Better Buildings Residential Network Peer Exchange Call Series: *It's Getting Hot in Here! Best Practices for Hot and Humid Climates (101)*

July 7, 2016

Call Slides and Discussion Summary

Agenda

- Agenda Review and Ground Rules
- Opening Polls
- Brief Residential Network Overview
- Featured Speakers
  - **Abby Fox**, Policy Manager, Southeast Energy Efficiency Alliance *(Network Member)*
  - **Terry Moore**, Energy Efficiency Services Manager, Austin Energy *(Network Member)*
- Discussion
  - What are other examples of best practices for working in hot and humid climates?
  - What are some of the challenges in offering energy efficiency solutions tailored to these climate zones?
  - What strategies can help mitigate seasonal challenges and strengthen the connection between energy solutions and regional needs?
  - How has your program leveraged (or considered leveraging) the weather to market energy assessments and upgrades?
  - What other benefits exist for integrating regional opportunities with energy-efficiency?
- 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, *or go to* energy.gov/eere/bbrn *and click Join"*

Program Experience: Southeast Energy Efficiency Alliance

U.S. DEPARTMENT OF ENERGY

SEEA

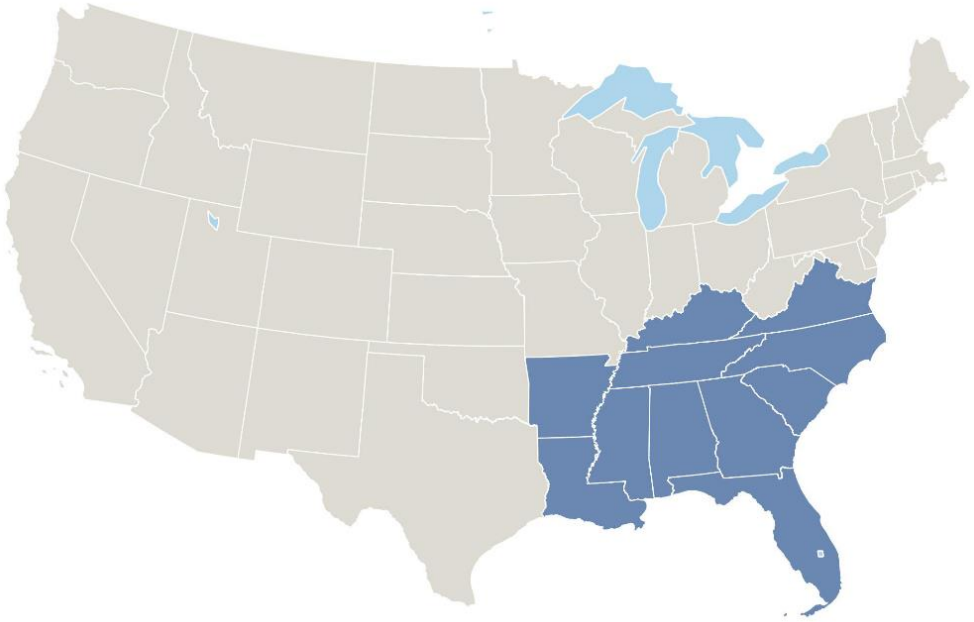
SOUTHEAST ENERGY EFFICIENCY ALLIANCE

Energy Efficiency Programs in the Southeast

Abby Fox, Policy Manager
July 7, 2016

SEEA Serves the Southeast

The **Southeast Energy Efficiency Alliance (SEEA)** promotes energy efficiency as a catalyst for economic growth, workforce development and energy security. We do this through collaborative public policy, thought leadership, outreach programs, and technical advisory activities.



