



**Better Buildings Residential Network Peer  
Exchange Call Series: *Here Comes the Sun:  
Advances in Residential Solar (301)***

October 20, 2016

*Call Slides and Discussion Summary*

# Agenda

- Agenda Review and Ground Rules
- Opening Polls
- Brief Residential Network Overview
- Featured Speakers
  - **Jodi Slick**, CEO, Ecolibrium3 (*Network Member*)
  - **Andrew Grigsby**, Executive Director, Local Energy Alliance Program (LEAP) (*Network Member*)
- Discussion
  - Tell us about the intersection between solar and residential energy efficiency in your program. In what ways do they overlap or interact?
  - What would inspire you to consider adding solar in your own home?
  - What challenges do you see in marketing solar to homeowners? What about multifamily building owners?
  - What innovations do you think will most influence the future path of solar adoption in homes?
- 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*

# Best Practices: Ecolibrium3

# SOLAR AND EFFICIENCY



**JODI SLICK**  
ECOLIBRIUM3





# DULUTH, MN – 86,000 (POP.)



# ECOLIBRIUM3

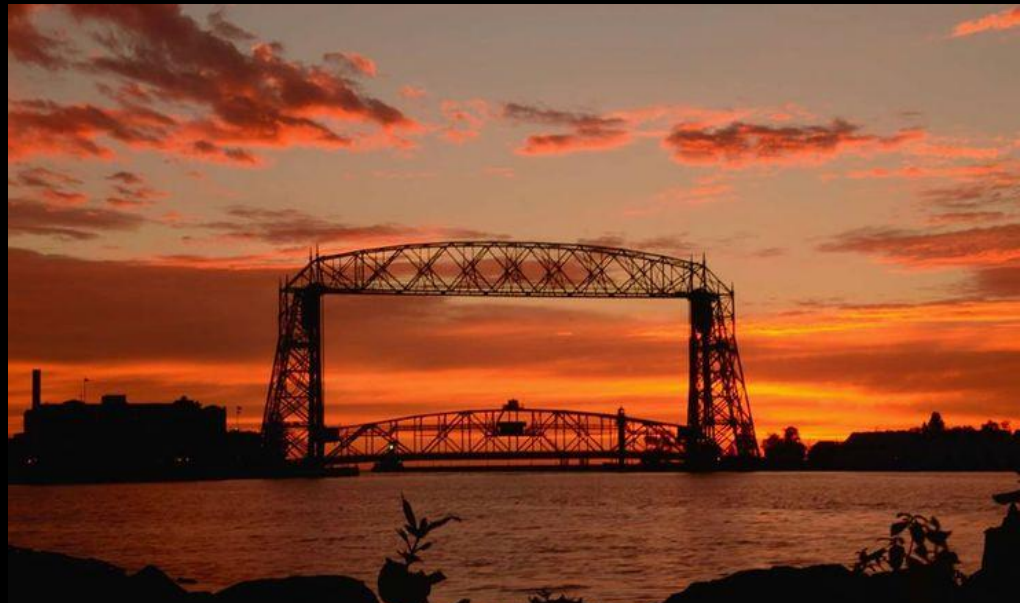
**Non-Profit Mission:** To inspire and lead change in our community toward an equitable and sustainable future.





# WORKING FROM BOTH DIRECTIONS

- Duluth Energy Efficiency Program
- Giving Comfort At Home
- Georgetown University Energy Prize
- Lincoln Park Shines
- Resilient Solar
- Solar Map
- Bundled Evaluations





