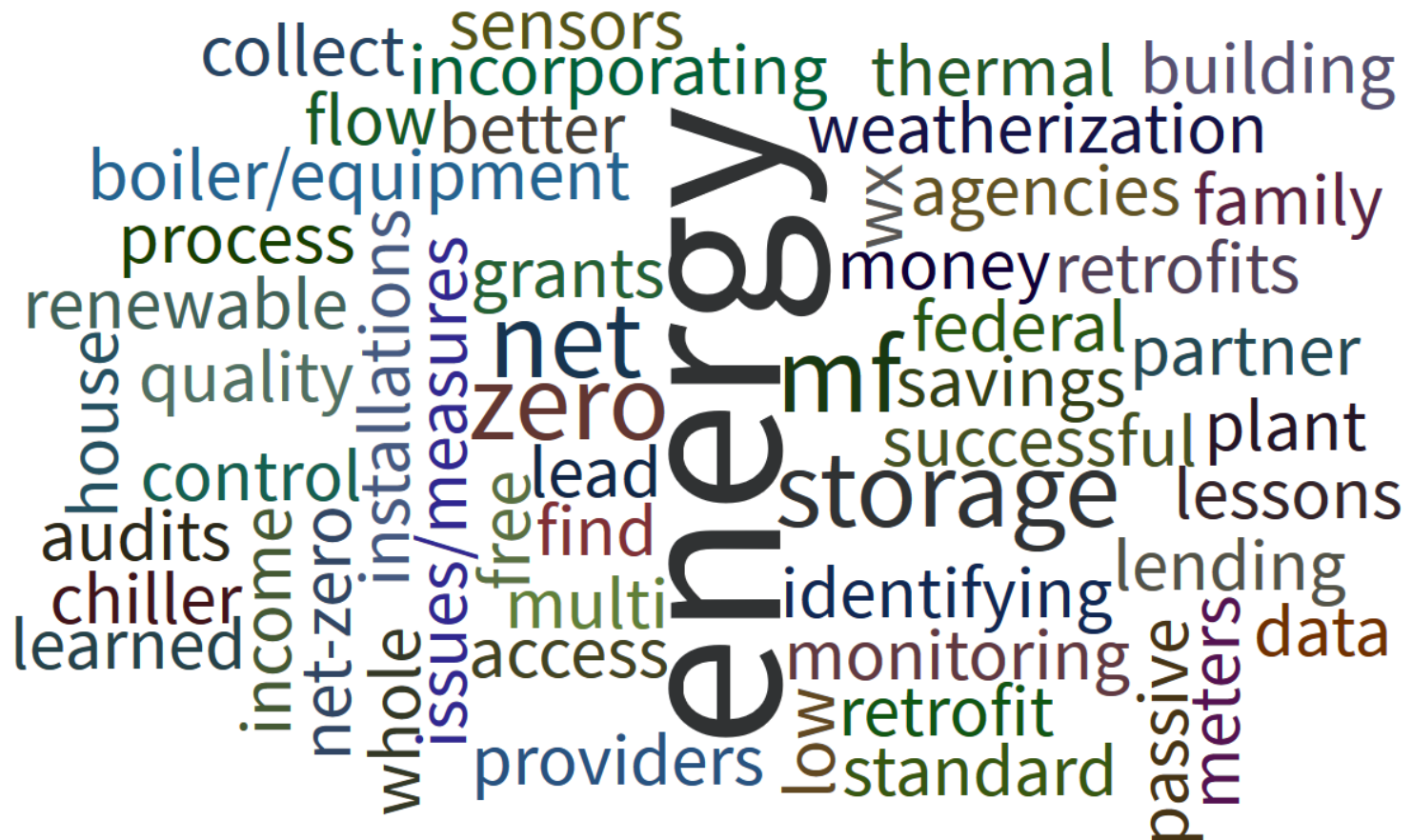
# 1st Ever Energy Efficiency Day Is Oct. 5<sup>th</sup>



- *Promote the benefits of energy efficiency for the first-ever, nationwide Energy Efficiency Day!*
- *Digital media toolkit includes: Logos, hashtags, pictures, and messages to boost the visibility and benefits of energy efficiency*
- *Use hashtag **#EEDay2016** on social media Oct. 5*

# Better Buildings Summit

*What residential energy efficiency topics would you like to see discussed at the May 2017 Better Buildings Summit?*