Regional Energy Efficiency Organization

Eleven-state footprint

Non-profit, non-partisan

SEEA
SOUTHEAST ENERGY EFFICIENCY ALLIANCE

Disclaimer

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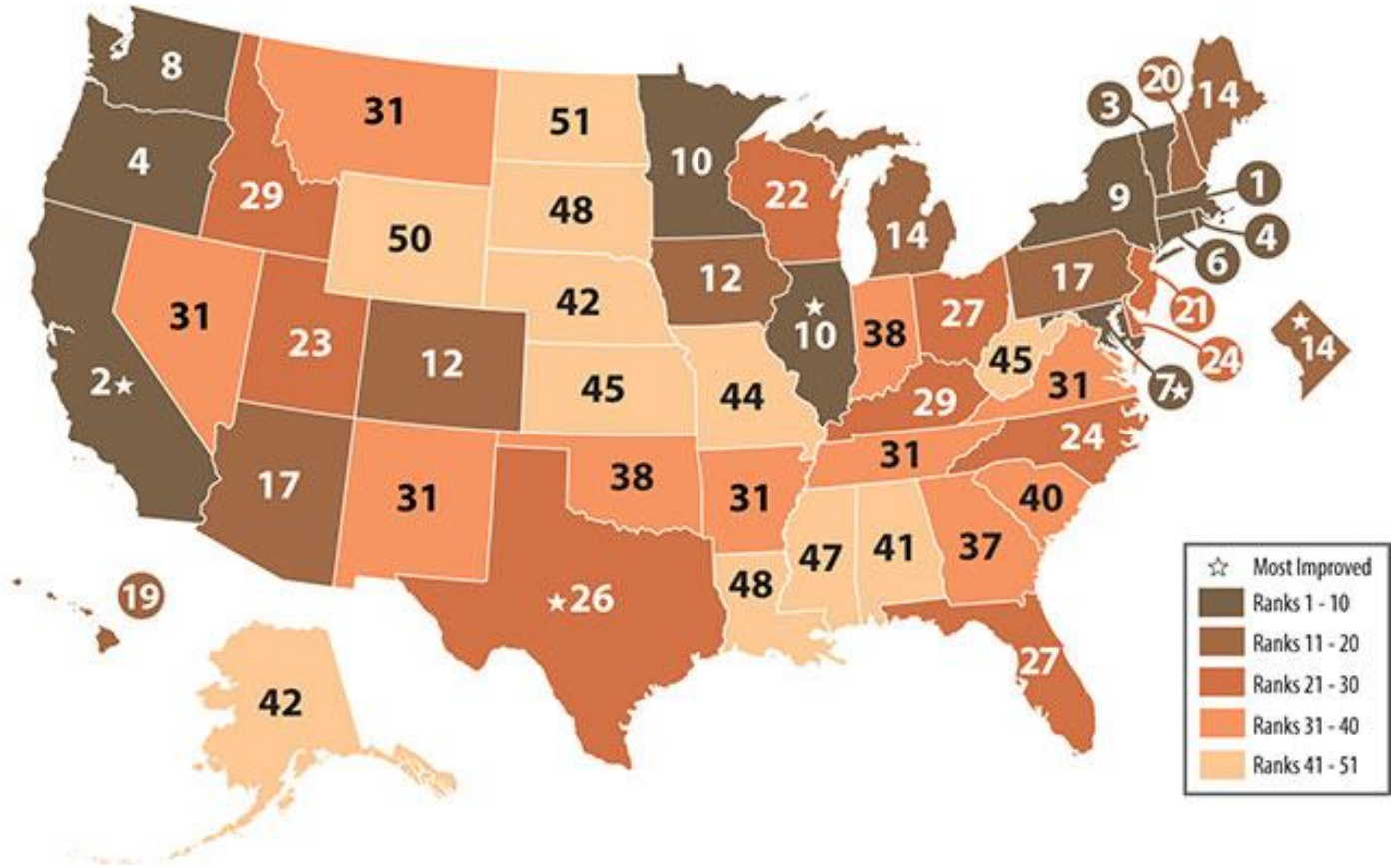
ACEEE Scorecard Rankings



Source: ACEEE (2015).