# CRITICAL LOADS



Critical Load Backup	Description	Surge Load	Operating Load
Server, Wi-Fi, Phones	Plug load: mech. Room	135 W	15 W
Refrigerator	115 Volts, 7.7 Amps	250 W	250 W
Lighting	Bathroom	610 W	232 W
	Mechanical Room	128 W	128 W
	Classroom 1	46 W	46 W
	Classroom 2	46 W	46 W
Plug Loads	<b>Exhibit Hall:</b>	8 W/phone	8 W/phone
	<b>Hartley:</b> (1: 4 plug outlet)	32 W	32 W
	<b>Civil:</b> (3: 4 plug outlet)	96 W	96 W
	<b>Office:</b> 2 desktops	1200 W	10 W standby
	<b>Office Library:</b> 2 Laptops & 6 phones	248 W	248 W
	<b>Classroom 2:</b>		
	<b>Hartley:</b> (1: 2 plug outlet)- 100 W laptop	200 W	200 W
	<b>Civil:</b> (5: 2 plug outlet)- (2) 100 W laptops, (8) 8 W/ phones	248 W	248 W
Maximum Total Loads		H:2895 W / C:3007 W	H:1208 W / C:1319

# QUESTIONS?

- Jodi Slick, Ecolibrium3



# Presentation Highlight: Ecolibrium3

- **Solar is an opening to other energy upgrades:** Once you engage on solar, you can introduce topics such as critical loads, as logical next steps.
  - **Help homeowners play the energy game** by helping them understand how much energy they are using and the ways to minimize their energy requirements, to ensure that they are getting as much out of their solar installation as possible.
  - **Bundle solar with other upgrades to lessen the payback period.** Solar can have long payback periods (18-20) years, but bundles can bring the overall package payback down into the 7-9 year range.
  - **Solar installations are highly visible:** when solar is done at a business or community building, employees and community members are more likely to install in their own homes.

# Lessons Learned: Local Energy Alliance Program (LEAP)



# Efficiency Gains from Solarize Campaigns

## **LEAP's "Solarize" Campaigns**

- Think of the campaigns as community buying clubs, pop-up co-ops, or group-ons.
- LEAP issues an RFP to choose a solar installer for the campaign. Selection criteria include price, quality, experience, etc.
- LEAP and partners promote to bring in potential clients – through media outlets and free solar workshops.
- LEAP staff pre-qualify clients before relaying them to the installer who will provide a proposal. Client's contract for a solar array is with the installer – based on the campaign's set price/equipment package
- All contacts are encouraged to obtain an energy audit – many are \$0 - \$45 with a utility rebate.



# Efficiency Gains from Solarize Campaigns

## **LEAP's "Solarize" Campaigns**

- First: Charlottesville/Albemarle – Summer, 2014
  - 1100 "signups" on website
  - ~1200 Dominion Power "Home Energy Check-Ups"
    - Average 760 kwh saved (annual)
  - ~60 Charlottesville Gas Rebates
    - Average 300 kwh saved (10 therms)
  - ~30 clients proceeded with more comprehensive retrofits
  - 111 PV installations
- 11 more campaigns completed since then – none so ambitious or successful
  - Average campaign: 20 PV installs
- 1 under way currently
- 2 already planned for 2017



# Efficiency Gains from Solarize Campaigns

## **PV by the numbers: through May, 2016**

- Total “Signups”: ~3600
- Total # PV arrays installed: 219
- Average PV array rated power: 6.4kW
- Total rated output: 1408kW
  - ***Total: 1.75 GWh produced annually***

## **EE by the numbers: through May, 2016**

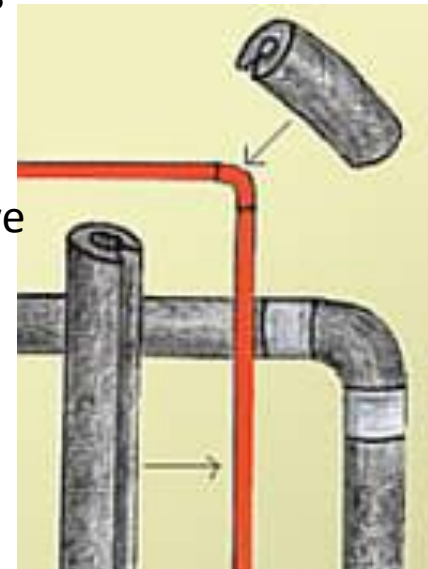
- Total DVP HECUs: ~1800
  - Subtotal annual kWh saved: 1,366,200kWh
  - Ave annual kWh Saved: 759kwh
- Total Charlottesville Gas Rebates: ~150
  - Ave kWh saved: 300
  - Subtotal annual kWh saved: 45,000
- 50+ retrofits x 11MMWh ave. savings = .55GWh/yr.
  - ***Total: 1.96+ GWh saved annually***



