



Electric Market Seams: Barriers to Competitive Trade Between Northeastern Regional Electric Markets

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Historical Formation of the Current Regional Transmission Organizations and Electric Markets

Over the last decade regional electric markets have been restructured throughout the Northeast at both the wholesale and retail levels. Prior to this time both public and investor owned utilities ("IOUs") were vertically integrated and owned generation, transmission and distribution facilities. Regional dispatch and operation of these facilities was coordinated through regional power pools that were controlled by the utilities in each region. In New York there was the New York Power Pool (NYPP), New England facilitated coordination through the New England Power Pool (NEPOOL), and the states to the west of New York under the Pennsylvania, Jersey, Maryland Interconnection (PJM).

In 1996, the Federal Energy Regulatory Commission ("FERC") issued Order No. 888 which required FERC regulate utilities (particularly private IOUs) that own transmission to provide open access transmission to all eligible customers. One part of this order encouraged transmission owning utilities to form Independent System Operators ("ISOs") that would independently operate the transmission grid under its own tariff while transmission remained under the ownership of the utilities. The governance of these ISOs would be through independent boards of directors. The utility controlled power pools in the Northeast led the effort to voluntarily form Independent System Operators that essentially followed the regional boundaries of their utility member service territories. In 1999 the operational control of the transmission system was shifted to the New York System Operator ("NYISO") from the New York Power Pool and at the same time the NYISO launched competitive bid-based markets for energy, capacity and ancillary services. Similarly, the Independent System Operator of New England ("ISO-NE") was formed and the PJM Interconnection also became an ISO.

FERC Encourages the Formation of Regional Transmission Organizations

Almost four years after issuing Order 888 on December 20, 1999, FERC issued Order No.2000 encouraging the development of Regional Transmission Organizations ("RTOs"). Order No. 2000 established certain minimum characteristics an RTO must meet and functions an RTO must provide. Order No. 2000 required jurisdictional transmission entities to file with the FERC a proposal to either participate in an RTO or, in the case of an independent transmission system operator (such as the NYISO), address the extent to which

such ISO conforms to the minimum functions and characteristics of an RTO. The NYISO and its member New York Transmission Owners on January 16, 2001 made a compliance filing in accordance with the Commission's Order No. 2000 that proposed how the NYISO could meet the standards of an RTO.

FERC Orders ISOs to Work Together to Merge into a Joint Northeast RTO

FERC issued an order on the NYISO's compliance filing on July 12, 2001. FERC found in its order that the NYISO's compliance filing did not minimally satisfy several of the characteristics and functions set forth in Order No. 2000 which FERC deemed necessary to achieve RTO status. FERC primarily denied the NYISO proposal because its proposed size did not meet the Scope and Regional Configuration Characteristic of Order No. 2000. FERC found that, at a minimum, the Northeast United States constitutes a single region that should not be divided into multiple RTOs. FERC directed the NYISO to negotiate with its neighboring ISO's to form a single Northeast RTO.

In a concurrent ruling on July 12, 2001, FERC ordered all three existing Northeast ISOs and other parties to participate in good faith negotiations to form a single Northeast RTO. FERC directed an administrative law judge (ALJ) to mediate settlement discussions for a 45 day period. On September 17, 2001 following the end of the 45 day period, the FERC ALJ submitted his report. Although there was significant common ground among many market participants, the mediation process was contentious and the final mediation report identified issues and options for the consolidation of the Northeastern ISOs. Consensus was not reached during the process and many outstanding issues remained between the three ISOs and market participants. FERC took no action on the mediation report following its issuance.

Following the mediation process and as a result of the resistance of ISO-NE and NYISO to a Northeast RTO based on the PJM platform, PJM signaled its intentions to focus its growth and consolidation on markets to the west (PJM has since grown significantly by adding utility transmission systems to the west and south). On January 28, 2002, ISO-NE and NYISO entered into an agreement to develop a plan, with stakeholder input, for the creation of a Northeast RTO (NERTO) encompassing New England and New York with a common market design.

