

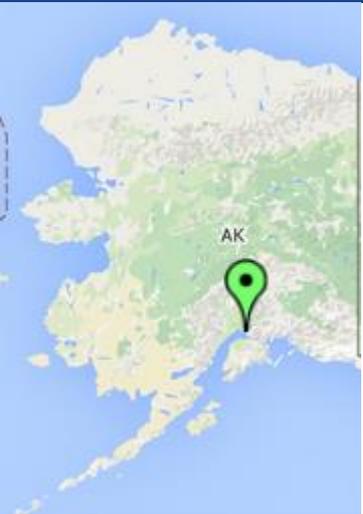


**Better Buildings Residential Network Peer
Exchange Call Series: *Energy Efficiency on
Display: Using Demonstration Projects to
Showcase Home Performance
Opportunities (201)***

February 25, 2016

Call Slides and Discussion Summary

Call Attendee Locations



Call Attendees: Network Members

- Alaska Housing Finance Corporation
- Building Media Inc.
- City of Knoxville, TN
- City of Takoma Park, MD
- Civic Works - Baltimore Energy Challenge
- CLEAResult
- Energy and Environmental Building Alliance
- Energy Efficiency Specialists, LLC
- greenspaces
- Nexus Energy Center
- Southeast Energy Efficiency Alliance

Call Attendees: Non-Members

- Appalachian Voices
- Cascade Natural Gas
- City of Bloomington, IN
- City of Greensboro, NC
- City of Orlando, FL
- CSRA
- Dominion Due Diligence Group
- EDGE, LLC
- Energon Plus
- Energy Design Update
- Energy Tech
- Energy Upgrade California
- EPRI
- Hawaii State Energy Office
- Holy Cross Energy
- Housing Rehab, City of Akron, OH
- Johnson A/C
- Rheem
- SonLight Energy Solutions
- Sonoma County Energy Independence Program
- Therma-Stor LLC
- TVA
- U.S. Green Building Council - Illinois Chapter
- Universidad Autonoma de Occidente, Colombia
- V3
- Whole House Energy Solutions, LLC

Agenda

- Agenda Review and Ground Rules
- Opening Poll
- Brief Residential Network Overview
- Featured Speakers
 - Ruchi Singhal, Executive Director, Nexus Energy Center (*Network Member*)
 - Erin Gill, Director, Office of Sustainability, City of Knoxville, TN (*Network Member*)
- Discussion Questions
 - What types of demonstration projects have programs implemented?
 - What advantages can demonstration projects offer?
 - What challenges or barriers have programs encountered with implementation?
 - What strategies can programs employ to navigate challenges?
 - Are there examples of demonstration projects being brought to scale?
- Closing Poll and Upcoming Call Schedule

Opening Poll

- Which of the following best describes your organization's experience with demonstration projects?
 - Limited experience/familiarity – **36%**
 - Some experience/familiarity – **29%**
 - Very experienced/familiar – **18%**
 - No experience/familiarity – **14%**
 - Not applicable – **4%**

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: <http://energy.gov/eere/better-buildings-residential-network/join>

Program Experience: Nexus Energy Center
Ruchi Singhal, Executive Director



NEXUS
ENERGY CENTER

Building Smart Energy Communities

Tiny Green Home

The original camper (before construction begins)



Original camper stripped down



Trailer



Frame



Siding being constructed



Spray foam insulation



Sink and cabinetry



Windows



Flooring



Propane heat installed



Painting exterior



Basic construction complete



Painting the mural



Solar panels



Tiny Green Home at U.S. Space & Rocket Center



Tiny Home Energy Efficient features

- Spray foam insulation
 - Walls and ceiling (open cell)
 - Floor (closed cell)
- Tankless gas hot water heater
- Mini-split HVAC system
- Energy STAR windows
- 500 W Photovoltaic panels with battery back up
- Propane cooktop & supplemental heat
- Rain barrel water collection

Presentation Highlights: Nexus Energy Center

- **Live teaching tool:**
 - Tiny homes are popular right now, so this demo project grabs attention. The home-on-wheels visits a variety of local events.
 - Visitors receive an Alabama Wise brochure to connect them with homeowners who have done upgrades, and with contractors.
 - This demo project teaches people about energy efficiency in an interactive way.
- **Funding:** Crowdfunding, local companies' donated materials, and direct support from Nexus funded the 175 square foot tiny home, which cost \$25-30K.
- **Designed** by Tumbleweed Tiny Homes, modified by Nexus.

