



2025 Summer Study on Energy Efficiency in Industry

Track Description: 2. Technology and Operations

The industrial energy manager's influence on corporate priorities has expanded from lowering utility costs to including resource efficiency, electric reliability improvements, and now the process itself. Energy-efficient operations are just one consideration. Now, as important are coincident peak load management and demand response, adoption of on-site generation, and emerging energy storage technologies. With these new technological tools come new interests such as process heating innovations, hydrogen-fueled processes, and hosting electric vehicle charging for employees and fleet vehicles.

Underlying this rapidly changing landscape is a nagging doubt: Do we even know how to implement long-term energy solutions for industry effectively? How is industry to make massive capital investment bets today, accounting for unknown technology innovations to come, let alone the geopolitical risks of energy resources we know? If that's not enough, managers have to consider new questions as to how these technologies modify the process flow, work with the manufacturing floor layout, and ensure safe operations.

The topics we will cover include:

- Investments and activities inside the fence line to reduce energy use
- Investments in grid-edge technologies
- Control systems
- Eliminating operational waste
- Process improvements or six sigma
- Emerging advanced material and manufacturing technologies
- Digital manufacturing process solutions
- Innovations in process heat application
- Advanced resource management strategies
- Industrial fuels, including hydrogen applications.
- Industrial microgrid examples and potential
- Corporate trends, goals, and management practices regarding fuel and energy resource preferences
- Strategies for optimizing energy resources in industrial operations