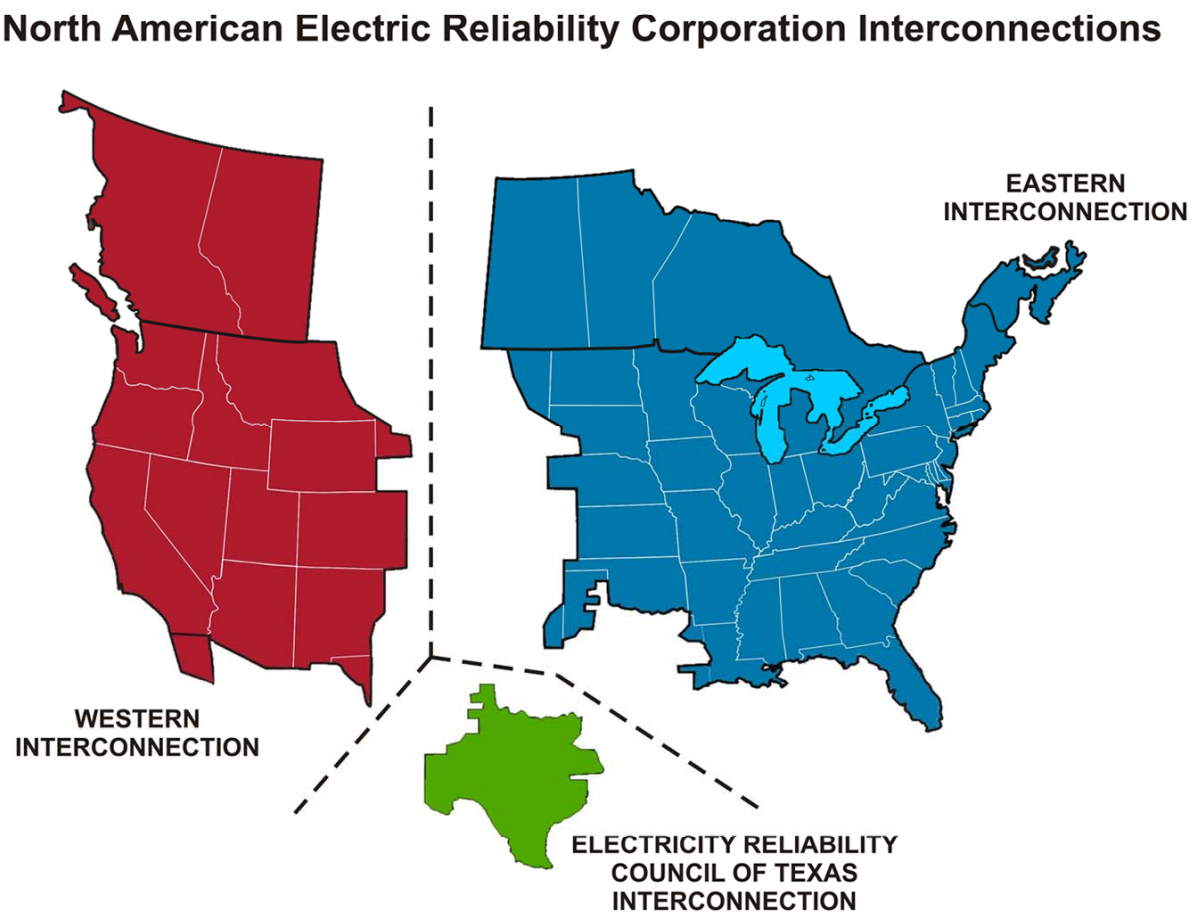
NEW YORK STATE Public Service Commission

Regional Electricity Market Initiatives in the United States

Thomas Dvorsky
Director, Office of Electric, Gas and Water
New York State Department of Public Service
June 8, 2010 2:15 p.m. Panel

The U.S. High Voltage Grid



Role of Regulators

- To further improve the reliability, efficiency, and cost-effectiveness of Regional Electric Markets
- To assist consumers in obtaining reliable, efficient and sustainable energy services at a reasonable cost through appropriate regulatory and market means

Independent System Operators (ISO) and Regional Transmission Operators (RTO)