On July 31, 2002 FERC issued a Notice of Proposed Rulemaking on Standard Market Design (SMD NOPR). The SMD NOPR was the third in a series of initiatives under taken by FERC, following Order 888 and Order No. 2000. The Commission's objective in this third rulemaking was to remedy remaining undue discrimination and establish a standardized transmission service and wholesale market design that will provide a level playing field for all entities that seek to participate in wholesale markets. Similar to FERC's attempts to create large regional RTOs, such as the Northeast RTO, the SMD NOPR, while well received by many parties, was also controversial. States objected to FERC's attempt to

standardize wholesale market rules and to require Transmission Owners to turn over the control of assets to an Independent Transmission Provider (ITP).

On August 22, 2002, following a brief stakeholder process, ISO-NE and NYISO made the NERTO filing. The New England and New York version of NERTO also faced opposition, including state regulatory authorities. On November 22, 2002, ISO-NE and NYISO jointly announced that they were reluctantly withdrawing the NERTO proposal. In the announcement of NERTO's withdrawal, The ISOs noted that market participants wanted the ISOs to focus on the development of SMD and the resolution of seams issues between the control areas. Removing the uncertainty of the contentious NERTO merger would better allow the ISOs to address these issues.

On April 28, 2003 rather than issuing a final SMD rule, FERC issued a White Paper on the Wholesale Power Market Platform. The White Paper removed the requirement that Transmission Owners join an ITP and adopted a phased-in and adaptable approach to SMD. Federal energy legislation further delayed SMD and FERC later discontinued the initiative. FERC later approved revised proposals for RTOs for PJM and ISO-NE. In approving the RTO for ISO-NE, FERC required ISO-NE to revise its inter-regional agreements with NY and resolve existing seams issues by a date certain. The NYISO decided to remain as an ISO and not continue to seek RTO status.

What are Seams Issues?

Seams issues are barriers to trade between the regional electric markets that exist purely as the result of artificial geographic boundaries and hence would not exist in the Northeast if FERC had been successful in creating one RTO where PJM, NYISO and ISO-NE exist today. Seams issues may explicitly prohibit trade between regions, create an operational or technical difficulty, or increase costs to the extent that otherwise prohibits the economic exchange of energy, capacity or ancillary services. FERC has remained interested in removing market seams between ISOs and RTOs and attempted to resolve them by requiring the updating of inter-regional agreements between the ISOs with milestones for seams resolution. For example FERC required the elimination of rate pancaking (the practice of charging multiple transmission rates for transactions between and through regional markets) between New York and New England in preliminary orders approving the adoption of an RTO for New England and ultimately the NYISO and ISO-NE and their transmission owners agreed to end rate pancaking for through and out transactions between their regions. FERC currently requires the three Northeastern ISO/RTOs to report quarterly on the seams resolution process. LIPA has actively worked with FERC and the individual ISOs in the seams resolution process. However, in many areas the seams resolution process has stagnated and there is little or no forward progress.

What Specific Seams Issues Remain?

While progress has been made on some issues such as Rate Pancaking between New York and New England, a number of other seams issues remain including the following:

1. **Rate pancaking between NYISO and PJM** – PJM has eliminated through and out charges to the west with the Midwest ISO and New York has eliminated the charges with New England but pancaked transmission rates remain between New York and PJM and there are no active ongoing discussions to eliminate rate pancaking between the NYISO and PJM.
2. **Sale of Operating Reserves Between Regions** – While energy transactions can be scheduled between external regions, the Northeast ISO/RTOs do not allow the sale of operating reserves between regions. While there is an abundance of quick start resources (generation that can start within 30 minutes or less) in areas such as Long Island, the market rules and protocols are not in place to allow these resources to be sold into external areas where they may be even more valuable. New England which has had a demonstrated need for additional quick start resources cannot benefit by the availability of resources on Long Island since the ISO/RTOs will not allow inter-regional trade in this valuable ancillary service. There are no active discussions ongoing to resolve this issue.
3. **Separate Unit Commitment and Dispatch** – Generating units are committed and dispatched separately in each ISO/RTO region. Sales between regions occur when individual market participants anticipate economic opportunities between regions and are willing to take the market risk by offering to sell energy from one region into another region. Since prices and schedules are calculated separately in each region often using different methodologies for regional price calculations there is significant market risk and during some hours counterintuitive trades occur where energy is flowing from the lower priced region to the higher priced region. Additionally, regions such as PJM allow schedule changes in 20 minute increments while other markets such as the NYISO only allow hourly schedule changes and thus energy transactions between these regions are limited to the most restrictive requirement or in this case hourly schedule changes.
4. **Long Delays in Allowing Scheduling over Controllable Transmission Facilities Between Regions** – Prior to the creation of the ISO/RTOs in the northeast, regional power pools used to allow the scheduling of transactions over certain transmission facilities such as the 1385 cable interconnecting Long Island with southwest Connecticut. While Long Island and southwest Connecticut are two of the most constrained regions in the northeast the NYISO and ISO-NE discontinued scheduling over this

