Fueling the AI Boom and Manufacturing Renaissance: Power Sector Constraints & Solutions

January 16, 2025 | Conference Center at 25 Massachusetts Ave NW, Washington, DC
Workshop: 8:30am-5:00pm | Lunch Keynote: 12:30pm-1:30pm | Reception: 5:00pm-7:00pm

Power Demand Scenarios
As energy-intensive artificial intelligence (AI) and onshoring activities ramp up in the U.S., understanding power demand trajectories and related uncertainties has never been more important. Some suggest existing power models vastly underestimate key challenges like accelerating power plant retirements that could threaten grid reliability and drive up costs. This panel will provide insights about data centers and the ongoing manufacturing renaissance and examine cost pressures, reliability concerns, and power demand and supply scenarios. Is the US grid prepared to ensure affordable, resilient energy delivery as demand grows?

Regulatory Risk and Regulatory Reform, Addressing Cost and Reliability Issues
With innovative but complex market designs and arrangements (e.g., colocation), the evolving energy sector faces heightened regulatory uncertainty and, understandably, growing pressures for reform. This panel explores how regulators can balance mitigating risks while still encouraging innovation and cost savings. Are current regulatory frameworks equipped to address these challenges, or is transformative reform necessary?

Increasing Near-Term Power Generation
Meeting rapid growth in power load poses important questions about U.S. energy mix and capacity expansion. Despite growing interest in renewables and nuclear power, natural gas remains the most critical energy source to meet incremental demand in the near to medium term. This panel will discuss pathways to scale power generation quickly through a range of fuel sources, particularly natural gas. Can policymakers and the industry work together to find an optimal solution?

What Should Congress, FERC, and the New Administration Do Now?
With a transition in federal leadership, the energy sector faces an inflection point and calls for substantive policy and action from Congress, FERC, and the incoming Trump administration. This panel will examine immediate as well as long-term priorities for the country's leadership to address the energy trilemma--energy security/reliability, affordability/cost, and sustainability—in the power sector. What should be at the top of the agenda and what are the most realistic solutions?

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Recommended Readings

Energy Policy Research Foundation. Power Vision 2030: Electricity Demand Virtual Workshop presenta- tions. (link)

Energy Policy Research Foundation. Summary of Power Vision 2030: Electricity Supply Virtual Workshop. (link)

Loyola, M., Dayaratna, K. D., & Weiss, A. (2024, October 23). Why electricity prices are soaring in blue states. The Heritage Foundation. (link)

Nakano, J., & Majkut, J. (2024, September 10). Strategic Equilibrium: The United States' Manufacturing Resurgence and the Role of Natural Gas in a CarbonCompetitive World. Center for Strategic and International Studies. (link)

Difiglio, C. (2024). Plenary Session Summary: The Power Market and the Energy Transition. International Seminars on Planetary Emergencies, 56th Session, Erice. Energy Policy Research Foundation, Inc. (link)

Electric Power Research Institute. (2024, October 30). Data Center Load Growth and Emissions Impacts: Modeling and Analysis. (link)

Governors of Pennsylvania, Illinois, Maryland, New Jersey, and Delaware. (2024, October 25). Letter to PJM Board of Managers and President & CEO Regarding Capacity Auctions. PJM Interconnection. (link)

Interview of former Chairman of FERC James Danly on the central regulatory challenges facing the US power sector. (link to video)

Federal Energy Regulatory Commission. Docket No. AD24-11-000. Commissioner-led Technical Conference Regarding Large Loads Co-Located at Generating Facilities. (link)