

7:00 AM - 8:00 AM Continental Breakfast in the Exhibit Hall

8:00 AM - 10:00 AM Opening Plenary Session

10:00 AM - 10:30 AM Morning Break in the Exhibit Hall

10:30 AM - 12:00 PM Breakout Sessions*

Track A: Electric Transportation

Session A1: Setting the Stage – Understanding the Potential for Electrification of Transportation

A discussion of the status of worldwide electric vehicle markets, OEM production programs, charging infrastructure readiness, and near-term vehicle and infrastructure technologies.

Track B: Industrial Electrification – Technologies and Implementation

Session B1: Industrial Process Heating

Infrared heating, induction melting and other electric process heating technologies for greater control and productivity, with lower emissions and cost. Waste heat recovery and industrial scale heat pump technology.

Track C: Residential and Commercial Electric Technologies

Session C1: Advanced Heat Pump Technology for Homes and Businesses

Advances in heat pump technology—cold-climate performance, efficiency, and connectivity—are driving new applications over a broader geographical area. This session will build an understanding of near-term technologies and their applications, while discussing how to achieve still higher levels of heat pump performance.

Track D: Understanding the Costs and Benefits of Electrification

Session D1: Understanding the Costs and Benefits of Electrification

A high-level discussion of the benefits, impacts, and challenges inherent in moving toward a more highly electrified economy.

Track E: The Policy and Regulatory Landscape for Electrification

Session E1: The Big Picture: Key Policy Considerations for Electrification

Key policy issues affecting electrification include understanding the costs and benefits of electric technologies, aligning policy goals with grid requirements, and removing barriers to customer adoption. Can electrification provide a pathway toward an efficient, reliable, affordable, and environmentally-responsible future? What actions need to be taken in the near-term to advance a more efficient, electrified future?

12:00 PM - 1:30 PM Lunch in the Exhibit Hall

1:30 PM - 3:00 PM Breakout Sessions*

Session A2: Light-Duty Plug-In Electric Vehicles – Where is the Tipping Point?

Technologies and production programs driving battery electric vehicle (BEV) and plug-in hybrid electric vehicle (PHEV) passenger vehicle evolution. Discussion of the cost and performance improvements occurring in PEV technology and their impact on customer adoption.

Session B2: Advancing Agriculture and Food Production with Electricity

Electrical cooling/heating, sensors and controls can offer increased precision and productivity to many processes. What is the potential to improve agricultural and food production processes? Can food safety be improved?

Session C2: The Future of Water Heating

Advanced heat pump technology is also improving the efficiency and flexibility of water heating. Flexible water heating may be one of the most cost effective ways to support the grid while still meeting customer needs. Learn about existing systems and the requirements of future applications.

Session D2: Developing New Models of Cost-Benefit Assessment

The benefits and impacts of electrification cannot be fully accounted for with existing CBA methods. Emissions, air and water quality, customer productivity, and grid flexibility are just a few unique aspects of a new electric technology. Join the discussion and review proposed methods for CBA of electric technologies.

Session E2: Challenges and Opportunities of Bringing on New, Flexible Loads

There are both challenges and opportunities associated with adding new, flexible loads onto the grid. What flexibility attributes are needed, and can we add new devices to the grid in a way that optimizes existing assets? What policy incentives—including pricing—are needed to properly incentivize flexible demand? How can electrification programs be designed to complement other preferred resources such as energy efficiency?

3:00 PM - 3:30 PM Afternoon Break in the Exhibit Hall

3:30 PM - 5:00 PM Breakout Sessions*

Session A3: Medium and Heavy-Duty Plug-In Electric Vehicles

The rapid evolution of BEV technology for transit buses has already made significant inroads on a traditional heavy duty vehicle fleet market. Is this an indication of future disruption in medium and heavy duty trucking applications? Is the technology limited to urban routes or are longer range applications also in play?

Session B3: The Promise and Potential of Indoor Agriculture

Indoor agriculture is a rapidly emerging, electricity-intensive technology featuring a highly controlled growing environment. These systems offer the potential to highly distribute produce and other kinds of food production close to demand.

Session C3: Advanced Energy Communities – Understanding Integrated, Connected and Electrified Developments

Zero Net Energy (ZNE) neighborhoods are one example of Advanced Energy Communities—collections of residences or buildings that integrate distribution generation, energy efficiency, and connected appliances and equipment.

Session D3: Country-Level Electrification Analysis

There are a number of efforts in the U.S. and internationally to assess long-term scenarios of increased electrification of end-use and their impact on global greenhouse gas reduction, air quality, and societal economics. This session will review key studies while recapping Monday's roundtable on Electrification Modeling.

Session E3: Charging Ahead: Preparing for Mass Adoption of Electric Vehicles

Widespread adoption of electric vehicles is gaining worldwide momentum. This session will explore the policy issues surrounding mass adoption of electric vehicles, their role in reducing greenhouse gas emissions, and how to deploy and optimize charging infrastructure to benefit both customers and the grid.

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Track A: Electric Transportation

Session A4: Meeting Current and Future Infrastructure Requirements

Are infrastructure deployments keeping pace with adoption of PEVs by consumers and fleets? Have viable business models emerged?

Track B: Industrial Electrification – Technologies and Implementation

Session B4: Strategies for Industrial Customer Engagement

Utilities strategies and programs to support industrial customers. Economic development as a tool to attract and support new customers. Tools and incentives to support electric technologies.

Track C: Residential and Commercial Electric Technologies

Session C4: Fulfilling the Potential of Customer Connected Devices

Connectivity is at the heart of achieving customer flexibility to support the electric grid as electrification of end use increases. While practically all new consumer energy devices offer some form of connectivity, this is only the first step to achieving integrated systems of devices that can reliably deliver grid benefits while always meeting customer requirements.

