

Panel 1: Residential Buildings: Technologies, Design, Operations, and Industry Trends

Panel Leaders: Ryan Kerr & Vladimir Kochkin

MONDAY, AUGUST 22	SESSION 1 (8:30 am - 10:00 am)
	Cold Climate Decarbonization: Strategies, Costs, and Performance
	<i>Winter is Coming: is the Northeast Ready for Residential Electrification?</i> Christie Amero, Cadmus
	<i>The Economics of Cold Climate Electrification</i> Scott Robinson, Guidehouse
	TBD
	SESSION 2 (10:30 am - 12:00 pm)
Envelope Solutions: Windows and Phase Change Materials	
<i>Methods to Analyze the Energy Performance of Window Attachments</i> Rowan McCarthy, D+R International	
<i>Results from Laboratory and Field Studies of Thin Triple-Pane Windows</i> Patti Gunderson, Pacific Northwest National Laboratory	
<i>Energy Savings and Durability of Phase Change Materials in Residential Attics</i> Robert Hendron, Frontier Energy	

TUESDAY, AUGUST 23	SESSION 1 (8:30 am - 10:00 am)
	Demand Response: How Emerging Technologies Can Lead The Way
	<i>Variable Speed Heat Pumps can Provide Effective Demand Response with a Soft Touch</i> Andrea Mammoli, Electric Power Research Institute
	<i>Detailed Laboratory Evaluation of Electric Demand Load Shifting Potential of Heat Pump Water Heaters</i> Karen Fenaughty, FSEC Energy Research Center
	TBD
	SESSION 2 (10:30 am - 12:00 pm)
Heat Pump Water Heaters: Differing Approaches	
<i>Heat Pump Water Heaters in the Midwest: Cost, Comfort, and Climate Impacts</i> Kevin Gries, Slipstream	
<i>Split HPWHs as an Efficient Solution for Multifamily Buildings with In-unit Water Heaters</i> Bethany Sparr, National Renewable Energy Laboratory	
<i>In Hot Water! The Challenges and Barriers of Decarbonizing Water Heating in the Multifamily Buildings</i> Sammy Houssainy, National Renewable Energy Laboratory	

WEDNESDAY, AUGUST 24	SESSION 1 (8:30 am - 10:00 am)
	Using Big Data to Understand and Influence Energy Usage Behaviors
	<i>The Elusive Missing Link: Correlating Billing Analysis and Thermostat Data in the Northwest</i> Jon Koliner, Apex Analytics
	<i>Predicting Impact of Temperature Setpoint Adjustment Under Time-based Electricity Rate Plans</i> Mahesh Naidu, Lawrence Berkeley National Laboratory
	<i>End-Use Level Impacts of the COVID-19 Pandemic on Residential Energy Usage</i> Hans Lehndorff, Evergreen Economics
	SESSION 2 (10:30 am - 12:00 pm)
Decarbonization Takes a Village: Dual Fuel Solutions	
<i>Electric and Gas Decarbonization Options for Homes: The Best Option Could Vary by Home and Region</i> Steve Nadel, ACEEE	
<i>Why We Should Never Install Another Air Conditioner!</i> Ben Schoenbauer, Center for Energy and Environment	
TBD	

THURSDAY, AUGUST 25	SESSION 1 (8:30 am - 10:00 am)
	Electrification: Strategies and Tools for Scaling Up
	<i>The Unintended Consequences of Electrification and What to do About It</i> Rachel Murray, DNV
	TBD
	TBD
	SESSION 2 (10:30 am - 12:00 pm)
Innovative Technologies and Approaches: What's Next?	
<i>Radiant Ceilings As A Residential Retrofit: Examining the Myths and Realities</i> James Haile, Frontier Energy	
<i>Experimental Evaluation of a Multi-junction Compact Heat Pump for All-electric Residential Buildings</i> Subhrajit Chakraborty, Western Cooling Efficiency Center	
TBD	

Panel 1 continued	
FRIDAY, AUGUST 26	SESSION 1 (8:30 am - 10:00 am)
	Energy Retrofits for Decarbonization: ccASHPs, Air Sealing and Insulation
	<i>The Climate Impact of Retrofits: Embodied and Operational Emissions in Weatherization</i> Megan Nedzinski, Vermont Integrated Architecture
	<i>Aerosol Sealing of Existing Homes</i> Curtis Harrington, UC Davis Western Cooling Efficiency Center
	<i>Field Test Results from Cold Climate Air Source Heat Pump Installations in New York State: Performance, Savings and More</i> Gabrielle Stebbins, Energy Futures Group
	SESSION 2 (10:30 am - 12:00 pm)
	Home Energy System Controls: More Important than Ever
	<i>Timing is Everything: Optimizing Heat Pump Load Flexibility for Cost, Comfort, and Carbon Emissions</i> Caton Mande, UC Davis Western Cooling Efficiency Center
<i>Help! I Can't Figure out How to Set the Clock on my Microwave Oven and Now I Need to Program the Controls for my Heat Pumps, Batteries, Solar Panels, and Electric Vehicle Charging?</i> Dave Intner, Southern California Edison	
<i>Validation of HVAC Hardware-In-the-Loop Simulation for Advanced Control Strategies in Smart Homes</i> Sugirdhalakshmi Ramaraj, National Renewable Energy Laboratory	