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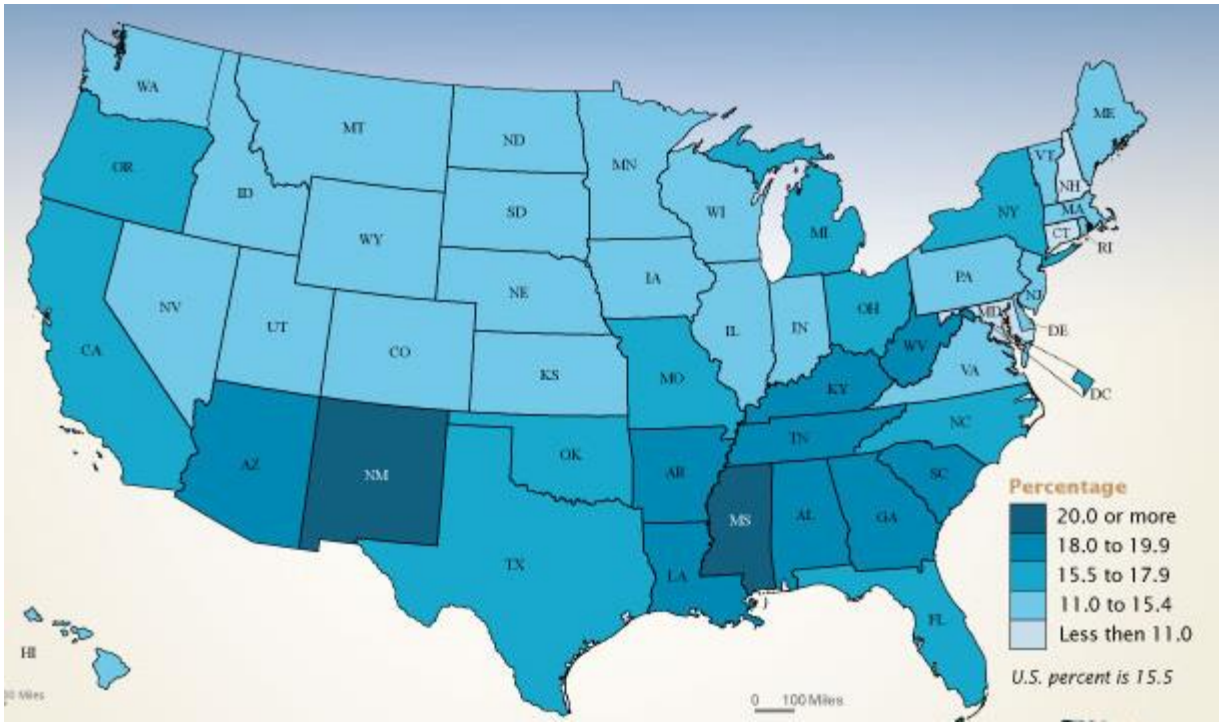
A Different Perspective: Percent in Poverty



Source: U.S. Census Bureau (2014).

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We’re Not All New at This (But Some of Us Are)

Quick Start Programs

- Customer education and outreach
- Energy audits and direct install
- Heating, ventilation, and air conditioning (HVAC) inspection, tune ups and retrofits
- Lighting and appliance rebates
- Weatherization

Programmatic Focus Areas

- Prescriptive rebates
- HVAC (peak concerns)
- Low-income programming
- Others:
  - Behavioral
  - Manufactured housing

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Southeastern Challenges and Opportunities

- Resiliency is critical (Florida and Gulf Coast).
- Serving rural communities is challenging.
- Financing is the next frontier.

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www.SEEALLIANCE.org

SEEA: Challenges and Opportunities

- **Economy:** The most important differentiator in the southeast is high poverty rates, which makes upfront cost a difficult barrier and the energy efficiency proposition hard to sell.
  - SEEA has produced a report which provides a snapshot of the current state of the Southeast and identifies trends and opportunities. Programs are addressing upfront costs by providing utility-administered low-income solutions.
- **Building Stock:** Many of the communities have aged and weathered building stock, which provides a big opportunity for energy savings with upgrades.
- **Weather:** Low electricity rates and extreme weather lead to high usage. SEEA and program partners plan marketing around the seasons and communicate how energy efficiency is solution that can help in those hot summer months.

SEEA: Best Practices

- **Rural Communities:** No one has figured out how best to market/service rural areas; however, in the Southeast, electrical co-ops that serve rural communities are identifying innovative ways to move upgrades, such as financing through USDA and on-bill repayment.
- **Entering the Market:** States in the Southeast have differing lengths of program history (e.g. Florida has had programs since the 1980s); states with newer programs do not have the same diversity and depth of energy efficiency program offerings.
  - Newer programs have found success in running "quick start" initiatives that focus on market development and deployment.
- **Resiliency:** Energy Efficiency makes sense not only from an energy savings standpoint, but also from a grid and disaster preparedness perspective.
- **Scale**: SEEA encourages cross-pollination and leverages best practices across states. It is one of six regional organizations.