Track D: Understanding the Costs and Benefits of Electrification

Session D4: Local and Utility Electrification Assessments

Driving electrification assessments down to the local (state, department, provincial, municipal) or even utility level is a key step to enable the implementation of policies and programs to drive adoption and capture benefits. This session will discuss a few of the key studies and describe methods that are applicable to a participant's locale.

Track E: The Policy and Regulatory Landscape for Electrification

Session E4: Accommodating Electrification: Challenges with Measurement and Cost Tests

Electrification programs may require a new look at measurement and cost tests. New tests are needed to allow for comparison of different fuels that provide the same service and emissions savings; and how to design efficient electrification programs in a way that does not discourage traditional energy efficiency.

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Session A5: Charging Time is the New Horsepower – The Role of DC Fast Charging

DC fast charging began life as a 50 kW option for 80-mile range BEVs. It has now reached 500 kW for heavy duty vehicles and the light-duty roadmap is 350 kW by 2020. What are the standards, technologies, and other approaches necessary to support widespread deployment at these—and possibly greater—power levels?

Session B5: Electrification of Multi-Modal Terminals

Sea and air ports are under tremendous pressure to reduce emissions while keeping costs low. Non-road electric transportation technologies—cranes, lift trucks, yard tractors, ground support equipment, electric rail, and idle reduction are key to accomplishing these objectives.

Session C5: Community and Campus Electrification – Universities, Military Bases, and Planned Developments

Military bases, university and other campuses are often at the forefront of integrating new technologies. This session will feature leading examples of campus and bases electrification efforts that include on-site distributed generation, combined heat and power, energy storage, and connected devices.

Session D5: Air Quality Impacts

Electrification, in transportation, industrial, and other applications, is often relied on to address persistent air quality problems, particularly in urban areas.

Track F: Grid Modernization for an Electrified Economy

Session F1: Transmission and Distribution Planning for Economy-wide Electrification

Electrification has the potential to add new, significant load shapes to a transmission and distribution system that already must evolve to incorporate a high level of intermittent renewable generation. How will planners adapt these systems as electricity's share of end use energy consumption increases?

12:00 PM - 1:30 PM Lunch in the Exhibit Hall

1:30 PM - 3:00 PM Breakout Sessions*

Session A6: Driving Adoption – Understanding the Present and Future Electric Vehicle Customer

As both the number and volume of production PEVs increases dramatically, will customer adoption keep pace? What do vehicle manufacturers and other stakeholders need to accomplish to ensure robust consumer and fleet interest in electric vehicle options?

Session B6: Water Treatment Technologies

Electrically produced ozone, membrane separation, ultraviolet light, and electrochemical oxidation are safe and cost-effective options for water treatment, reuse, and purification. This session will discuss commercially available options and customer cost-effectiveness.

Session C6: Understanding Residential and Commercial Customers

Customer and dealer education are both critical aspects of improving the adoption of efficient, electric technologies, whether in new or existing buildings. Customers are also more likely to persistently participate in programs that support the grid and therefore offer value to all utility customers if their requirements are reliably met.

Session D6: The Water-Energy Nexus

Water is a complex issue in the world of electrification requiring a detailed analysis of water usage stemming from both energy production and usage. Understanding water use ramifications early on in a cost-benefit assessment can help in prioritizing electrification programs.

Session F2: System Integration of New Electric Technologies

Electric vehicles and other electric technologies offer the promise of unprecedented flexibility in serving both customers and localized regions of the grid. However, how do utilities plan to account for potentially higher peak loads if customers increasingly rely on electricity for heating and transportation?

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Track A: Electric Transportation

Session A7: Breakthrough Technologies – What are the Limits of Vehicle Electrification?

The continued evolution of Lithium-Ion is the single most important driver of vehicle electrification. How far can Li-Ion and future chemistries support new applications in long-distance on-road, rail, maritime, and aviation? What other vehicle or infrastructure technologies can make a similar impact?

Track B: Industrial Electrification – Technologies and Implementation

Session B7: Breakthrough Technologies – Industrial Game Changers

What are the customer and societal benefits of renewable hydrogen at scale? Technology advances that lead to market dominance by additive manufacturing, indoor agriculture, or electrochemical synthesis could reshape entire industries. Understand the challenges and potential of each of these industrial applications.

Track C: Residential and Commercial Electric Technologies

Session C7: Breakthrough Technologies – The Building of the Future

How do major advances in electric technologies impact residential housing and commercial buildings—both current stock and new construction? How do we integrate extreme energy efficiency, distributed generation, connectivity, and the next generation of heating, cooling, lighting, and transportation technologies to create the next generation of advanced buildings?

Track E: The Policy and Regulatory Landscape for Electrification

Session E5: Electrification: The Key to Unlocking Smart Communities?

This session will explore the connection between electrification and smart communities including how electrification could enable additional benefits of smart communities; equity and subsidy issues associated with electrification and smart community investment; data access and privacy; maximizing efficiencies of existing systems; and the role of connected customers and their impacts on the grid.

Track F: Grid Modernization for an Electrified Economy

Session F3: Beyond the Meter – Customer Infrastructure to Support the Next Generation of Electric Technologies

Customer side infrastructure is a critical aspect to support the adoption of electric vehicles and other electric technologies. What are the best practices to both help the customer prepare and to remove barriers to adoption?

10:00 AM - 10:30 AM Morning Break

10:30 AM - 12:00 PM Closing Plenary Session

12:00 PM - 4:00 PM Post-Conference Tours
