

ELECTRIFICATION 2024 Pre-Conference Workshops

Monday | 3/11

1:00 PM - 5:00 PM	Power Quality Applications (Part 1)	Examine the challenges that face the industry in addressing real-world issues of managing power quality on both sides of the meter. In addition to the practical issues, techniques and approaches, leading-edge research will be presented for today's issues as well as the increasing challenges presented by significant growth in electric end uses. Workshop Agenda Speakers: Bill Howe & Mark Stephens, EPRI
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Tuesday | 3/12

8:00 AM - 5:00 PM	Power Quality Applications (Part 2)	Examine the challenges that face the industry in addressing real-world issues of managing power quality on both sides of the meter. In addition to the practical issues, techniques and approaches, leading-edge research will be presented for today's issues as well as the increasing challenges presented by significant growth in electric end uses. Workshop Agenda
8:00 AM - 5:00 PM	Industrial Heat Pumps	Industrial heat pumps create significant process improvements as well as decarbonization opportunities. Explore the fundamentals as well as best applications of industrial heat pumps. The workshop will also take an in-depth look at the fundamentals, design parameters and applications of large heat pumps for campus and district energy systems. Workshop Agenda
8:00 AM - 12:00 PM	Process Heating Electrification Applications	Industrial process heating presents a variety of electrification opportunities. Technologies utilized include, but are not limited to, infrared heating and ultraviolet lighting for curing and drying applications as well microwave applications for enhancing process reactions. These approaches eliminate the need for volatile organic compounds (VOCs) in coatings and also speed production times.
8:00 AM - 12:00 PM	Getting EVs to Swift Grid Interconnection	Everyone wants electrical service instantly--but at what costs? What have we learned from solar battery storage, and similar service requests that can be applied for faster grid interconnections for electric transportation?
8:00 AM - 12:00 PM	Cold Climate Heat Pumps	Work in recent years to produce cold climate heat pumps has resulted in a variety of viable products. Explore the new options on the market, applications for success, and the benefits for customers, utilities and energy programs.
8:00 AM - 12:00 PM	Equitable Electrification	Electrification and decarbonization goals are unlikely to be met unless customers across society are included. Moreover, low-income and under-resourced communities can benefit from electrification and energy efficiency. This workshop with scenario and decision-making role playing and roundtable discussions will provide grounding in equity and energy justice, explore implicit bias and structural issues that can drive inequitable outcomes, and discuss strategic approaches and leading practices for productively engaging disenfranchised and disadvantaged households to advance equitable electrification.
1:00 PM - 5:00 PM	Non-Road Transportation	Significant opportunities exist for electrification in non-road applications. From forklifts to airport ground equipment to port equipment of all types, as well as recreational vehicles, non-road electrification holds great promise in a net-zero future.
1:00 PM - 5:00 PM	Vehicle to X Integration	We've done technology and custom pilots. What is needed for rapid scale and what are the ultimate benefits to customers and grid operators? Is there a line of sight to an affordable, flexible, customer-centric solution that vehicle manufacturers and utilities are willing to broadly adopt? Do we need standardized interconnections to homes, buildings, and the grid? How does V2X support resilience?
1:00 PM - 5:00 PM	Workforce Development	Electrification to drive economy-wide decarbonization has the potential to create a surge of new jobs and demand for ancillary products and services that can stimulate local economic development. Explore how we can equip individuals with the requisite knowledge, skills and training to meet this demand, while providing equitable access to these opportunities to enable a diversified, prosperous workforce for an electrified future.

ELECTRIFICATION 2024 **Plenary Sessions**

Wednesday | 3/13 **8:00 AM - 10:00 AM**

PLENARY SESSION Opening Plenary	Part 1: Welcome to Electrification 2024	Welcome and opening remarks from EPRI CEO Arshad Mansoor. Southern Company President & CEO Chris Womack will follow with a presentation on the importance of electrification to the company and industry.
PLENARY SESSION Opening Plenary	Part 2: The Power of Electrification	<p>Molly Aeck, Customer Solutions VP at Georgia Power, will moderate a customer-focused discussion on the value and impacts of end-use electrification on the panelists' respective businesses.</p> <p>Panelists include:</p> <ul style="list-style-type: none">• Glemon R. English IV, EV Transportation Director, Savannah-Chatham Public School System• Dr. Raj Gopaldaswamy, Global Technology Director, New Domains, Novelis• David Repp, Innovation Manager, Waffle House• Christopher Smith, Chief Implementation Officer/General Counsel, Hyundai Motor Group Metaplant America