Program Experience: Austin Energy

U.S. DEPARTMENT OF ENERGY

Best Practices for Hot & Humid Climates

Home Performance with Energy Star Program

July 7, 2016

Summary

- Program History
- Current Program
- 2017 and Beyond

Program History

- 35+ years of program history
- “Whole House” approach
- Evolution into HPwES
- Platform for Better Buildings Grant (ARRA)
- Program Participation (30,000+ homes)
- Traditional Energy Star Model (HVAC System, Envelope, Seal Duct)

Current Program

- High Efficiency HVAC System, seal envelope and air delivery system optimization
- Incentives for improving air delivery system and meeting static pressure targets
- Incentives for Inverter Driven HVAC equipment
- Wi-Fi Thermostats that integrate with AE Demand Response Program
- Better Buildings Loan Loss Reserve funds for low interest loans
- Transition to performance based incentives

Home Performance with Energy Star

2017 and Beyond

- Current incentives/loans on High Efficiency HVAC, envelope, and improved system performance (increased BTU output)
- Move program from component based incentives to performance based
- Incentives based on improving delivered system BTUs (proper air flow and supply/return temperature delta)

Program Deliverables

- Energy efficient HVAC equipment (conventional and inverter driven)
- Envelope improvements (insulation, solar screens, sealing)
- Air Delivery System Optimization (optimization and sealing)
- Demand Response Capability (Wi-Fi Thermostats)
- Improving HVAC system efficiency to 80% or better (performance incentives)
- Simplifying the incentive structure (decrease the number of moving parts)
- Promote and pay for performance (increased BTU delivery)
- Provide low interest loans (3.99% for credit scores of 600 or greater)

Home Performance with Energy Star

Terry Moore

Energy Efficiency Services Manager

Austin Energy

Austin Energy: Challenges and Opportunities (1 of 3)

- **Summer-Peaking Utility:** Austin has 115 clear days, which means lots of sun and no clouds during the hottest time of the year.
- **Air Delivery Systems:** Air delivery systems are oftentimes in unconditioned attic spaces that can reach 120-140 degrees in the summer. There is a lot of heat gain and air loss through duct systems.
- **Insulation:** Diminished or compressed insulation in attics lead to heat loss during the winter and heat gains in the summer.
- **Building Codes:** The city is tackling this issue by requiring higher and higher levels of insulation.

Austin Energy: Best Practices (2 of 3)

- **Holistic Approach:**
  - The house is a system: No single piece of equipment can achieve the level of energy savings possible with a holistic approach.
    - If you right size equipment, use the right amount or air flow, and have the right temperature, you are going to impact energy savings in a big way.
    - Implement measures that work together: air seal the floor of the attic, and deep bury the sealed duct system under the attic insulation.
- **New Technologies:**
  - Austin Energy has partnered with smart thermostat manufacturers to more accurately monitor energy use. Customers that participate in the program receive an $85 rebate for signing up to be part of the program.

Austin Energy: Best Practices (3 of 3)

- **Trends:** Austin Energy stays current with technological trends to make sure program offerings reflect market demands.
  - As the HVAC industry moves from conventional two speed systems to inverter driven equipment, Austin Energy is evaluating the best way to provide incentives and support homeowners.
  - Material improvements can provide opportunities for increased savings, but programs structure incentives to minimize potential problems.
    - Foam insulation can be an effective and efficient improvement, but preparation and installation are determine real energy savings.

Explore 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 Time-Limited Incentives.

https://rpsc.energy.gov

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

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:

- July 14: Innovation Station: The Latest Advances in Energy Efficiency Technology (301)
- July 21: The Return of Residential PACE – the Sequel (201)
- July 28: Trade Talk: Best Practices for Fostering and Using Contractor Networks (101)
- August 4: Energy Efficiency Olympiad: Best Practices from Around the World (201)

