

Northeast Seams Report

Update on Northeast Seams Issues

January 6, 2010

NYISO Business Issues Committee Meeting



Draft –for Discussion Purposes Only



Broader Regional Markets

| Issue | Description |
|---|--|
| <p>1. Market Solutions to Loop Flow: Buy-Through of Congestion</p> | <ul style="list-style-type: none"> ▪ Unscheduled power flows, particularly around Lake Erie, can negatively impact both electric system reliability and market operations. The NYISO is conducting a comprehensive investigation of transaction scheduling and pricing protocols and incentives in order to assist its efforts to work with PJM, MISO and IESO to develop an alternative long-term solution to address mitigate the market and reliability impacts of unscheduled Lake Erie power flows. The results of this ongoing analysis have been, and will continue to be, shared with stakeholders to facilitate an informed discussion of a viable long term solution for managing loop flow. ▪ Representatives from NYISO, PJM, IESO and MISO met on March 23, 2009 to address the development of solutions to mitigate loop flows. Discussion of the underlying causes of loop flow and the process for sharing data to further the analysis were discussed. ▪ At the August 6, 2009 MIWG meeting, NYISO presented an approach to managing loop flow that would allow for the “Buy-Through of Congestion.” This approach would allow for a market based mechanism for managing loop flows and provide for the recovery of costs associated with loop flows. ▪ NYISO has scheduled a meeting with PJM, MISO and IESO in August to continue discussions on developing long-term remedies to Lake Erie loop flow. Topics for discussion will include the Buy-Through of Congestion and Interregional Transaction Coordination. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Markets

| Issue | Description |
|--|--|
| 1. Market Solutions to Loop Flow: Buy-Through of Congestion <i>(continued)</i> | <ul style="list-style-type: none">▪ At the September 1, 2009 MIWG meeting, NYISO provided an update on the status of efforts to develop solutions to address loop flow. This presentation provides an update on Broader Regional Markets initiatives that are expected to address loop flow. Also included in this presentation is a schedule for the development of these proposals to support a January 2010 filing with FERC. In addition to the September 1 MIWG, this presentation is slated for discussion at the September 9 BIC.▪ The NYISO hosted a joint technical conference on Broader Regional Markets - Solutions to Loop Flows for stakeholders from PJM, IESO, MISO and NYISO markets on October 29, 2009. The meeting focused on the development of Congestion Management and Buy-Through of Congestion protocols. A whitepaper outlining the considerations and potential solutions to loop flow was distributed prior to this meeting. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Markets

| Issue | Description |
|--|---|
| 1. Market Solutions to Loop Flow: Buy-Through of Congestion <i>(continued)</i> | <ul style="list-style-type: none"><li>▪ The Midwest ISO held a second technical conference on Broader Regional Markets – Solutions to Loop Flows on December 15, 2009. Three market based solutions, Buy-Through of Congestion, Congestion Management (Market-to-Market Coordination) and Interregional Transaction Coordination were presented to stakeholders. An updated draft of the white paper was made available to stakeholders. This paper outlines the fundamental power system dynamics responsible for loop flow, previous efforts on the part of utilities, system operators, and reliability coordinators to address loop flows and a discussion of physical phase angle regulator (PAR) and market based solutions. The NYISO plans to file report with FERC in mid-January 2010 detailing proposed solutions to address loop flows. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Markets

| Issue | Description |
|--|--|
| 2. Market Solutions to Loop Flow: Interregional Congestion Management | <ul style="list-style-type: none">▪ NYISO and PJM are evaluating a coordinated bilateral Congestion Management Process concept. PJM and NYISO met on April 12-13, 2007 and discussed possible opportunities for coordination. This intent of this activity is to develop a concept that enables optimal dispatch between control areas such that one control area may alleviate congestion in the other.▪ PJM and NYISO have held several meetings in the first half of 2008 to develop a conceptual design for implementing a coordinated congestion management process. These discussions have focused on the overall design, potential operational procedures and data coordination protocols necessary to integrate a congestion management process.▪ On February 12, 2009 NYISO hosted a technical conference for market participants, with representatives from PJM, MISO, IESO and ISO-NE participating, to discuss design considerations and take stakeholder feedback on the development of an Interregional congestion management process. NYISO and PJM staffs have met to discuss the details of performing the market flow calculation and have begun the internal evaluation of identifying the necessary data to be shared to support that process. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Markets