ELECTRIFICATION 2024 Educational Sessions

Wednesday | 3/13 10:30 AM - 12:00 PM

TRACK 1 Industrial	Gearing Toward a Net-Zero Future in Industry	<p>Gearing toward a net-zero future is an imperative task that requires global cooperation and concerted efforts from all sectors of society. It encompasses a comprehensive transition toward sustainable practices and technologies aimed at eliminating greenhouse gas emissions and mitigating climate change. Achieving net zero involves a multi-faceted approach, including decarbonizing energy production, promoting renewable energy sources, improving energy efficiency, transitioning to electric mobility, and adopting circular economy principles. By embracing a net-zero future, we can forge a path toward a cleaner, healthier planet, ensuring a sustainable future for generations to come. This session will focus on how large commercial organizations and industries are embracing these principles and moving toward a net-zero future.</p> <p>Moderator: Baskar Vairamohan, EPRI</p> <p>Panelists</p> <ul style="list-style-type: none">• Salvador Zambrano, Port of Los Angeles, LA Harbor Department• Tracy Leslie, EPRI• Scott Bishop, EPRI
TRACK 2 Decarbonized Transportation	The 2030 Road Map: Getting From Here to There	<p>What are the leading EV markets in the U.S.? Why? How much charging and supporting infrastructure is needed? What's happening in the truck sector? What pace of action and investment are needed to reach 2030 goals?</p> <p>Moderator: Britta Gross, EPRI</p> <p>Panelists</p> <ul style="list-style-type: none">• Dejan Antunovic, PepsiCo• Jamie Dunckley, EPRI
TRACK 3 Smart & Decarbonized Buildings	Celebrating Successes	<p>While building electrification is not new, the industry has hit its renaissance over the last 5-10 years. This panel will talk about successes in the industry that have advanced technologies, markets and programs around building electrification. It will cover the challenges faced and collaborative techniques that are enabling the industry to solve challenges around building electrification.</p> <p>Moderator: Panama Bartholomy, Building Decarbonization Coalition</p> <p>Panelists</p> <ul style="list-style-type: none">• Brian Urlab, Salas O'Brien• Rebecca Foster, VEIC• Ben Clarin, EPRI• Chris Gray, RENU Communities
TRACK 4 People & Communities	Equitable Electrification: Delivering economic benefits to empower local communities and uplift all segments of society	<p>How can the benefits of electrification accrue equitably to everyone in society? Learn how electrification can uplift economically disadvantaged communities through initiatives that enable access to technologies and create local electrification-linked jobs.</p> <p>Moderator: Brenda Brickhouse, EPRI</p> <p>Panelists</p> <ul style="list-style-type: none">• Shiloh Costello, SMUD• Dr. Destenie Nock, Carnegie Mellon University• Andrew Jones, Carnegie Mellon University• Daniel Farrell, ACEEE

ELECTRIFICATION 2024 Educational Sessions

Wednesday | 3/13 10:30 AM - 12:00 PM cont.