Send call topic ideas to peerexchange@rossstrategic.com

See the Better Buildings Residential Network Program website to register

Addenda: Attendee Information and Poll Results

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Call Attendee Locations

Call Attendees: Network Members

- ABC Energy Savings, LLC
- Advanced Energy
- Bridging The Gap
- Brooklyn Green Home Solutions
- Center for Sustainable Energy
- CLEAResult
- Cleveland Public Power
- Duke Carbon Offsets Initiative
- Duke University
- Energize New York
- Energy Efficiency Specialists, LLC
- FS Energy
- Institute for Market Transformation (IMT)
- Mitsubishi Electric Cooling and Heating
- Net Zero Analysis & Design Corporation
- PUSH Buffalo
- The Oberlin Project
- Wisconsin Energy Conservation Corporation (WECC)

Call Attendees: Non-Members (1 of 3)

- Alabama Department of Economic and Community Affairs
- AEG
- Akin & Associates
- Alexander Compagno Architecture + Design
- Anacillary Analytics
- AppleBlossom Energy
- Aquicore
- Architectural Nexus
- ASC Energy
- BKi
- Blue Ridge EMC
- Building Performance Contractors Association of New York State
- California Public Utilities Commission
- Carnegie Mellon University
- City of Deerfield Beach
- City of Houston
- City of Tucson Housing
- CMBA Architects
- Colquitt EMC
- CSRA
- Cushman & Wakefield
- Dr. Energy Saver
- EA Energía y Arquitectura
- Eastern Research Group, Inc.
- Emerson Climate Tech
- Energon Plus

Call Attendees: Non-Members (2 of 3)

- Energy Design Update
- EPA Region 7
- Florida Solar Energy Center
- Facility Management Consultores
- Gas Technology Institute
- Global Green
- Good Cents
- GyC de Energia, SLU
- Hawaii Energy
- HILCO Elec. Co-op. Inc.
- Home Office Training & Technology
- Honeywell International
- House So Green
- iAQ Systems
- iCAST
- ICF International
- ID3A, LLC
- Idaho Division of Building Safety
- IPI
- Jackson Energy Authority
- Jofforts Energy
- Leidos
- Louisiana State University
- Malis Photography
- McDonald's USA
- Michael Reeves Architects, PLLC
- Michigan Agency for Energy
- Naval Facilities Engineering Command Southeast

Call Attendees: Non-Members (3 of 3)

- National Council of Structural Engineers Associations
- New Ecology, Inc.
- Nexant
- Off The Grid Renovations
- OptiMiser Energy
- Panasonic Eco Solutions
- PG&E Energy Training Center
- Proctor Engineering Group
- Purdue University
- Santa Fe Community College
- Saudi Aramco
- Smith & Boucher Engineers
- Solar Habitats, LLC.
- Southern Energy Management
- SPEER
- State of Delaware
- Sustainable South Bronx
- Tactical Engineering Solutions, LLC
- Texas A&M University
- Texas Tech University Health Sciences Center
- Therma-Stor LLC
- Tennessee Valley Authority
- United Technologies
- University Kuala Lumpur
- U.S. Coast Guard

Poll #1: Opening Poll

- Which of the following best describes your organization's experience with the call topic?
  - Some experience/familiarity **– *41%***
  - Very experienced/familiar **– *31%***
  - Limited experience/familiarity **– *21%***
  - No experience/familiarity **– *4%***
  - Not applicable **– *3%***

Poll #2: Residential Energy Efficiency Challenges

- Which aspects of residential energy efficiency efforts do you think are most challenging?
  - Overcoming upfront cost of EE upgrades **– *40%***
  - Informing and encouraging homeowners to upgrade homes **– *33%***
  - Substantially increasing the total number of EE upgrades **– *15%***
  - Delivering high-quality, cost-effective EE services **– *10%***
  - Other (please chat in) **– *2%***

Poll #3: Marketing and Outreach Challenges

- Which aspects of residential energy efficiency marketing and outreach are most challenging?
  - Converting homeowner interest into upgrade projects **– *49%***
  - Crafting effective messages and marketing materials **– *22%***
  - Coordinating marketing with others (contractors, programs) **– *21%***
  - Understanding/analyzing homeowner audiences **– *5%***
  - Other (please chat in) **– *3%***

Poll #4: Closing Poll

- After today's call, what will you do?
  - Seek out additional information on one or more of the ideas **– *66%***
  - Make no changes to your current approach **– *19%***
  - Consider implementing one or more of the ideas discussed **– *9%***
  - Other (please explain) **– *6%***