

Wednesday, April 8

TRACK A: FRONTIERS OF ELECTRIC MOBILITY

TRACK B: ADVANCING BUILDING AND CUSTOMER TECHNOLOGIES

TRACK C: ELECTRIFYING INDUSTRIAL AND COMMERCIAL CUSTOMERS

TRACK D: ELECTRIFICATION AND THE MODERN GRID

TRACK E: COMMUNITY AND CUSTOMER BENEFITS OF ELECTRIFICATION

TRACK F: A POLICY LANDSCAPE FOR A MORE ELECTRIFIED ECONOMY

TRACK G: INNOVATIONS IN ELECTRIFICATION

10:30 AM – 12:00 PM

Session A1: Implementation of Megawatt-Scale Fast Charging

Direct Current (DC) fast charging at scale is an essential aspect of accelerating transportation electrification. How does our experience with existing networks inform much larger scale installations for both fleet and consumer use?

Session B1: The Next Generation of Space Heating

Heat pump technology continues to advance, offering greater efficiency and higher performance in colder climates. How do we capitalize on these advances for the greatest benefit in both new-built and retrofit scenarios?

Session C1: Electricity and the Food Industry

Food processing and foodservice electric technologies are integral to managing and dealing with waste streams (water, solid waste, and air emissions). Panelists will discuss electrification ties to food safety, evolving delivery methods, and sustainable, small footprint, productive technology solutions.

Session D1: The Role of the Electrified Customer in the Shared Integrated Grid

The Shared Integrated Grid imagines a future when customers' energy assets become shared energy solutions that enhance grid reliability, resiliency, and value. As customer adoption of electric technologies accelerates, how does the Shared IG address the challenges and maximize the opportunities of these new customers?

Session E1: Updates: National and Regional Progress on Electrification

The pace of electrification will be driven by starting point and available technologies combined with national, state and local policies/regulations. This session will explore the costs and lessons learned from electrification policies implemented by governments around the world.

Session F1: Policy Challenges and Opportunities for a More Electrified Economy

This panel will discuss four challenges and opportunities for efficient electrification from a policy lens: decarbonization, affordability, customer choice, and a changing workforce. Discuss with our panel members the policies and other ideas that could create the largest societal benefit from electrification while supporting vulnerable constituents and impacted workers.

Session G1: Radical Challenges: Technology Approaches for Deep Decarbonization

Moving beyond e-mobility and heating technologies that will account for the bulk of near-term electrification, what will be the next industry or sector to unlock disruptive change through innovation in electric technologies?

1:30 PM – 3:00 PM

Session A2: Challenges and Opportunities of Medium and Heavy-Duty Electric Vehicles

Technological advances and relentless cost reductions continue to expand the frontiers of e-mobility. The world of medium and heavy-duty vehicles is poised for a breakthrough with China and large fleets leading the way. How do we ensure a seamless transition, leaving no customer behind?

Session B2: Heat Pump Water Heaters

Adoption of heat pump water heaters (HPWHs) is a critical component in enabling efficient building electrification. A transition to heat pump technology for water heating will greatly reduce energy consumption in the commercial and residential sectors. This session will discuss current research, development, and deployments of HPWHs as well as present market adoption strategies.

Session C2: Metallurgy, Cement, Chemicals: Big Industrial Electrification Opportunities

The production of primary materials (bulk chemicals, fuels, fertilizer, metals, plastics and rubber, fibers, cements, powders) is energy intensive and fossil fuel dependent. These industries contribute significantly to the global carbon footprint as well as other air quality and water consumption/quality issues. This panel will discuss emerging roadmaps within their industries to electrify these massive energy inputs as they drive toward future carbon neutrality.

Session D2: Energy Storage for the Electrified Customer

Customer sited energy storage is making inroads for its ability to integrate local renewable generation and as a resiliency solution. As greater electrification increases demand and changes load shapes, how does the role of storage and its value proposition change? What new technologies and approaches are needed as the customer and the economy become more electrified?