TRACK 5 Department of Defense	A Conversation With the Department of Defense: Electrification Priorities, Policy & Processes	<p>As the world's largest institutional energy consumer, the U.S. Department of Defense requires an abundance of energy to power its facilities, weapons systems and equipment both at home and abroad. While facing an array of operational demands that increase the amount of power required to integrate sensors and systems and perform mission critical functions, the DOD also faces a variety of threats to its installations and infrastructure from cyber attacks, climate change, and aging facilities and equipment. Electrification can help the DOD meet its energy and national security goals. This session will examine some of the electrification priorities, policies, and processes of DOD. Moderated by Mike Wu, who has extensive experience in government energy policy, we will look at DOD studies, demonstrations, prototyping and installation of electrification project processes. In addition, we will discuss U.S. Navy electrification priorities and how different or similar they are to the rest of DOD's.</p> <p>Moderator: Michael Wu, Converge Strategies</p> <p>Panelists</p> <ul style="list-style-type: none">• Thomas Layne, Air Force Research Laboratory• Tim Tetreault, ESTCP — Installation Energy and Water• Michael Savena, Department of the Navy• Christine Ploschke, Acting Deputy Assistant Secretary of the Army for Energy and Sustainability
TRACK 6 Low-Carbon Fuels in Electrification	The Potential of Hydrogen for Indirect Electrification	<p>Explore use cases for hydrogen in commercial and industrial process applications. Also investigate how might we improve the efficiencies in clean hydrogen production for greater access, including the use of new materials.</p> <p>Moderator: Brittany Westlake, EPRI</p> <p>Panelists</p> <ul style="list-style-type: none">• Neil Kern, EPRI• Tatum Auvil, EPRI• Paul Glanville, GTI Energy
TRACK 7 Electrification & Grid Impacts		
TRACK 8 Controlled Environment Agriculture		

ELECTRIFICATION 2024 Educational Sessions

Wednesday | 3/13 1:30 PM - 3:00 PM

TRACK 1 Industrial	Electrification of Heavy & Light Industries	<p>This session will provide an overview of industrial segments and how electrification solutions vary for large process industries compared to light / assembly / fabrication. The discussion will connect the four pillars of industrial decarbonization: energy efficiency, electrification, low-carbon fuels (indirect electrification) and carbon capture / utilization / storage.</p> <p>Moderator: Rick Ranhotra, EPRI</p> <p>Panelists</p> <ul style="list-style-type: none">• Kiran Thirumaran, Oak Ridge National Laboratory• Thirumaal Mahalingam, Electra• B.J. Bernard, Surface Combustion
TRACK 2 Decarbonized Transportation	Scale Means Everyone. Yes, EVERYONE!	<p>How do we make sure everyone is included in the transition? A 50% EV market share means we need to include urban consumers, rural, MDUs, disadvantaged, fleets, technology-rejectors and even overlooked or new voices. This is an equity and workforce opportunity, but charging stations must be reliable. What about neighborhood charging plazas? Curbside charging? Rideshare as a lever for change? What are best practices and lessons learned?</p> <p>Moderator: Dan Bowermaster, EPRI</p> <p>Panelists</p> <ul style="list-style-type: none">• Rachael Nealer, JOET (Joint Office)• Jeff Haase, Great River Energy• Pamela Fann, Impact Energy
TRACK 3 Smart & Decarbonized Buildings	Technology to Bridge the Gap	<p>While many of the tools and technologies to electrify buildings are here today, there are still emerging technologies and approaches that are needed to enable electrification of all types of buildings. The thought leaders who are part of this panel will talk about those emerging tools, technologies and approaches needed to help bridge the technology gaps to electrify all types of buildings across climates.</p> <p>Moderator: Lisa Tryson, Danfoss</p> <p>Panelists</p> <ul style="list-style-type: none">• Keirstan Field, EPRI• Stephen Hamlin, Danfoss• Grant Kovac, Copeland• John Thomas, Water Furnace
TRACK 4 People & Communities	Multifamily Housing: Electrification strategies and success stories for hard-to-reach multifamily communities	<p>Consideration of residential electrification opportunities often overlooks the multifamily housing sector, which is typically regarded as a “hard-to-reach” market. Learn about strategies and success stories for electrification in a variety of multifamily housing examples, including overcoming institutional and perceptual barriers while ensuring equitable access to technology.</p> <p>Moderator: Reuven Sussman, ACEEE</p> <p>Panelists</p> <ul style="list-style-type: none">• Ben Clarin, EPRI• Lauren Westmoreland, Stewards of Affordable Housing for the Future• Madeline Kostic, Seattle City Light

ELECTRIFICATION 2024 Educational Sessions

Wednesday | 3/13 1:30 PM - 3:00 PM cont.

