Keeping the Lights On: the Future of Electricity and Electric Grids

• Introduce the need for grid security and repercussions if the lights go out
  • ERCOT resources are changing but has good plans in place to adapt to those changes

• DOE/White House plan to support coal plants and nuclear plants
  • At the level of the U.S. grid, resilience is mostly a problem with the transmission and distribution networks rather than with the mix of generation resources
  • Retiring coal and nuclear plants are old, inflexible and uneconomic and subsidizing them will be expensive and make the grid LESS reliable
  • At the ERCOT level, should we be worried? Does the market-based approach to balancing the grid impact resiliency? Does ERCOT have any lessons to share?
    • In ERCOT, the competitive market has made the electric system more reliable and lower cost; no problems to date from shutting down coal plants, we continually assess changes in tools and market to adapt to the changing resource mix

• Future grid issues
  • Increasing stress on grid from climate change (extreme weather, higher demand)
  • Cybersecurity a significant threat to grid operation
  • Increasing renewables & distributed generation can be managed given time, money and willingness