# Efficiency Gains from Solarize Campaigns

## **Caveats/Details:**

1. Some of the savings from HECUs start retiring after 1 year (e.g. lightbulbs expiring, smart strip use discontinued, etc.). So some of the total “nameplate” savings no longer obtains.
2. Other HECU installations have much longer impact (e.g., hot water pipe insulation.) Major retrofit improvements typically will be long-lived (attic insulation, duct sealing, new HVAC equipment).
3. PV equipment output should experience not more than 20% degradation over 25 years.
4. Other HECU contractors do not use trained building analysts or give detailed recommendations like LEAP does.





# Efficiency Gains from Solarize Campaigns

## **Lessons/Ideas:**

1. The widespread interest/excitement about solar power is something to tap into and use to promote clean energy generally.
2. A walk-through home energy audit with direct installs is a powerful tool. Let's improve them and expand their use.
3. Find ways to include all electric and gas utilities – so that contractors can serve all areas and customers aren't confused.
4. Consider compensating contractors for energy saved rather than equipment installed. Pay for the real goal (energy saved) – not a proxy (bulb installed). Drucker: "What's measured gets managed." Adams: "One Knob Proposal"
5. Provide contractors with real-time feedback so they can adapt to improve outcomes.
6. Include contractors in program design discussions.
7. Solar contractors have mixed feelings about these campaigns. They love to be selected as the installer, are very frustrated when they're left out.



# Efficiency Gains from Solarize Campaigns

Contact:

**Andrew Grigsby**, Executive Director  
Local Energy Alliance Program (LEAP)  
608 Ridge St., Charlottesville, VA 22902  
mobile/text: [\(804\) 252-1486](tel:8042521486)

[www.leap-va.org](http://www.leap-va.org)

# Presentation Highlight: Local Energy Alliance Program (LEAP)

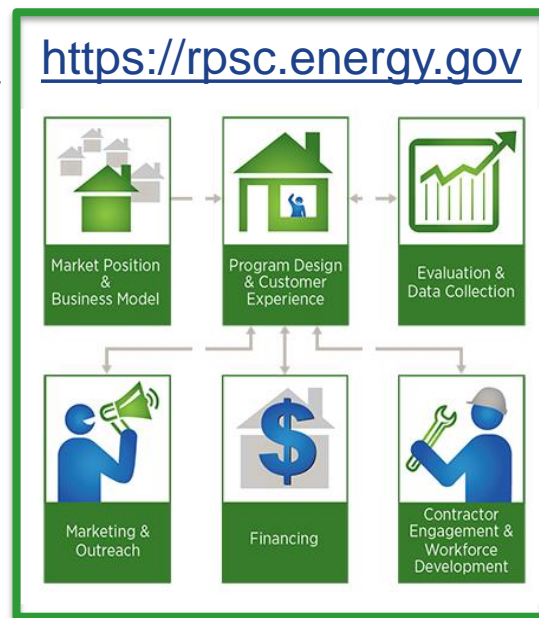
- Fast-changing technology can leave many homeowners unsure about solar: **programs should provide a clear picture on what real opportunities exist in solar** and what solar in the future may look like.
- Programs like LEAP can **be the unbiased third-party in solar, providing a clear path** for homeowners.
  - Many homeowners lack adequate information about the cost and savings opportunity for solar. **Education and an energy audit can help homeowners make informed decisions** about solar.
- Client attainment is expensive and can account for 8% of a contractors total cost.
  - **The Groupon Model:** LEAP pre-qualified homeowners by doing an initial assessment of the property and providing education. LEAP provided contractors with 30-40 leads and contractors were able to offer a better deal.