Best Practices: City of Knoxville, Tennessee
Erin Gill, Director, Office of Sustainability

Knoxville Extreme Energy Makeover: A local model for low-income energy efficiency programming

Erin Gill, City of Knoxville

U.S. DOE Better Buildings Residential Network Peer Exchange Call

February 25, 2016



Knoxville's Smarter Cities Partnership

- Coalition of **20+ local partners** seeking to improve home **comfort, quality, and affordability** through **energy efficiency**, particularly for **lower income** households
- Catalyzed by 2013 IBM Smarter Cities Challenge technical assistance grant
- Key strategies:
 - Align partners around coordinated solutions
 - Improve energy education opportunities
 - Attract additional financing for retrofits
 - Engage the rental market
 - Utilize data to inform decision making
- Knoxville Extreme Energy Makeover (KEEM) is one program supporting the Smarter Cities Partnership



The KEEM Team

- **Knoxville-Knox County Community Action Committee (CAC):** Local community action agency; primary program administrator/implementer
- **City of Knoxville:** Assists in program oversight and coordinates with broader efforts to promote energy efficiency in Knoxville
- **Knoxville Utilities Board:** Local utility; provides in-kind program support and installs new smart meters at each KEEM home
- **Alliance to Save Energy:** National organization; leads KEEM marketing, outreach, and education efforts
- **Tennessee Valley Authority:** Program funder; provides ongoing administrative support and aligns KEEM with regional energy efficiency efforts



KEEM Activities

- **Energy efficiency retrofits (single family)**
 - Whole-home energy efficiency upgrades at no cost to participants
 - Work is customized for each home to reduce electricity use $\geq 25\%$
 - Retrofitting ~1,270 homes August 2015 – September 2017
- **Participant education**
 - All participants attend “Savings in the House” education workshop providing no- and low-cost energy tips
 - Designed to engage, educate, and empower
- **Community-wide engagement**
 - “Savings in the House” workshops open to all residents
 - Volunteer “Neighborhood Ambassadors” offer peer-to-peer outreach and testimonials
 - Partnerships with non-profits for grassroots, door-to-door outreach



KEEM Priorities

Technical

- **Cost Effective:** Total program implementation costs \leq \$10/ft²
- **Whole Home Approach:** Each home receives individualized scope of work based on unique needs
- **Deep Savings:** Each retrofit designed to reduce electricity use \geq 25%

Community

- **Local:** Administered by trusted, local organizations with history of partnership
 - Aggressive small, minority-, women-, and veteran-owned business goals
- **Scalable:** KEEM framework can be successful at varying funding and geographical scales
- **Sustainable:** Expands partner capacity to implement utility-grade efficiency programming and attract new funding sources
 - New local utility program will provide on-going funding for weatherization
- **Catalyst for Change:** Emphasis on education and engagement helps motivate widespread interest in energy efficiency and inspire new habits

On-Going Challenges

- **Contractor Recruitment:** KEEM's scale requires a wide selection of local retrofit contractors. Government procurement rules ensure quality, but sometimes deter participation.
 - Start recruiting early, and be ready to help contractors through the process.
- **Maintaining Community (and Media) Enthusiasm:** To be successful long-term, KEEM should demonstrate benefits for the entire community—beyond just energy savings.
 - Take the time to celebrate multiple program benefits (local job creation, environmental protection, health, etc.).
- **Managing Bottlenecks:** Some slow-downs are inevitable—strive to anticipate them. Engage all partners in finding solutions.
 - Open team communication and data analysis help identify bottlenecks before they happen.

Best Practices

- **Prioritize Your Team:** Find partners who are:
 - Committed to program sustainability, helping people, and doing the right things the right way
 - Experienced: Partners should have practiced and proven success working with residential retrofits
 - Trusted by local leaders and residents
 - Collaborators: Program teams must work well together and be open to strategic engagement with other community partners
- **Integrate & Align:** Don't start from scratch—build on partner strengths and integrate activities with other programs wherever possible
- **Value the Client:** Treat clients (and their homes) with respect and dignity—program sustainability relies on satisfied customers

Thank You!