TRACK 5 Department of Defense		
TRACK 6 Low-Carbon Fuels in Electrification		
TRACK 7 Electrification & Grid Impacts	Strategy and Resource Planning for Electrification Growth	<p>What are the impacts of electrification on load shape, magnitudes and resource adequacy? This session will cover modeling electric vehicles, HVAC, industrial and other electric loads in capacity expansion analytics.</p> <p>Moderator: Nidhi Santen, EPRI</p> <p>Panelists</p> <ul style="list-style-type: none">• Valerie von Schramm, CPS Energy• Juan Pablo Carvallo, Lawrence Berkeley National Laboratory• Mike Risavy, Independent Electricity System Operator (IESO)
TRACK 8 Controlled Environment Agriculture	Electrification Opportunities and Community Benefits	<p>Indoor agriculture / Controlled Environment Agriculture (CEA) is expanding worldwide. The growing industry utilizes a range of electric technologies and unique form factors to deliver ideal growing conditions year-round regardless of climate and outdoor conditions. This panel of industry leaders will share how CEA can be sited within any community due to its ability to be located in shipping containers, storefronts, warehouses or specialized greenhouses, and how these farms can work with utilities and communities to potentially deliver a range of grid, environmental, community and societal benefits.</p> <p>Moderator: Frank Sharp, EPRI</p> <p>Panelists</p> <ul style="list-style-type: none">• Marc Oshima, AeroFarms• Rick Vanzura, Freight Farms

ELECTRIFICATION 2024 **Plenary Sessions**

Wednesday | 3/13 **3:30 PM - 5:00 PM**

PLENARY SESSION Equity & Affordability Plenary	Part 1: Driving Community Equity Through Electrification	Panel discussion on how government, NGOs and communities are driving policy and opportunity for low-to-moderate income customers in the transition to economy-wide decarbonization, moderated by Morgan Scott, EPRI Director of Climate READi and Sustainability. Panelists include: <ul style="list-style-type: none">• Dr. Tony Reames, University of Michigan School for Environment & Sustainability• Nathaniel Smith, Chief Equity Officer of Partnership, Southern Equity• Sydney Roberts, Director of Technology & Market Solutions, Southeast Energy Efficiency Alliance• Chris Ayers, Executive Director, North Carolina Utilities Commission – Public Staff
PLENARY SESSION Equity & Affordability Plenary	Part 2: Putting Equity to Work in the Community	Panel discussion detailing field implemented electrification technologies in low-to-moderate income communities. Discussions will include customer benefits, partnership structures, and approaches between New York utilities and the New York City Housing Authority to effect positive change. Panelists include: <ul style="list-style-type: none">• Maribel Cruz, VP Economic Development & Key Accounts, New York Power Authority• Siobhan Watson, Senior Director of Sustainability, New York City Housing Authority• Greg Elcock, VP Energy Efficiency & Distributed Resource Integration, Con Edison• David Porter, Vice President, Electrification & Sustainable Energy Strategy, EPRI

Additional panelists/speakers to be confirmed.

ELECTRIFICATION 2024 **Plenary Sessions**

Thursday | 3/14 **8:00 AM - 10:00 AM**

PLENARY SESSION Regulatory & Policy Plenary	Part 1: Welcome to Savannah	Remarks by Audrey King, VP Savannah Region, Georgia Power.
PLENARY SESSION Regulatory & Policy Plenary	Part 2: Policy Implications for an Electrified Future	Presentations and panel discussion on the impact of policy and regulation on electrification and economy-wide decarbonization, moderated by Audrey King, VP Savannah Region, Georgia Power. Panelists include: <ul style="list-style-type: none">• Hunter Hill, Executive Director, Georgia State Energy Office• Sydne Smith, COO, Georgia Department of Economic Development• Bert Brantley, President & CEO, Savannah Area Chamber of Commerce• Representative Chuck Martin, Georgia State House of Representatives
PLENARY SESSION Regulatory & Policy Plenary	Part 3: Electrification Regulatory Opportunities & Challenges	Panel discussion on the influence of state regulation in electrification and economic/community development. Panelists include: <ul style="list-style-type: none">• Commissioner Tricia Pridemore, Georgia Public Service Commission• Commissioner Julie Fedorchak, North Dakota Public Service Commission, NARUC President• Commissioner Katherine Peretick, Michigan Public Service Commission