Session E2: Value Tests: Assessing Customer Electrification Programs

Similar to energy efficiency, efficient electrification often faces non-economic barriers. Regulatory value tests provide an essential tool for developing and funding programs to overcome these barriers. This session will explore emerging approaches to assess electrification programs and their applications.

Session F2: Electrified, Connected and Shared: Planning for a Sustainable Transportation Future

Signposts and trends point to a transportation future that will be increasingly electrified, connected, and shared. This session will explore the many policy and planning considerations that could shape a more electrified transportation system that is sustainable, equitable, and resilient.

Session G2: Investing in and Accelerating Electric Technologies

Understanding the economics of electrification is critical to achieving the rapid, affordable deployment of electric technologies throughout society.

Thursday, April 9

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8:00 AM – 10:00 AM

Session A3: Carsharing, Congestion, and Complaining: Lessons Learned from EV Mobility Services

The pace and scale of innovation in mobility services is simply staggering. From automation to vehicle sharing to micromobility there is an onslaught of new technologies and business models. Please join this expert discussion on understanding and planning for the accelerating world of mobility services.

Session B3: Overcoming Cost and Other Barriers in Residential Electrification Opportunities

Residential electrification can be perceived as a cost prohibitive and intrusive endeavor for residential buildings and customers. Therefore, it is important to understand “when” and “where” it makes sense, followed by clear value propositions that lead to actionable approaches to capitalize on these opportunities. This session will bring together experts to discuss analytical approaches to enable scalable building electrification.

Session C3: Customer Panel — Pioneers of Fleet Electrification

The energy and emissions from goods and people movement ‘off’ the public roads and highways are significant. This panel will explore how vehicle electrification in warehouses and logistics, refrigerated transport, construction & mining, maritime ports, airports and agriculture represents golden and often hidden opportunities to reduce emissions, lower costs, and improve health, safety, and productivity.

Session D3: Transmission and Distribution Planning for New Electric Tech at Scale

New loads present new challenges to a grid that is already adapting to rapid changes in energy production and use. From multi-MW electric vehicle charging installations to large-scale indoor food production, what are the impacts of emerging electric technologies and how are grid planners addressing them now and in the future?

Session E3: The State of Electrification Assessments: Economy-Wide Analyses

The ultimate extent of electrification and the pace of change are highly uncertain and depend on technological change, policies, and evolving customer preferences. Speakers on this panel will provide their views about what we do well and what we do poorly in modeling transportation, building, and industrial technology choices and implications.

Session F3: Capturing the Full Benefits and Costs of Electrification

Efficient electrification technologies will require new cost-effectiveness tests to fully capture their benefits. This session aims to better understand what benefits and costs are important when evaluating efficient electrification technologies; what policy tools could maximize their benefit to the environment and to the consumer; and what fuel-agnostic approaches are suitable for characterizing these technologies.

Session G3: Hydrogen on the Horizon

Hydrogen and synthetic fuels could play a necessary role in decarbonizing many industries, transportation, and even buildings. What are the technical, economic and policy advances required to enable the hydrogen and synthetic fuel pathways for decarbonized electricity?

10:30 AM – 12:00 PM

Session A4: Customer Panel — Adoption of Electric Vehicles at Scale

Electric vehicle adoption will only move at the speed of the customer. Please join an engaging, enlightening panel of electric vehicle experts, enthusiasts, and journalists to discuss — from the customer perspective — the key issues of the day.

Session B4: “Smart” is the Word of the Hour — Let’s Talk Smart Homes, Smart Buildings and Smart Communities

Low cost sensors, improvements in connectivity and advanced data analytics are enabling smart homes and neighborhoods across the globe. However, the critical opportunity to truly harmonize customer system automation — ensuring comfort, convenience and control — with the opportunity to leverage these communities as a grid resource to enable efficient electrification. Panelists will discuss learnings from previous demonstrations that can enable smart, efficient, electrified communities at scale.

