

## Panel 3: Commercial Buildings: Technologies, Design, Operations, and Industry Trends (Room: OAK SHELTER)

**PANEL LEADERS: Alexi Miller, New Buildings Institute and Cindy Zhu**

DATE	SESSION	TITLE	LEAD AUTHOR, ORGANIZATION
Mon 8/5	<b>Session 1</b> <b>8:30 - 10:00 am</b>  Jolly Green Giants: Decarbonizing Large Commercial Buildings	<i>The Solution to Large Building Electrification: Heat Recovery Chillers and Condenser Water Storage</i>	Jeff Stein, Taylor Engineers
		<i>Are we prioritizing the right thing? Cutting carbon emissions in California's large office buildings before installing a heat pump.</i>	Hwakong Cheng, Taylor Engineers
		<i>Heat Pumps can Help Decarbonize Large Commercial Buildings - Learnings from Foreign Applications</i>	Andrew Hoffmeister, ACEEE
	<b>Session 2</b> <b>10:30 am - 12:00 pm</b>  The Secret Sauce: Lessons Learned from Real-World Decarb Projects	<i>Not Too Cool for School: Demystifying Costs and Accelerating Pathways for All-Electric and Healthy Schools</i>	Reilly Loveland, New Buildings Institute
		<i>Large-Scale Energy System Transformation – From Old School to Clean Energy Campus</i>	Bruce Chamberlain, UC Berkeley
		<i>How DOAS will be a Key Contributor to Building Decarbonization</i>	Nicholas O'Neil, Energy 350
Tues 8/6	<b>Session 1</b> <b>8:30 - 10:00 am</b>  Food for Thought: Trends and Forecasts for Commercial Building Decarbonization	<i>Electrification, for the rest of us</i>	Sean Brennan, Cadmus Group
		<i>Analyzing the long-term effects of building age on commercial building energy use and floorspace</i>	Courtney Sourmehi, US EIA
		<i>Identifying Barriers That Impede Cost-Effective, Holistic, and Equitable Building Performance and Zero Carbon Goals in Disadvantaged Communities</i>	Ardelia Clarke, National Renewable Energy Laboratory
	<b>Session 2</b> <b>10:30 am - 12:00 pm</b>  Retrofit Ratatouille: Transforming Today's Spaces	<i>From Chills to Thrills: Revolutionizing Energy Efficiency and Load Flexibility in Supermarket Refrigeration</i>	Ramin Faramarzi, National Renewable Energy Laboratory
		<i>The impact of adaptive thermal comfort on energy savings in office buildings under various insulation levels</i>	Hui (Mia) Ben, Newcastle University
		<i>Progress Toward Electrification of Commercial Buildings</i>	Peter Klint, Eversource

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Wed 8/7	<b>Session 1</b> <b>8:30 - 10:00 am</b>  Feed Me More Data! Analytics and Automation in Buildings	<i>Finding Fault: How AFDD Can Deliver Efficiency at Scale for the Military and Beyond</i>	Bryan Urban, Fraunhofer USA
		<i>Development and Validation of a Low-Cost Building Automation System for Small- and Medium-size Commercial Buildings</i>	Srinivas Katipamula, Pacific Northwest National Laboratory
		<i>Data Driven Sustainability for Mechanical and Electrical Products in Buildings</i>	Taler Bixler, Pacific Northwest National Laboratory
	<b>Session 2</b> <b>10:30 am - 12:00 pm</b>  Power Breakfast! Demand Flexibility and DER Desserts	<i>Making Parking "EV Ready" At Scale: New Construction Requirements &amp; Retrofit Programs for Comprehensive Futureproofing</i>	Brendan McEwen, Dunsky Energy + Climate Advisors
		<i>Advancing Grid Sustainability: Load Shifting with Heat Pump Water Heaters in Commercial and Multifamily Applications</i>	Madison Johnson, Ecotope
		<i>Price-based Communications for Load Shedding in Overloaded Panels</i>	Anand Krishnan Prakash, Lawrence Berkeley National Laboratory
Thurs 8/8	<b>Session 1</b> <b>8:30 - 10:00 am</b>  What's in the Fridge: Next-Gen Refrigerants in HVAC and Beyond	<i>Overcoming Barriers to Natural Refrigerants: "Why can I buy a propane boiler but I cannot buy a propane heat pump?"</i>	Scott Spielman, Ecotope
		<i>A Near-Zero-GWP Heat Pump System for All-Electric Heating &amp; Cooling in California</i>	Aaron Tam, EPRI
		<i>The Natural Choice for Walk-in Refrigeration: Packaged Hydrocarbon Equipment</i>	Jake Marin, VEIC
	<b>Session 2</b> <b>10:30 am - 12:00 pm</b>  Cracking the Tough Nut: Hard-to- Decarbonize Buildings and Systems	<i>Amp Up for Commercial Kitchen All-electric Retrofits: San Francisco International Airport (SFO) Case Study</i>	Matthew Pucci, San Francisco International Airport
		<i>How to Achieve Energy Star Certification in a Hospital with this One Weird Trick. What's Next? (no paper)</i>	Lianna Nordwig, Go Sustainable Energy
		<i>Central Heat Pump Water Heating Systems for Decarbonizing Multifamily Buildings: Market Assessment, Energy Performance and Cost Effectiveness Analysis</i>	Jingjuan Dove Feng, TRC

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DATE	SESSION	TITLE	LEAD AUTHOR, ORGANIZATION
Fri 8/9	<p><b>Session 1</b> 8:30 - 10:00 am</p>	<p><i>Pump Up Savings Persistence: Ensure VFD Savings with Smart Pumps</i></p>	<p>Warren Fish, NEEA</p>
	<p>Eat Your Efficiency Vegetables: Appetizing Energy Savings in Fans &amp; Pumps</p>	<p><i>Boring but Efficient: HPWH Opportunities in Commercial Buildings</i></p>	<p>Geoff Wickes, Northwest Energy Efficiency Alliance</p>
		<p><i>Getting to Fan-Tastic: Overcoming Barriers to Energy Efficiency in the C&amp;I Fan Market</i></p>	<p>Christopher Dyson, DNV</p>
	<p><b>Session 2</b> 10:30 am - 12:00 pm</p>	<p><i>Getting Real about Dynamic Greenhouse Gas Monitoring for Buildings: Long Term Implications for Managing a Large Commercial Portfolio</i></p>	<p>Erin Lannon, U.S. General Services Administration</p>
	<p>The Decarbonization Casserole: Emerging Tech Spotlights</p>	<p><i>Design and Performance of Small Heat Pump Water Heater Systems</i></p>	<p>Yanda Zhang, ZYD Energy Inc.</p>
		<p><i>HVAC Fuel Substitution Measure Opportunities in California</i></p>	<p>Bryan Boyce, Energy Solutions</p>