

Panel 12: Smart and Grid-Interactive Buildings

PANEL LEADERS: Therese Peffer, CA Institute for Energy & Environment and Marco Pritoni, Lawrence Berkeley National Laboratory

DATE	SESSION	TITLE	LEAD AUTHOR, ORGANIZATION
Mon 8/5	Session 1 8:30 - 10:00 am Large Commercial Demand Flexibility	<i>The cost of HVAC demand response: Using experimental data to track down the causes of inefficiency in sub-hourly HVAC load shifting</i>	Austin Lin, University of Michigan
		<i>Optimal control strategies for multiple cooling towers for an existing building</i>	Jin-Hong Kim, Seoul National University
		<i>Analyzing The Impact Of Energy Efficient ASHRAE Guideline 36 Control Sequences On Demand Flexibility Potential Of Commercial Buildings: A Multi-Region Analysis</i>	Weiping Huang, Lawrence Berkeley National Laboratory
	Session 2 10:30 am - 12:00 pm Powering the Future: Small commercial demand flexibility, fuel switching RTUs, and MPC	<i>Frozen Freedom: Unleashing Grocery Store Demand Flexibility</i>	Sarah Azmi Wendler, U.S. Department of Energy
		<i>Drop-in Decarbonization with Smart Fuel-Switching RTUs</i>	Jason LaFleur, GTI Energy
		<i>Practical challenges and impacts of low-cost model predictive control (MPC) for grid-interactive small and medium commercial buildings.</i>	Sang Woo Ham, Lawrence Berkeley National Laboratory
Tues 8/6	Session 1 8:30 - 10:00 am Solar Sparks: Utility Innovation, Cost-Effective Solar and Demand Response with Battery Energy Storage Solutions (BESS)	<i>The best of both worlds: Combined thermal and battery storage for widespread building decarbonization</i>	Sven Mumme, U.S. Department of Energy
		<i>A utility works to incentivize customers to install solar and dispatchable storage in their homes.</i>	Chelsea Liddell, DNV
		<i>Supercharging Demand Response Performance with Residential Batteries</i>	Carly Olig, Guidehouse
	Session 2 10:30 am - 12:00 pm "In the Heat of the Moment": Recent Innovations on Thermal Energy Storage	<i>Equity, Electrification, and Time of Use (TOU) rates: Coupling Thermal Energy Storage with Heat Pumps for Improved Operational Efficiency</i>	Sara Sultan, Optimal Energy Group at NV5
		<i>Demystifying Thermal Energy Storage: Evaluating The Tradeoffs Between Storage Sizing And Control Algorithm Complexity For Demand Flexibility</i>	Armando Casillas, Lawrence Berkeley National Laboratory
		<i>Advancements in combi heat pumps with thermal storage – a cornerstone solution for equitable and efficient grid-interactive electrification in cold climates</i>	Jonathan Woolley, Emanant Systems

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DATE	SESSION	TITLE	LEAD AUTHOR, ORGANIZATION
Wed 8/7	Session 1 8:30 - 10:00 am	<i>From One-Shift Wonder to Multi-Shift Maestro: Model Predictive Control for Smart Operation of Heat Pump Water Heaters</i>	Caton Mande, UC Davis Western Cooling Efficiency Center
	I'm Flexible When I'm Under Pressure: Heat Pump Water Heater and Demand Flexibility	<i>Grid-interactive Load Flexibility Control of Multifamily Heat Pump Water Heater Systems</i>	Greg Pfothenauer, Artemisia Energy
		<i>Grid-connected heat pump water heater benefits for low-income households in the Southeastern United States</i>	Helen Davis, Energy Solutions
	Session 2 10:30 am - 12:00 pm	<i>SCE Flick Power Study: Pre-Attentive Color Schemes to Enhance Customer Responsiveness to Time-of-Use Electric Rates</i>	Ivy So, APTIM
	Customers and Stakeholders: colors, apps and standards in engaging load flexibility	<i>Introducing SG communication through telematics-based applications</i>	Abigail Braun, ADM Associates
		<i>Stakeholder perspectives on the role of standards in establishing a load flexible ecosystem</i>	Sarah Outcalt, UC Davis Energy and Efficiency Institute
Thurs 8/8	Session 1 8:30 - 10:00 am	<i>The state of demand flexibility programs and rates and their role in managing peak demand</i>	Sean Murphy, Lawrence Berkeley National Laboratory
	Smart Strategies: Illuminating Demand Flexibility and Stakeholder Insights in Grid-Interactive Ecosystems	<i>Get Smart: The Business Case for Grid-Interactive, Efficient Buildings</i>	Lian Plass, Urban Land Institute
		<i>Assessing Customer Experience and Business Models around Price-to-Device Communication and Smart Control Pathways in CalFlexHub</i>	Jingjing Liu, Lawrence Berkeley National Laboratory
		Session 2 10:30 am - 12:00 pm	<i>Architecting the Future: Exploring Coordinated Control Frameworks for Connected Communities</i>
	Blueprints for Tomorrow: Orchestrating Resilience an Efficiency in Connected Communities	<i>Harmonized Resilience at Roosevelt Village: How Futuristic Grid-Interactivity and Resilience Come Together in Senior Affordable Housing</i>	Brett Webster, RMI
		<i>Techno-Economic Analysis of High Efficiency and Connected DERs for Connected Communities – A Case Study in Seattle, WA</i>	Siva Sankaranarayanan, EPRI

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DATE	SESSION	TITLE	LEAD AUTHOR, ORGANIZATION
Fri 8/9	Session 1 8:30 - 10:00 am	<i>Implementing Load Flexibility Programs For Low Income Households to Help Alleviate Energy Burden</i>	Adam Farabaugh, Uplight
	Smart Thermostats Again? Questions and Solutions for this Established Technology	<i>Smart Thermostats and Heat Pumps: Incompatible? Or just need counseling?</i>	Therese Peffer, California Institute for Energy and Environment
		<i>Utilities and the Future: A west-coast utility invests in an internal Virtual Power Plant platform and partners for rapid-turnaround evaluation of programs</i>	Geoff Barker, DNV
	Session 2 10:30 am - 12:00 pm	<i>Digitization, Standards and Interoperability: Lighting as a Team Player</i>	Carol Jones, DALI Alliance
	Semantics Unleashed: Lighting, BRICK and Plug Loads, and Building Automation Futures	<i>BRICK Schema Standardized Plug Load Control Strategies for Load Reduction and Demand Response</i>	Keaton Chia, University of California San Diego
		<i>Digital and Interoperable: the future of building automation is on the horizon. What's in it for me?</i>	Marco Pritoni, Lawrence Berkeley National Laboratory