Session C4: Electric Heating at Scale

‘Industry 4.0’ describes a fourth revolution in manufacturing, driven by connected devices, artificial intelligence and robotic automation. Electric heating technologies offer distinct advantages in the integration of process sensors, feedback and control that can greatly enhance process productivity, quality and reliability. Panelists for this session will explore the role of electric process technologies in delivering on the promise of ‘Industry 4.0.’

Session D4: Addressing the Power Quality Impacts of a Renewable and Electrified Economy

The rise of local distributed energy resources in tandem with increasingly electrified end use can create power quality issues that impact critical processes. This session will discuss how both utilities and customers can work together to mitigate these issues.

Session E4: Ecosystem and Environmental Impacts and Benefits of Electrification

Electrification can have both local and global environmental impacts and benefits. This session explores the sometimes contradictory literature and statements surrounding electrification environmental impacts on air, land and water resources.

Session F4: Realizing the Full Value of Flexible Electric Loads

This session will explore policy and pricing mechanisms that could leverage the full value of electrification technologies in a way that contributes to a sustainable, resilient, and affordable grid. Panelists will also discuss opportunities for increased efficiencies between wholesale and retail markets including what actions could be incentivized to support grid flexibility.

Session G4: The Future of Cost-Effective Low-Carbon Resources

Enormous projected surpluses of low cost, renewable or other low-carbon electricity have laid the ground work for serious consideration of low-carbon resources — ammonia, synthetic and electro-fuels that can address gaps in our national and global decarbonization portfolios. How close are these resources to the scale and cost-effectiveness required to contribute to mid- and long-term carbon targets?

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Session A5: EVs for Work and Play: Jeeps, Pickups, Tractors, Motorcycles, ATVs

Beyond the rapidly expanding lineups of plug-in electric cars, buses, and trucks lies a universe of applications — maritime, aviation, agriculture, mining, construction and others that are increasingly unlocked as battery and electric drive system costs fall and performance increases.

Session B5: Applicability of Ground-Source Heat Pumps to Electrify Residential and Commercial Space Heating in the U.S.

Geothermal heat pumps eliminate drops in efficiency and heating capacity at lower ambient temperatures that are associated with air source heat pumps. They continue to provide efficient heating even in cold climates without use of inefficient resistance heat, reducing heating costs and electricity demand on the grid.

Session C5: Water Treatment: Plants and Processes

Water and waste water treatment systems eliminate biological and chemical hazards. The tie between production and use of water and energy resources drives application of advanced electric technologies for the efficient use and conservation of both. Panelists will explore their deployment and technical/economic challenges.

Session D5: Resiliency in an Era of Increasing Electrification

Customers, communities, and economies with a greater level of electrification will require increased reliability, resiliency, and redundancy from their electric service providers. This panel will discuss critical issues for supporting electrified fleets and facilities.

Session E5: Meeting Long-Term Environmental Goals with Electric Technologies at Scale

Electrification across the economy is projected to play a central role in meeting long-term environmental goals. This session will discuss what an energy system that is 50% electric could look like, identify hard-to-electrify end-uses and discuss strategies for further environmental gains.

Session F5: Role of Electrification in Meeting Customer and Community Sustainability Goals

Customers and communities are leading the charge when it comes to increasing their adoption of clean energy and electrification technologies to support their sustainability goals, reduce costs, and improve the health, safety, productivity, and convenience of their constituents. This panel will feature case studies of customers and communities that invested in electrification programs to meet sustainability goals and will share insights on the role of policy and regulation in realizing the full value of their investments.

Session G5: Innovative Customer Programs

What is the role of innovation in accelerating adoption? Can new technologies and business models overcome customer reticence or uncertainty and lead to rapid changes in adoption of new technologies? Bring your ideas to discuss with our panel of thought leaders.