**Decarbonization**

Climate change and the need to find cleaner, carbon-free sources of energy are driving decisions in the generation sector. Power generators must include current and potentially new climate-led regulations and laws when planning for the future. This track will contain information on regulations, resource planning, carbon credits or taxes, net-zero carbon emission goals, as well as carbon capture reduction technologies and solutions.

* Climate change
* Environmental regulations
* Carbon costs/taxes
* Carbon credits
* 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 such as transportation are shifting from fossil fuels to electricity as they move to cut carbon emissions. With this broader electrification come a host of new players to complement and—sometimes—challenge existing power generators with innovative business models. How flexible and adaptable are existing utility business models and power resources to help drive the emerging electric future? What lessons can be learned from disrupters and what advantages do incumbent players possess that can be leveraged to drive further electrification and leadership role in the electric future? Presenters in this mega-session offer a broad perspective, from flexible generation to innovative market development tactics to regulatory reform and policy advancements.

**Unlocking Hydrogen’s Power Potential**

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. Its use in turbines alongside natural gas is well known. But challenges remain to developing technology that can readily shift to 100% hydrogen combustion. This track showcases not only the emerging development of hubs to support hydrogen’s use in large-scale industrial and power applications, but also the technical challenges that need to be rapidly solved.

**Energy Storage Deployments**

Energy storage is gaining a solid reputation as a technology that can solve a wide of problems; everything from renewable resource integration to peak demand support and other ancillary services such as spinning reserves and black-start capabilities. Much of the talk has focused on short-duration lithium-ion batteries, but long-duration storage using not only batteries but also compressed air energy systems, pumped hydro and a host of novel ideas are being championed and deployed. This track focuses on the growing stability of storage technologies, their ability to replace fossil-fueled sources of generation, and pathways to their ongoing adoption.

**The Next-Generation Power Plant**

Control room digitalization is everywhere and rapid advances in sensors, control systems, data visualization tools, and artificial intelligence are now opening new ways of driving efficiency from existing operations and enabling even more flexibility and insight into machine health.  In this track, experts will showcase the latest technologies that share insight into the performance of plants and equipment to enhance decision-making. 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

**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. Not only that, but the Biden Administration has pointed to nuclear energy as a major part of its decarbonization strategy and is investing billions in new reactor technologies to preserve the nation’s current fleet. This mega-session offers updates on SMR deployment plans, cost projections, and the status of long-term public policy support for the technology.

**Environmental and Emission Controls**

 Clean Air Act rules remain in place and in some cases are being strengthened by environmental regulators. At the same time, carbon capture and sequestration are reemerging as a possible path forward 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.