important facility because their scheduling software systems could not accommodate what was a regular occurrence prior to their existence. After many years of delay the NYISO and ISO-NE are expected to initiate scheduling over this transmission facility in late June 2007.

5. **No Interregional Planning** – While the Northeast ISO/RTOs have made progress on sharing data and assumptions, there is no joint inter-regional planning process in place that considers the economic or reliability benefits of increased interconnections between regions. As a result, the only projects that have occurred between the regions have been merchant projects that must be proposed without all of the information and planning expertise of the ISO/RTOs. Furthermore, new or improved interconnections between areas are not studied to determine if they could be more cost effective solutions than expensive internal upgrades within a region.

6. **Impact of Generator or Transmission Additions in One Region on Neighboring Regions** – Within each region the impact of new generation and transmission additions are studied in part to prevent a negative impact on existing facilities. The coordination of impact analyses for interconnections in one region on facilities in a neighboring region is minimal and does not directly address cost allocation between neighboring areas for system upgrades needed for an interconnection. Historically, new generation interconnections in neighboring regions have contributed to the need for upgrading transmission facilities on Long Island without any means of compensation to Long Island customers for such upgrade costs caused by neighboring parties.

7. **ICAP Market Barriers** – The northeast ISO/RTOs had previously expended significant effort to develop common product definitions and associated market rules for their installed capacity markets (“ICAP”) in order to ensure that ICAP could be traded between regions. More recently, each ISO/RTO has pursued independent paths in revising its own ICAP rules and procedures. The ability to seamlessly sell ICAP between regions has been left as an afterthought at best. Significant new barriers are being erected between the markets as a result of the lack of regional coordination.

What Should be Done to Resolve Remaining Seams Issues?

The restructuring of wholesale electric markets were intended to bring competitive benefits to consumers. Previously, FERC policy has strongly encouraged the development of larger regional markets to ensure that these benefits are more fully realized. The collapse of the discussion to create a larger regional RTO in the northeast has increased the importance of resolving seams

issues. Unfortunately, although FERC created mechanisms to identify and resolve these persistent seams issues through inter-regional agreements, progress has stagnated and in some areas such as the redesign of ICAP markets new seams are now being created. Below are some actions that should be considered in order to effectively resolve seams issues:

1. **Renewed FERC Oversight** – While FERC previously laid the groundwork for the northeast ISO/RTOs to resolve existing seams in a reasonable timeframe, in many areas, this has not been accomplished. The Commission should begin a new effort to document the existing seams, develop milestones for resolution, and provide close oversight until the each seams issue is eliminated.
2. **Prevention of New Seams Issues** – In approving changes to market rules within a region, the Commission should ask as a primary question whether this market rule change improves or detracts from the ability to resolve seams issues. Greater emphasis should be placed upfront to prevent the creation of new seams issues rather than leaving this to the individual ISO/RTO to consider as an afterthought during implementation.
3. **Revisit Geographic Scope of Markets** – Approval of smaller ISO/RTOs was predicated on the ability for these regional markets to effectively resolve the seams issues. The inability to do so continues to raise concerns whether existing ISO/RTOs in the northeast are of sufficient geographic scope to fully capture the benefits of competitive markets for consumers. As part of a FERC review of existing seams issues there should be additional consideration of whether each issue can be better resolved by some broader regional approach.