



## 2023 Track Themes and Topics

### Decarbonization

Climate change and the need to find cleaner, carbon-free sources of energy are driving both short- and long-term decisions in the generation sector. This track focuses on the latest regulations and incentives, resource planning strategies, net-zero carbon emission goals, as well as carbon capture reduction technologies and solutions. Zero-carbon generation sources like nuclear and renewables also will be a focus.

- Environmental regulations
- Carbon costs/taxes
- Carbon capture and storage (CCUS)
- Gas-fired emissions reduction
- Nuclear power's future and small modular reactors
- Utility-scale solar and wind

### The Electric Future

Large parts of the economy are shifting from fossil fuels to electricity as they move to cut carbon emissions. But how flexible and adaptable are existing utility business models and generating resources to help drive the emerging electric future? What lessons can be learned from disrupters? What advantages do incumbent players possess that can be leveraged to drive further electrification? This mega-session offers a broad perspective, from flexible generation to innovative market development tactics to regulatory reform and policy advancements.

Topics include:

- The next level in power generation economics
- Regulatory events and compliance challenges
- Revenue opportunities
- Power generation interconnection
- Integrating into the bulk power system
- Inverter technologies
- Microgrids

### Unlocking Hydrogen's Power Potential



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Hydrogen as a fuel for electricity generation or a way to store energy is no longer the “fuel of the future” but is now integral in a decarbonized future. But challenges remain to deploy technologies that can readily accommodate 100% hydrogen combustion in large-scale applications. This track showcases not only hydrogen hubs to support hydrogen’s use in large-scale industrial and power applications, but also the technical challenges from combustors to balance of plant modifications that need to be solved.

Topics include:

- Hydrogen-powered turbines
- Balance of plant considerations
- Electrolysis and fuel cell technologies
- Hydrogen storage
- Modeling and financing

### Energy Storage Deployments

Much of the talk has focused on short-duration lithium-ion batteries. But long-duration storage using technologies such as compressed air energy systems, pumped hydro and a host of novel ideas are being championed and deployed. This track focuses on the growing adoption of storage technologies, their ability to replace fossil-fueled sources of generation, operational challenges, and pathways to their ongoing adoption.

Topics include:

- Utility-scale case studies and applications
- Integration challenges
- Non-battery storage solutions
- Safe operations and best practices
- System financing and viability
- Hybrid power plants

### The Next-Generation Power Plant

Control room digitalization is everywhere and rapid advances in sensors, control systems, data visualization tools, and artificial intelligence are driving efficiency from existing operations and enabling greater flexibility and insight into machine health. In this track, experts showcase the latest



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technologies that detail power plant and equipment performance to enhance decision-making and ensure that existing generating assets remain viable. Educational sessions will include the following topics:

- Digital twins
- Industrial Internet of Things
- Data analytics
- Artificial Intelligence/augmented reality
- Sensors
- Software solutions
- Cybersecurity
- Controls and communication

### Optimizing Plant Performance

Many conventional power plants have years of life left in them. To compete, however, plant owners and operators must manage their assets wisely and optimize operations and maintenance with the latest processes and solutions, including a highly trained and adaptive workforce.

Topics in this track include:

- Workforce challenges and safety
- Case studies on the impact of equipment upgrades
- Best practices for gas-fired, nuclear and coal-fired plants
- Combined cycle, HRSGs.
- Boilers
- Cooling towers
- Control room
- New technologies for plant O&M
- Life cycle management
- Plant retirement strategies

### Nuclear's Small Revolution

Small modular reactors and microreactors offer multiple benefits: emission-free, baseload generation that can be sited close to demand centers and help drive decarbonization goals. This mega-session



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offers updates on SMR deployment plans, cost projections, and the status of rapidly evolving public policy support for the technology.

Topics include:

- Small Modular Reactors (SMRs) and advanced reactor technologies
- State and federal policy support
- SMR economics and viability

### **Environmental and Emission Controls**

A range of existing and enhanced environmental rules at both the state and federal levels impact power plant operations, and carbon capture and sequestration technologies are gaining new attention as a possible path toward achieving carbon reduction goals. This workshop focuses on attainment goals, operational strategies to remain in compliance even as non-point-source air challenges increase, and the current status of CCS technology adoption and deployment.

Topics include:

- Carbon capture and sequestration (CCS) adoption and deployment
- CCS financing
- Direct air capture
- Regulatory issues
- Emission standards for plants
- Carbon pricing