- An ISO / RTO is responsible for operating the bulk electricity grid, administering competitive wholesale electricity markets, conducting long-term planning of the electric power system
- Within the 3 U.S. interconnections there are 7 major ISO/RTO's
  - NYISO (New York ISO)
  - CAISO (California ISO)
  - ERCOT (Electric Reliability Council of Texas)
  - MISO (Midwest Independent Transmission System Operator)
  - ISO-NE (ISO New England)
  - PJM (Pennsylvania, New Jersey, Maryland)
  - SPP (Southwest Power Pool)
- Areas in the Northwest, Southeast, and Southwest do not have ISO/RTO's

Differences Among Regional Markets

- Each region has a unique physical landscape with its own attributes/deficiencies and specific energy needs
- Costs can vary substantially among different regions
- Contract specifications vary from region to region
- Governing systems differ by entity

Benefits of Enhanced Regional Trading

- Lower costs for companies and ultimately consumers
  - More efficient power flows
    - Reduces needs for generating facilities
    - Increases system reliability
  - Larger electricity markets with increased competition
    - More cost effective dispatch
    - Enhanced trading flexibility and choices
- Environmental benefits from taking advantage of wind power and other renewable resources

Obstacles to Enhancing Regional Trading

- Implementation costs
- Each region has developed its own unique system to address its specific needs/concerns
  - Interregional issues have taken a back seat
- Potentially uneven sharing of benefits
  - Regional winners and losers

What are Seams Issues?

- *Seams Issues are barriers and inefficiencies resulting from equipment limitations, different market rules and designs, operating and scheduling protocols, and other control area practices which inhibit or preclude the ability to transact capacity and energy across control area boundaries*

Examples of Seams Issues

- Spatial Seams
  - Visibility of current and anticipated system conditions such as availability of transmission capacity, costs of congestion, and other potential limiting factors
- Temporal Seams
  - Differences between control areas with regard to the frequency by which transactions may be scheduled, the timing of bid submissions and the schedule by which bids are evaluated
- Administrative Seams
  - Includes all manner of administrative rules and requirements regarding the form in which bids are submitted, eligibility requirements, collateral requirements, etc.

Impacts of Reducing Seams

- Efficiency (Market liquidity)
  - Transaction flexibility
  - Price certainty
  - Ability to manage risk
  - Market confidence
- Effectiveness (Market optimization)
  - Create appropriate price signals
  - Reduce gaming opportunities
  - Increase transactions

Initiatives to Improve Regional Electricity Markets

- Broader Regional Markets
- RTO/ISO Performance Metrics

Broader Regional Markets - Example

- The Eastern Wind Integration and Transmission Study (EWITS)
- Included Wind Resource Modeling, Transmission Analysis and Integration Analysis
- Initiated in 2008 to examine the operational impact of up to 20-30% energy penetration of wind on the power system in the Eastern Interconnect
- Answers questions that utilities, RTOs and ISOs had about wind energy and transmission development in the east.
- Study published in January 2010, available at: http://www.nrel.gov/wind/systemsintegration/pdfs/2010/ewits_final_report.pdf

RTO/ISO Performance Metrics

- FERC will work with RTO and ISO stakeholders to develop standardized measures that track the performance of RTO/ISO operations and markets and report results to United States Congress and the public annually.
  - Report will include the measures and reported performance and what changes need to be made to address performance concerns

Proposed Performance Metric Topics

- 14 Common performance metrics topics on which *all ISO/RTO's will report*
  - *6 Reliability metrics*
  - *5 Performance metrics*
  - *3 Organizational Effectiveness metrics*

Reliability Metrics

- National or Regional Reliability Standards Compliance
- Dispatch Reliability
- Operational Planning-Load Forecast Accuracy
- Long-Term Reliability Planning-Transmission
- Long-Term Planning Generation
- Transmission Outage Coordination

Performance and Organizational Effectiveness Metrics

- Performance Metrics
  - Market Pricing
  - Generator Availability
  - Congestion Management
  - Demand Response
  - Renewables
- Organizational Effectiveness Metrics
  - Administrative Costs
  - Customer Satisfaction
  - Billing Controls