

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

Panel Leaders: Carter Dedolph, CenterPoint Energy and Bo Shen, Oak Ridge National Laboratory

DATE	SESSION	TITLE	LEAD AUTHOR, ORGANIZATION
Mon 8/3	Session 1 8:30 am - 10:00 am Residential Energy Optimization in Practice	<i>Electrification in Practice: All-Electric Single Family Home Retrofits</i>	Maya Gantley, 2050 Partners
		<i>Navigating Multifamily Electrification and Readiness Strategies - Mitigating Upsizing</i>	Amy Dryden
		<i>Characterizing Electrical Demand and Load Diversity of Low-Power Water and Space Heating Appliances in US Homes</i>	Brennan Less, Lawrence Berkeley National Laboratory
	Session 2 10:30 am - 12:00 pm Thermal Storage and Grid Optimization	<i>The Benefits of Zoning with Ducted Hydronic Fan Coils and Air-to-Water Heat Pumps</i>	Ryan Allen, Frontier Energy
		<i>Unleashing Delivery Capacity: Approaching the Technically Achievable Limits for Water Delivery Capacity from a Standard Tank Size</i>	Kyle Gluesenkamp, Oak Ridge National Laboratory
		<i>Water as a Grid Resource: How Smart DHW Controllers can provide Savings and Increased Resilience</i>	David Milner, Guidehouse
Tues 8/4	Session 1 8:30 am - 10:00 am Cold Climate Heating Solutions	<i>Cold Climate Room Heat Pump Field Study</i>	Matthew Booth, WSU
		<i>Data-Backed Backup Heat Behavior: Cost, Comfort, and Consequences of ER Heat in Cold Climate ASHP Installs</i>	Ranal Tudawe, MNCEE
		<i>Experimental Evaluation of a High-Performance Cold-Climature Heat Pump Using Tandem Vapor-Injection Compressors</i>	Yifeng Hu, Oak Ridge National Laboratory
	Session 2 10:30 am - 12:00 pm HVAC Innovations and Fault Diagnosis	<i>Field Evaluation of Duct Configuration Impacts on Variable- and Fixed-Capacity Heat Pump Distribution Efficiency</i>	Michael MacFarland
		<i>Finding Fault: An Investigation of the Prevalence and Energy Impacts of Residential HVAC Installation Faults</i>	Eric Martin, Florida Solar Energy Center
		<i>Build Tight, Ventilate Right: Air Sealing Relationships to Indoor Air Quality for Healthy Resilient Homes That Use Less Energy</i>	Jennifer McWilliams, DNV
Wed 8/5	Session 1 8:30 am - 10:00 am Field Evaluation of Residential and Multifamily Energy Systems	<i>Advancing Multifamily Decarbonization Through Field Demonstrations of Emerging Heat Pump and Heat Recovery Technologies</i>	Sankhanil Goswami, New Ecology
		<i>Field Evaluation of Energy Savings and Indoor Air Quality Impact of Smart Ventilation in Multifamily Dwelling Units</i>	Tharanga Jayarathne, TRC
		<i>Field Demonstration of a Thermoelectric Air Source Heat Pump for Residential Space Heating</i>	Sreenidhi Krishnamoorthy, EPRI

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Wed 8/5	Session 2 10:30 am - 12:00 pm	<i>Proving Net Zero: Results from a Zero Energy Ready Home in Wisconsin</i>	Leah Canter, Focus on Energy
	Whole House Building Energy Management	<i>Compressing Costs: Modular Multiplex Multifunction R290 Air-to-Water Heat Pump Systems to Streamline Multifamily Electrification</i>	Jonathan Woolley
		<i>Hot Takes, Cold Facts: What the Perfect Dual Fuel Thermostat Should Really Do</i>	Samantha Hill, MNCEE shill@mncee.org
Thurs 8/6	Session 1 8:30 am - 10:00 am	<i>Heat Pump Showdown: A Direct Comparison of Multi-Function and Single Function Heat Pumps</i>	James Haile, Frontier Energy
	Heat Pump Comparative Studies	<i>Which Dual-Fuel Heat Pump Wins in the Cold? Comparative Performance of Sequential, Concurrent, and Tankless-Hydronic Configurations</i>	Zhenning Li, Oak Ridge National Laboratory
		<i>I'll Have What She's Having – US Adoption of European R290 Monobloc Air-to-Water Heat Pumps</i>	Aaron Tam, EPRI
	Session 2 10:30 am - 12:00 pm	<i>Investigating the Benefits of Demand Response using Variable Capacity Heat Pumps</i>	Ram Dharmarajan, GTI
	Optimizing Heat Pump Performance and Demand Response	<i>Dual Fuel as a Demand Response Resource? Exploring Potential Savings and DR Benefits of a Residential Dual Fuel HVAC System in the Pacific Northwest</i>	Meg Waltner, Energy350
		<i>Defrost Smarter: Compact TES for HVAC Peak Load Reduction</i>	Sven Mumme, U.S. Department of Energy
Fri 8/7	Session 1 8:30 am - 10:00 am	<i>Next Generation Refrigerants for Domestic Heat Pump Water Heaters</i>	Bo Shen, Oak Ridge National Laboratory
	Advancing Heat Pump Water Technologies	<i>Boiling It Down: Findings from Dual Fuel and All-Electric Air-to-Water Heat Pump Installations in Wisconsin</i>	Jonathan Koliner
		<i>Hotter is Not Always Better: Impacts of HPWH Settings on Load Shifting Performance</i>	Amelie Besson, AEA Clean Energy
	Session 2 10:30 am - 12:00 pm	<i>Thin-Triple Windows - Now a Cost-Effective Envelope Trade-Off for High-Performance Homes</i>	Katherine Cort, Pacific Northwest National Laboratory
	Innovation in Building Envelopes and Efficiency	<i>Closing the Retrofit Gap: Integrating Existing Windows with New, Thick Continuous Insulation</i>	Patti Gunderson, Pacific Northwest National Laboratory
		<i>PONDERHouse: A Ponder-Based Mass Timber Home That Helps Our National Forests and Provides Sustainable, Resilient Housing</i>	Elon Yates, Colorado School of Mines