PANEL 12: SMART AND GRID-INTERACTIVE BUILDINGS
(Meeting Room: Acacia)
Panel Leaders: Paul Mathew and Therese Peffer

MONDAY, AUGUST 22	**SESSION 1 (8:30 am - 10:00 am) - Therese Peffer**	
	The Big Picture: Policy Design and Analysis	
	Making Grid-Interactive Efficient Buildings a "Win" for Both Customers and Utilities *Presented by: Ryan Hledik, Brattle* *(Lead Author: Andrew Satchwell, Lawrence Berkeley National Laboratory)*	
	Large-scale Simulation of Regional Demand Flexibility Implementation and Customer Economic Impact *Hayden Reeve, Pacific Northwest National Laboratory*	
	Towards an Equitable Grid-Interactive Efficient Building Landscape: Visualizing Technology Adoption in the State of New York *Danielle Preziuso, Stevens Insitute of Technology*	
	SESSION 2 (10:30 am - 12:00 pm) - Paul Mathew	
	Metrics and Ratings	
	GridFlex: Introducing Metrics to Benchmark Building-grid Interactivity *Kevin Carbonnier, New Buildings Insitute*	
	RESNET Load Flexibility Task Group: Developing Ratings that Incentivize Demand Responsive Buildings and a Cleaner Grid *David Goldstein, NRDC*	
	Methodology for Modeling Savings for Home Energy Management Systems *Robert Hendron, Frontier Energy*	
TUESDAY, AUGUST 23	**SESSION 1 (8:30 am - 10:00 am) - Paul Mathew**	
	Heat Pumps and More	
	Engaging Contractors: a Critical Partner to Realize the Load Shifting Potential of HPWHs *Christine Riker, Energy Solutions*	
	Field Study of Grid-connected Heat Pump Water Heaters in the Southeast U.S. - The Next Right Thing *Joshua Butzbaugh, Pacific Northwest National Laboratory*	
	Decarbonization Impact of Grid-Interactive Efficient Buildings – An Affordable Housing Use Case *Agatha Kazdan, Electric Power Research Institute*	
	SESSION 2 (10:30 am - 12:00 pm) - Therese Peffer	
	Data Analytics	
	A Multi-level Load Shape Clustering and Disaggregation Approach to Characterize Patterns of Energy Consumption Behavior *Samanvitha Murthy, Lawrence Berkeley National Laboratory*	
	At Long Last: Realizing the Promise of Non-intrusive Load Monitoring *Jennifer McWilliams, DNV*	
	Towards a Stronger Foundation: Digitizing Commercial Buildings with Brick to Enable Portable Advanced Applications *Carlos Duarte Roa, University of California, Berkeley*	

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WEDNESDAY, AUGUST 24	**SESSION 1 (8:30 am - 10:00 am) - Therese Peffer**	
	People and Process: Stakeholder Engagement	
	Smart Home Energy Monitoring: Data-Driven Opportunities and Customer Engagement *Amalia Hicks, Cadmus*	
	Trust, Competence, and Innovation: Understanding Customers' Energy and Smart Home Brand Perceptions *Presented by: Dan Burak, Uplight* *(Lead: Beth Karlin, See Change Institute)*	
	Cyber-Physical-Social Digital Platform for Microgrids (CPSDPM): Addressing Design Gaps for Historically Underserved Communities *Ashok Das, SunMoksha Power Private Ltd.*	
	SESSION 2 (10:30 am - 12:00 pm) - Paul Mathew	
	Integrating Storgage, PV and Load Management	
	Battery Energy Storage Systems and PV/Battery Microgrid Applications for Buildings *David Kaneda, IDeAs Consulting*	
	SunDial Integration of Building Load Management, Solar PV, and Energy Storage to Support the Electric Grid: Lessons from a Field Pilot *Matt Kromer, Fraunhofer USA*	
	Solar+ Optimizer: Integrated Control of Solar, Batteries, and Flexible Loads for Small Commercial Buildings *Lazlo Paul, Lawrence Berkeley National Laboratory*	
THURSDAY, AUGUST 25		**SESSION 1 (8:30 am - 10:00 am) - Paul Mathew**
		Where the Rubber Meets the Rroad: Case Studies and Field Studies
		Field Study Demonstrates Financial and Grid Benefits of EV Bidirectional Charging *Daniel Real, Advanced Energy*
		Demand Response Capabilities of Refrigerated Warehouses: Experiences in Practical Implementation *Ammi Amarnath, EPRI*
		Real-time Carbon Emission Responsive Electric Vehicle Charging Control for Decarbonization *Presented by Dr. Xin Jin, National Renewable Energy Laboratory* *(Lead: Jing Wang, National Renewable Energy Laboratory)*
		SESSION 2 (10:30 am - 12:00 pm) - Therese Peffer
		HVAC Controls Optimization
		Evaluating the Performance of HVAC Optimal Control Based on Real-time Floor-by-floor Occupancy Data *Presented by: Jessica Granderson, Lawrence Berkeley National Laboratory* *(Lead Author: Guanjing Lin, Lawrence Berkeley National Laboratory)*
		Unsupervised Learning for Detecting VAV Anomalies in Commercial Buildings *Presented by: Brad Schultz, Buildings Alive* *(Lead Author: Hao Huang, Buildings Alive)*
		A Low Cost Centralized HVAC Control Ssystem Solution for Energy Savings, Load Shedding, and Iimproved Maintenance *Nicolas Fauchier-Magnan, University of California, Davis*

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FRIDAY, AUGUST 26	**SESSION 1 (8:30 am - 10:00 am) - Therese Peffer**
	Load Flexibility: New Frontiers
	Retargeting Demand Response for Carbon Positive Flexible Buildings *Craig Roussac, Buildings Alive*
	Accelerating Load Flexibility with the California Flex Hub and Automated Price Response *Presented by: Jingjing Liu, Lawrence Berkeley National Laboratory* *(Lead Author: Mary Ann Piette, Lawrence Berkeley National Laboratory)*
	Impact and Incentives for Load Management Strategies in Multifamily Buildings *Mark Frankel, Ecotope*
	SESSION 2 (10:30 am - 12:00 pm) - Paul Mathew
	The Smarts in Components and Controls
	Enhancing the Role of Plug Loads in Grid-Interactive Buildings Using Smart Plugs *Yao-Jung Wen, Energy Solutions*
	Cloud-Control of Legacy Building Automation System: A Case Study *Anand Krishnan Prakash, Lawrence Berkeley National Laboratory*
	When Smart Thermostats are Dumb: Lessons Learned from Evaluating Eight Advanced Thermostats *Therese Peffer, UC Berkeley*