ELECTRIFICATION 2024 Educational Sessions

Thursday | 3/14 10:30 AM - 12:00 PM

<p>TRACK 1 Industrial</p>	<p>Electrification of Heavy Mobile Non-Road Equipment</p>	<p>The work performed by heavy machineries in ports, industrial facilities construction, mining and agriculture requires delivery and short-term storage of dense energy reserves at the point of operation to literally move the earth and perform other material movement operations needing heavy horsepower prime movers. Duty cycles are long, payloads are heavy and environmental conditions are harsh requiring this mobile equipment to carry its energy source along with it, historically in the form of energy-dense liquid fossil fuels. As a result, these have been challenging sub-sectors of industrial mobility to decarbonize via direct electrification with battery-electric options. The challenges and opportunities for direct and indirect electrification of heavy mobile equipment will be discussed in this panel.</p> <p>Moderator: Perry Stephens, EPRI</p> <p>Panelists</p> <ul style="list-style-type: none">• Mark Cosby, Orange EV• Paul Harkness, Port of Savannah (Garden City Terminal)• Robert Bond, Tri-Lift Industries Inc.
<p>TRACK 2 Decarbonized Transportation</p>	<p>Why Is a Truck Not a Building? Why Is Electrifying at Scale So Hard?</p>	<p>This session will lay out major challenges and solutions to electrification at scale, including fleet electrification and today's regulatory paradigms. Do today's rules work? Who has it figured out?</p> <p>Moderator: Phil Jones, ATE</p> <p>Panelists</p> <ul style="list-style-type: none">• Andrea Pratt, Volvo Trucks• Lydia Krefta, PG&E• Sujit Mandal, Amazon
<p>TRACK 3 Smart & Decarbonized Buildings</p>	<p>Making Buildings 'Smart'</p>	<p>From smart thermostats to connected water heaters to AI-enabled voice assistants, the market for behind-the-meter smart devices that improve comfort and convenience, and provide energy management capabilities, has exploded over the last few years. What is the future value of smart buildings and connected communities, and how can it be realized?</p> <p>Moderator: Edwin Hornquist, EPRI</p> <p>Panelists</p> <ul style="list-style-type: none">• Amit Paul, Prescriptive Data• Mary Ann Piette, Lawrence Berkeley National Laboratory• Krish Gomatam, EPRI• Christopher Malotte, Southern California Edison (SCE)• Paul Steffes, Steffes• Siva Sankaranarayanan, EPRI

ELECTRIFICATION 2024 Educational Sessions

Thursday | 3/14 10:30 AM - 12:00 PM cont.

TRACK 4 People & Communities	Electrifying K-12 School Campuses: Benefiting essential community infrastructure and enhancing curricula	School campuses offer exciting opportunities for transformative growth in electrification, while also serving as a showcase for educators and students to experience new technologies. Learn more about how utilities and third parties have partnered with schools to help achieve electrification and decarbonization goals while adding new, relevant learning modules into the curriculum. Moderator: Agatha Kazdan, EPRI Panelists <ul style="list-style-type: none">• Clay Hoover, TVA• Vanessa Miller, Kaigler People & Communities• Darrell Boazman, Savannah Chatham County Public School System, Capital Projects Chief Officer
TRACK 5 Department of Defense		
TRACK 6 Low-Carbon Fuels in Electrification		
TRACK 7 Electrification & Grid Impacts	T&D Investment Planning for Large-Scale Electrification	What new approaches and techniques will drive T&D investment planning to enable fleets, residential/commercial EV charging and other peak-increasing end uses? Moderator: Alison O'Connell, EPRI Panelists <ul style="list-style-type: none">• Jun Wen, Southern California Edison• Jeremiah Deboever, EPRI• Andy Eiden, Portland General Electric
TRACK 8 Controlled Environment Agriculture		

