

# The Evolution of Competitive Power Markets

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The transformation of the electric power industry from a vertically integrated monopoly business to a competitive industry has been slow, with numerous debates on technical and policy issues. These debates have involved questions dealing with the details of spot market rules, incentives for infrastructure investment, management of seams issues, market monitoring and mitigation, and, in some cases, the very premise of competition. The range of opinions in answering these questions can vary. For example, significant experience has been gained in existing markets to reach a comfort level on what constitutes an efficient design for a spot market. On the other hand, there may be less agreement on long-term investment issues where the proposed constructs are largely theoretical and remain to be fully tested.

The recent power outage in the Midwest and Northeast has only intensified this debate on the evolution of the power industry. For example, some critics of markets argue that increased commercial transactions across long distances can impose greater burdens on the power grid making it less reliable. Others point out that the power outage only proves the fundamentally interconnected nature of the power grid and why it is critical to continue efforts to establish a uniform set of rules with enforceable reliability standards across the system. This effort has been characterized as the Standard Market Design (SMD) initiative and requires the creation of organized markets operated by independent entities called Regional Transmission Organizations (RTOs). In this talk we review the current state of competitive power markets in North America and discuss lessons that recent events might offer.

## **Keywords:**

*Power markets:* Markets for buying and selling electricity where prices are set by bids and offers submitted by buyers and sellers. Power markets can be forward markets involving future delivery or spot markets involving immediate physical delivery. Trading in power markets can be done through centralized exchanges or bilaterally.

*RTO:* Regional Transmission Organization or RTOs are independent entities responsible for operating the transmission grid by performing a required set of functions such as operating day-ahead and real-time balancing markets, managing transmission congestion, and ensuring the availability of sufficient reserves and other ancillary services required for reliability.

*SMD:* Standard Market Design, a proposal to standardize the rules of power markets operated by RTOs.