| Issue | Description |
|---|---|
| <p>2. Market Solutions to Loop Flow: Interregional Congestion Management (continued)</p> | <ul style="list-style-type: none"> ▪ NYISO and PJM are working on the development of a market flow analysis tool. This tool will help the ISOs in understanding the extent of market flows on each other's systems and in determining the need to define entitlements in a congestion management process. ▪ At the September 1, 2009 MIWG meeting, the NYISO provided an update on efforts to develop a congestion management process. The current effort is focused on development of the market flow calculation tool and identification of the appropriate baseline for measuring relief provided as part of the settlement process. As noted in the presentation, the plan calls for implementation of the market flow calculation tool in 2010 with full implementation of a congestion management process between NYISO and PJM in 2011 and implementation with additional neighboring control areas in 2013. Also included in this presentation is a schedule for the development of these proposals to support a January 2010 filing with FERC. In addition to the September 1 MIWG, this presentation is slated for discussion at the September 9 BIC. ▪ The NERC Interchange Distribution Coordination (IDC) Working Group is working on the development of an IDC calculation tool that would provide a common application for the calculation of market flows on transmission facilities across control areas. Vendor selection for development of this tool is underway with a goal of having the application on-line by November 1, 2010. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Markets

| Issue | Description |
|---|--|
| <p>3. Market Solutions to Loop Flow: Enhanced Interregional Transaction Coordination</p> | <ul style="list-style-type: none"> ▪ The NYISO's 2008 State of the Market Report provides an analysis of scheduling and pricing patterns at the NYISO's interfaces with neighboring control areas. This analysis indicates that there is an opportunity to increase the efficient use of transfer capacity during unconstrained periods resulting in both production cost and net consumer benefits in both control areas. The report recommends the development of processes to improve coordination between the ISOs even if only during limited circumstances, such as reserve shortages. ▪ At the 2009 spring sector meetings, the NYISO provided an overview of 2009 project activities supporting the development of broader regional markets. These activities include an enhanced operating protocol with ISO-NE and the development of a market flow analysis tool with PJM. In addition, the NYISO is working with several control areas to determine the feasibility of dynamic scheduling of energy between NYCA and other control areas. ▪ At the June 26, 2009 MIWG meeting, NYISO provided an overview of a market based scheduling mechanism that would allow for dynamic scheduling between control areas. The initial focus is on the development of this capability at the Quebec interface for energy. Expanding the functionality to reserve and regulation products and to additional control areas could be considered in future phases. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Markets

| Issue | Description |
|---|--|
| <p>3. Market Solutions to Loop Flow: Enhanced Interregional Transaction Coordination <i>(continued)</i></p> | <ul style="list-style-type: none"> ▪ NYISO presented an update on Enhanced Interregional Transaction Coordination at the September 1, 2009 MIWG meeting. This presentation included an overview of energy bidding, scheduling, pricing, settlement and NERC tag changes necessary for the initial phase of this project supporting intra-hour energy transactions at the NYISO-HQ interface. Also included in this presentation is a preliminary schedule for review with the SOAS and BIC through the fall of this year followed by formal stakeholder approval and continued development work in 2010. ▪ There will be a presentation on Enhanced Interregional Transaction Coordination at the December 10, 2009 Operating Committee and the December 18 Market Issues Working Group meetings. ▪ NYISO has initiated discussions with ISO-NE and PJM to pursue enhanced interregional transaction scheduling capabilities. ▪ NYISO provided an update on the effort to develop enhanced interregional transaction coordinating capabilities at the January 5, 2010 Market Issues Working Group meeting. NYISO intends to seek stakeholder approval for Phase 1, enhanced energy transaction scheduling at the NYISO-HQ interface in 2010 with a planed implementation in 2011. Discussions with ISO-NE and PJM regarding opportunities to achieve more efficient scheduling outcomes through increased coordination and frequency of scheduling decisions has begun. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Markets