# 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:

- October 6: Secret Sauce: Recruiting and Retaining Qualified Contractors (101)
- October 13: Moving Beyond Split-Incentives: Engaging Rental Property Tenants and Owners in Energy Efficiency (301)
- October 20: Here Comes the Sun: Advances in Residential Solar (301)
- October 27: Connect 4: Energy Efficiency in Relation to Other Program and City Goals (101)

*Send call topic ideas to [peerexchange@rossstrategic.com](mailto:peerexchange@rossstrategic.com)*

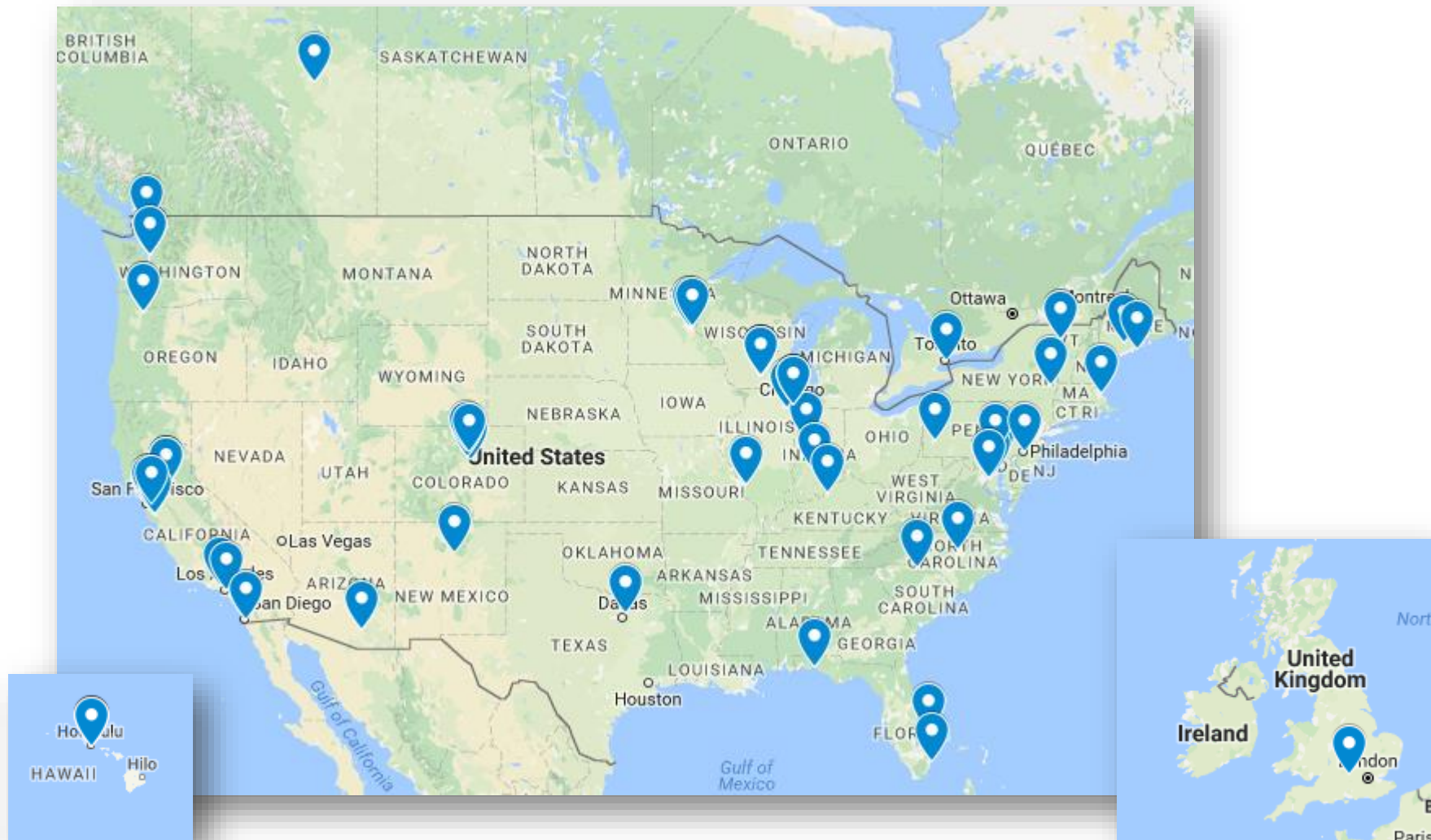
*See the Better Buildings Residential Network Program [website](#) to register*