Erin Gill

Director, Office of Sustainability

City of Knoxville, TN

Learn more: www.KEEMteam.com
www.cachousing.org
www.knoxvilletn.gov/sustainability



Presentation Highlights: City of Knoxville, TN

- **The Need:** 10,000 households in Knoxville request assistance on their utility bills each year; aging housing stock.
- **Whole-community engagement** helps ensure that neighbors are empowered as well as educated:
 - Partnering with local nonprofits to engage people directly
 - Hosting open workshops (attendance is a participation requirement)
 - Marketing materials are targeted to low-income customers
- **Sustainability is key.** KEEM partnered with local businesses as much as possible to help ensure long-term success after the initial two-year funding.
- **Permanence of upgrades** is a program emphasis—benefits will accrue for years to come.

Discussion Highlights: City of Knoxville

- **Average cost of upgrades** is \$8-10K per home, with a goal to achieve at least 25% savings.
- **Savings are verified** through pre- and post-audits.
- **Contractors are penalized** if they fail to meet their blower door test target.
- **Contractor recruitment** is done through the Tennessee Valley Authority's network. As work has increased, contractors are in need of skilled technicians, so there are plans to explore pipeline training programs for at-risk young adults.

Related Resources in the Residential Program Solution Center

Explore these resources related to showcasing home performance through demonstration projects:

- Learn how to include demonstration projects in your marketing efforts in [Marketing & Outreach – Develop Implementation Plans](#) handbook.
- Tip: [Host in-home events to make upgrade benefits visible by showcasing projects.](#)
- [Demonstration Homes](#) Quick Link provides several resources—from video interviews to case studies.

While you're there, see the latest Proven Practices post on [Energy Advisors](#).

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



Residential Program Solution Center Navigational Example

The image shows a screenshot of a website's navigation menu on the left and a video player in the center. The navigation menu includes the following items: Solution Center Home, About, Handbook Index, Quick Links (circled in blue), Proven Practices, Energy Data Facts, Glossary, BROWSE BY: Program Components, Program Design Phases, and Content Types. The video player features a YouTube logo at the top, a search bar, and a video of Elizabeth Galante. The video title is "Elizabeth Galante" and the description is "NOLA WISE: New Orleans, Louisiana, Worthwhile Investments". The video player controls show a play button, a progress bar at 0:08 / 1:03, and icons for closed captions, settings, and full screen. On the right side of the video player, there is a list of resources, including: resources, including; ive purposes; quality management; ata collection; s, onsite verification; ts that review all; as moisture control; and neighborhood. The "Quick Links" menu item and the "neighborhood" resource are circled in blue.

To learn about the NOLA WISE program's home energy showcases, go to:
<https://www.youtube.com/watch?v=QkEnvpidOFw&feature=youtu.be>

Discussion Questions

- What types of demonstration projects have programs implemented?
- What advantages can demonstration projects offer?
- What challenges or barriers have programs encountered with implementation?
- What strategies can programs employ to navigate challenges?
- Are there examples of demonstration projects being brought to scale?

Discussion Highlights: Benefits and Challenges of Demonstration Projects

- **A-ha moments** can result from demo projects, like the Nexus tiny house which allows people to see and touch efficiency features.
- **Long-term benefits** of demo projects can include proving that energy efficiency upgrades are cost effective and produce real energy savings, which makes a strong case to utilities and future financial backers.
- **Challenges** of demo projects can include finding people with project-specific skills (e.g. hooking up the tiny home) and targeting messaging to keep people focused on energy efficiency.
- **Identifying funding can be challenging.** Projects are likely to require grant support, sponsorship, or a fundraising effort like crowdfunding. When available, funding may be limited to a specific timeframe.

Closing Poll

- After today's call, what will you do?
 - Seek out additional information on one or more of the ideas – **57%**
 - Make no changes to your current approach – **21%**
 - Consider implementing one or more of the ideas discussed – **14%**
 - Other (please explain) – **7%**

Peer Exchange Call Series

We hold one Peer Exchange call 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:

- **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!