# Related Resources in the Residential Program Solution Center

## Explore resources related to advancements in residential energy efficiency & solar:

- Explore the [Marketing & Outreach – Make Design Decisions](#) handbook for understanding priority target audience and their needs and values.
- Find information on state, federal, local, & utility incentives & policies to support renewable energy and energy efficiency through the [DSIRE Database](#).
- View this [Energy Efficiency and Conservation Loan Program](#) presentation & [webinar](#) on solar PV opportunities.
- Read how [Solar and Energy Loan Fund](#) (SELF) offered micro-loans to underserved homeowners in Florida for sustainable home improvement projects including home energy upgrades & solar installations.

- 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

- Solar can feel like uncharted territory for many. **Providing a workshop with installers to ask questions** can help cut through the confusion.
- The enthusiasm for **solar installation spreads via friends and family and community organizations** (such places of worship) and can provide huge opportunities:
  - Ecolibrium3 provided free commercial solar audits to churches after a percentage of the congregation underwent energy audits in their homes. Additionally, the church hosted “air sealing parties” to build leadership and social cohesion around energy upgrades.
  - Homeowners know they should get audited, but if you can **create a limited opportunity or create a reason outside the self**, people are motivated to take that first step.

# Spread the Word!

**Do you have new staff in your organization that might benefit from Peer Exchange Calls?**

*Network Members, such as VEIC, inform their new employees of upcoming calls to spread the knowledge and grow the network!*

*New staff can sign up to receive upcoming call information. To do so, email [bbresidentialnetwork@ee.doe.gov](mailto:bbresidentialnetwork@ee.doe.gov), or visit [energy.gov/eere/bbrn](http://energy.gov/eere/bbrn) and click Join*

# 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:

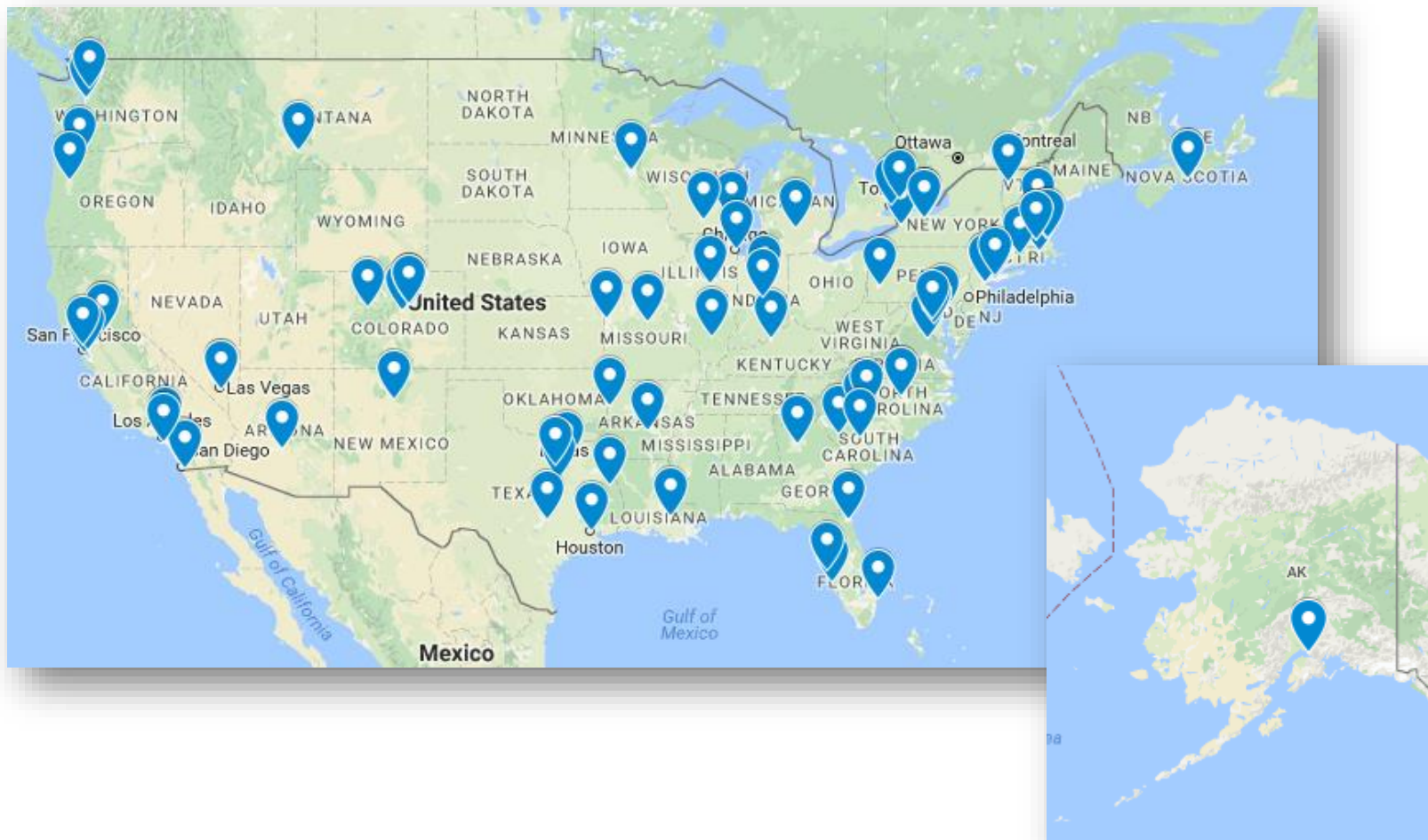
- October 27: Connect 4: Energy Efficiency in Relation to Other Program and City Goals (101)
- November 3: Boom Chika Boom: Demand Response and Behavior Change (301)
- November 10: Do You Hear Me Now? Communicating the Value of Non-Energy Benefits (101)
- November 17: Diversifying Funding Sources and Building New Revenue Streams (201)

