

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
	<i>The Unintended Consequences of Electrification and What to do About It</i> Rachel Murray, DNV
	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> Katherine Cort, 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
	<i>Timing is Everything: Optimizing Heat Pump Load Flexibility for Cost, Comfort, and Carbon Emissions</i> Caton Mande, UC Davis Western Cooling Efficiency Center
	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	
<i>Accounting for the Multiple Dimensions of Inequality in Utility Programs</i> Karen Ehrhardt-Martinez, ICF	

THURSDAY, AUGUST 25	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</i> Gabrielle Stebbins, Energy Futures Group
	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> Simon Pallin, Frontier Energy	
<i>Experimental Evaluation of a Multi-function Compact Heat Pump for All-electric Residential Buildings</i> Subhrajit Chakraborty, Western Cooling Efficiency Center	
<i>Hydronic vs. Hydronic: Comparing Performance of Air-to-Water Heat Pumps Coupled with Radiant Ceilings and Fan Coils</i> James Haile, Frontier Energy	

Panel 1 continued

SESSION 1 (8:30 am - 10:00 am)

Home Energy System Controls: More Important than Ever

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
Dave Intner, Southern California Edison

Validation of HVAC Hardware-In-the-Loop Simulation for Advanced Control Strategies in Smart Homes

Sugirdhalakshmi Ramaraj, National Renewable Energy Laboratory

Evaluation of Condensation Risk Mitigation Methods for Residential Ceiling Cooling Systems

Stephen Chally, Frontier Energy

SESSION 2 (10:30 am - 12:00 pm)

OPEN SESSION

FRIDAY, AUGUST 26