ELECTRIFICATION 2024 Educational Sessions

Thursday | 3/14 1:30 PM - 3:00 PM

<p>TRACK 1 Industrial</p>	<p>Emerging Technologies in Industry</p>	<p>Many new emerging electro-technologies and indirect electrification technologies are being introduced in the industrial market. Process heating technologies, such as microwave-enhanced chemistry, acoustically enhanced drying and low-cost heat pumps to make high-temperature steam are being developed and demonstrated around the country. Also, new indirect electrification technologies, such as ammonia and methanol as energy carriers, are seeing applications in industrial processes. This session will focus on new and emerging technologies for industrial electrification and decarbonization, and organizations behind the efforts to commercialize them.</p> <p>Moderator: Ammi Amarnath, EPRI</p> <p>Panelists</p> <ul style="list-style-type: none">• Neil Fromer, Resnick Sustainability Institute at Caltech• Sridhar Seetharaman, EPIXC at Arizona State University• Irfan Khan, The Dow Chemical Company• Keith Jamison, IEDO, U.S. Department of Energy
<p>TRACK 2 Decarbonized Transportation</p>	<p>Enough With the Pilots — Let's Get to Scale!</p>	<p>The 2030 goals loom large. And every year there's less time left to solve the challenges of getting to scale. Let's talk about solutions to the major barriers in processes, supply chain, workforce, etc.</p> <p>Moderator: Mike Rowand, EPRI</p> <p>Panelists</p> <ul style="list-style-type: none">• Mike Rowand, EPRI• Missy Henriksen, EEI/Center for Energy Workforce Development (CEWD)• Michael Berube, U.S. Department of Energy
<p>TRACK 3 Smart & Decarbonized Buildings</p>	<p>Scaling Up</p>	<p>While several of the technologies and approaches for building electrification have been individually tried and tested in a number of one-off field demonstrations, and while hundreds of consultant reports have repeatedly shown through various sophisticated simulation models about the benefits of scaled adoption, there is still a huge chasm to be crossed from small-scale demonstrations to widespread adoption and market transformation. This session will describe approaches and processes for making electrification happen at scale across a large portfolio of buildings and communities. The industry leaders in market transformation will share their insights.</p> <p>Moderator: Ryan Dougherty, Geothermal Exchange Organization</p> <p>Panelists</p> <ul style="list-style-type: none">• Panama Bartholomy, Building Decarbonization Coalition• Kevin Powell, U.S. General Services Administration (GSA)• Frank Rapley, Energy Solutions• Ryan Dougherty, EPRI

ELECTRIFICATION 2024 Educational Sessions

Thursday | 3/14 1:30 PM - 3:00 PM cont.

TRACK 4 People & Communities	Growing Electrification Opportunities in Agriculture, Farming, Manufactured Housing and Beyond	Consideration of electrification opportunities often overlooks rural communities, which are typically regarded as a “hard-to-reach” market. Learn about strategies and success stories for electrification in a variety of rural cases, including farming and agricultural applications. Moderator: Omar Siddiqui, EPRI Panelists <ul style="list-style-type: none">• Keith Dennis, Beneficial Electrification League• Allison Hamilton, National Rural Electric Cooperative Association (NRECA)
TRACK 5 Department of Defense		
TRACK 6 Low-Carbon Fuels in Electrification	Beyond Hydrogen — Other Low-Carbon Fuel Opportunities	Many other opportunities for low-carbon fuel use exist across the economy. Explore the different fuels, applications, benefits and approaches for production and distribution of these alternate fuels. Moderator: Perry Stephens, EPRI Panelists <ul style="list-style-type: none">• Panova Steven, EPRI• Rob Steele, EPRI• Sofia Furstenberg, Furstenberg Maritime Advisory
TRACK 7 Electrification & Grid Impacts		
TRACK 8 Controlled Environment Agriculture		

ELECTRIFICATION 2024 **Plenary Sessions**

Thursday | 3/14 **3:30 PM - 5:00 PM**

PLENARY SESSION
Closing Plenary

“How Far Can We Go?”

The Closing Plenary Session will look to electrification in the 2030 timeframe. Interactive panel sessions with industry and stakeholder leaders will address opportunities and challenges for success, including technology impacts, return of industry to the United States, building stock opportunities and the importance of customer engagement. Featured will be preparing for electric vehicles —50% penetration by 2030—fact or fantasy?

Speakers include:

- Adam Raphael, Amazon
- Jed Proctor, Daimler Truck
- Brice Adamson, President, Enterprise Fleet Management
- David Porter, Vice President, Electrification & Sustainable Energy Strategy, EPRI

Additional panelists/speakers to be confirmed.