*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

- Alaska Housing Finance Corporation
- AppleBlossom Energy Inc.
- BAM Superior Solutions
- Bridging The Gap
- California Energy Commission
- Cascadia Consulting Group
- Center for Sustainable Energy
- City of Chula Vista Conservation Section
- City of Columbia
- City of Plano
- City of Providence
- City of Somerville
- Civic Works
- CLEAResult
- Efficiency Nova Scotia
- Elevate Energy
- Energy Efficiency Specialists
- Horizon Residential Energy Services NH, LLC
- PUSH Buffalo
- Southeast Energy Efficiency Alliance (SEEA)
- TRC Energy Services
- U.S. Department of Energy (DOE)
- Wisconsin Energy Conservation Corporation (WECC)

# Call Attendees: Non-Members (1 of 2)

- ACTION-Housing, Inc.
- Allied Clean Energy Inc.
- ASC Energy
- Austin Energy - Energy Efficiency Services
- BA Consult
- Brand Cool
- Cambridge Energy Alliance
- Carolina Smart Homes
- City of Houston
- City of Milwaukee
- City of Mt. Vernon
- City Of Rochester
- County of Marin
- Craft3
- Enbridge Gas Distribution
- Energetics, Inc.
- Energy Outfitter
- Energy Wise Solutions
- Environmental Design / Build
- Facility Strategies Group
- FCI Management
- Fox Energy Specialists
- George Washington University
- Greeenergy Chicago, Inc.
- Green Alternatives, Inc
- Green Compass Sustainability
- Greenbanc
- HILCO Electric Cooperative Inc.

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

- iCAST
- Intervine
- King County, WA
- Local Initiatives Support Corporation
- LSU - LaHouse Resource Center
- Massachusetts Department of Public Utilities
- Mechanical, Industrial and Manufacturing Engineering
- NM State Energy Office
- Parker Interests Unlimited
- Rappahannock Electric Coop
- Rocky Mountain Institute
- Smith Enterprises
- +Snohomish PUD
- Solterre Design
- Southern Energy Management
- State Farm Insurance
- United Technologies
- Velux
- Whitby Hydro Energy Services

# Opening Poll #1

- Which of the following best describes your organization's experience with residential solar?
  - Some experience/familiarity – **33%**
  - Limited experience/familiarity – **33%**
  - Very experienced/familiar – **27%**
  - No experience/familiarity – **6%**
  - Not applicable – **0%**

# 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 – **25%**
  - Make no changes to your current approach – **19%**
  - Other (please explain) – **0%**