# Addenda: Attendee Information and Poll Results



# Call Attendee Locations



# Call Attendees: Network Members (1 of 2)

- Advanced Energy
- American Council for an Energy-Efficient Economy (ACEEE)
- Bridging The Gap
- Build It Green
- Center for Energy and Environment (CEE)
- Center for Sustainable Energy
- City of Cambridge
- City of Plano
- City of Sunnyvale
- CLEAResult
- Earth Advantage Institute
- Efficiency Maine
- Elevate Energy
- Empower Efficiency, LLC
- Enhabit
- Essess, Inc.
- Honeywell International, Inc.
- Institute for Market Transformation (IMT)
- Michigan Saves
- Midwest Energy Efficiency Alliance (MEEA)
- Milepost Consulting, Inc.
- Mitsubishi Electric Cooling and Heating
- New York State Energy Research and Development Authority
- North Slope Borough - Public Works Weatherization Program
- Northeast Energy Efficiency Partnerships (NEEP)

# Call Attendees: Network Members (2 of 2)

- Research Into Action, Inc.
- Seventhwave
- Southface
- Stewards of Affordable Housing for the Future
- U.S. Department of Energy (DOE)
- Vermont Energy Investment Corporation (VEIC)
- Virginia Energy Sense
- Wisconsin Energy Conservation Corporation (WECC)

# Call Attendees: Non-Members (1 of 3)

- Affordable Community Energy Services Company
- Air Conditioning Contractors of America
- AjO
- Alaska Housing Finance Corporation
- Applied Performance Technologies
- ASC Energy
- Association for Energy Affordability
- BA Consult
- Ballarat Consulting
- Bam Superior Solutions
- Bki
- BPA
- Brand Cool
- BRANZ
- Cadmus Group Inc.
- California Alternative Energy and Advanced Transportation Financing Authority
- California Public Utilities Commission
- City and County of San Francisco
- City of Bloomington
- City of Philadelphia
- Codman Square Neighborhood Development Corp.
- Craft3
- Edge Energy
- Electric Power Research Institute
- Emerald Cities Seattle

# Call Attendees: Non-Members (2 of 3)

- Emerson Climate Tech
- Emerson Climate Technologies
- Enbridge Gas Distribution
- Energy Design Update
- Energy Gas & Industries Association
- Energy Resources Group
- Energy Solutions
- EnergyLink
- Environmental Design / Build
- Facility Strategies Group
- Flathead Electric Cooperative
- Franklin Energy
- FS Energy
- GoodCents
- Greenbanc LLC
- Hawaii Energy
- Healthy Building Research
- Home Office Training & Technology
- iCustom Inc.
- Island Institute
- Jantilli Design
- Johns Manville
- King County, WA
- LINC Housing / SEED Partners
- MidPen Housing
- Montana Department of Public Health & Human Services
- National Renewable Energy Laboratory
- Natural Resources Canada
- Natural Resources Defense Council

# Call Attendees: Non-Members (3 of 3)

- New Jersey Natural Gas
- Nexant
- Ohio Wind Working Group
- Okaloosa Gas District
- Ontario Ministry of Energy
- Opportunity Council / Community Energy Challenge
- OR Department of Energy
- Pacific Northwest National Laboratory
- PG&E Energy Training Center
- Point Energy
- PosiGen Solar
- Purdue university
- Renew Financial
- Rothschild Doyno Collaborative
- Seattle City Light
- Smart Green Realty
- Solar & Energy Loan Fund
- Southern Energy Management
- Southwest Energy Efficiency Project
- State of New Mexico
- Sweet Sustainable Solutions
- SyrQul
- Terracel Energy
- The Cadmus Group, Inc.
- Therma-Stor LLC
- University of Alabama
- University of Coimbra
- USDA Forest Products Laboratory
- USG Corp.
- Valent Air
- Ventacity Systems, Inc
- VOCA Off Grid

# Opening Poll

- Which of the following best describes your organization's familiarity with the ACEEE Summer Sessions?
  - Limited experience/familiarity – **38%**
  - Very experienced/familiar – **23%**
  - No experience/familiarity – **21%**
  - Some experience/familiarity – **18%**
  - Not applicable – **0%**

# Closing Poll

- After today's call, what will you do?
  - Seek out additional information on one or more of the ideas – **74%**
  - Consider implementing one or more of the ideas discussed – **13%**
  - Make no changes to your current approach – **13%**
  - Other (please explain) – **0%**