| Issue | Description |
|--|---|
| <p>4. Cross-Border Controllable Line Scheduling</p> | <ul style="list-style-type: none"> ▪ Linden VFT, a 300MW injection from PJM to NYISO is targeted to begin operations during the third quarter 2009 with full operation targeted for the fourth quarter of 2009. ▪ Details on the operation, transmission reservations, and Tariff changes for the Linden VFT were presented at MIWG teleconferences on January 26 & 30, 2009. ▪ Tariff changes necessary to support implementation of the Linden VFT in the energy market were passed at the February 25, 2009 Management Committee meeting, were approved by the NYISO Board on March 17th and will be filed with FERC. NYISO will work with PJM and Con Ed to ensure emergency operating protocols are in place prior to operation of the Linden VFT Scheduled Line. The NYISO Tariff changes were approved by FERC on May 27, 2009. ▪ A technical bulletin (184) detailing the protocol for scheduling energy transaction on the Linden scheduled line was published in July of 2009. ▪ NYISO is working on the development of a proposed solution to implement mitigation measures under existing Tariffs for presentation to the ICAPWG in mid-August 2009. ▪ At the August 21, 2009 ICAPWG meeting NYISO provided an update on the application of mitigation measures applicable to scheduled lines. Further discussion of mitigation measures applicable to scheduled lines will take place at the ICAPWG. ▪ The Linden VFT was placed in commercial service on November 1, 2009. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Markets

| Issue | Description |
|---|---|
| 5. Reserves Participation in Adjacent Regional Markets | <ul style="list-style-type: none">▪ There is Market Participant interest in selling operating reserves from generation sources in one region to provide reserves in another region. This issue will be considered along with other longer-term market issues as part of the NYISO Market Evolution Plan, which was presented to NY stakeholders in June 2005. Since late 2005, the NYISO's Market Evolution Plan is part of its strategic planning process. The NYISO suggested this item to its Market Issues WG for stakeholder discussion and prioritization. Following implementation (October 2006) and assessment of their reserve market, ISO-NE will consider inter-control area provision of reserves.▪ The NYISO intends to evaluate the capabilities for cross border reserve trading as part of the Interregional Transaction Coordination effort in 2010. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Markets

| Issue | Description |
|--|--|
| <p>6. Congestion Rent Shortfalls Resulting From External Transmission Outages</p> | <ul style="list-style-type: none"> ▪ Transmission outages or deratings occurring outside of the NYCA that are not anticipated at the time of a TCC auction can force the NYISO to reduce the assumed transfer capability between the NYCA and the adjacent control area. If the resulting set of TCCs are rendered infeasible, the NYISO will incur congestion rent shortfalls in the day-ahead market. There is currently no way to assign the cost impact (due to the congestion rent shortfall) of that outage to the responsible external transmission owner. In addition, transmission outages or deratings that cause reductions in transfer capability between regions may have an impact on ICAP sales between regions. NYISO Senior Management will evaluate project, scheduling and budget impacts in conjunction with all other identified initiatives and determine what further action will be taken. ▪ NYISO will evaluate this issue as part of NYISO’s market rules assessment initiative. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Markets

| Issue | Description |
|--|---|
| <p>7. Elimination of Rate Pancaking</p> | <ul style="list-style-type: none"> ▪ The NYISO, with the support of the New York TOs, will initiate discussions among the affected parties in the Northeast to explore the potential for rate pancaking relief between New York and PJM. A meeting between the NY and PJM TOs was held on August 18, 2005 to initiate discussions on this issue. With the Transmissions Owners as the primary drivers of this issue, NYISO and PJM are awaiting indications of intent from PJM's TOs as to the level of priority this issue has with the TOs. PJM has supply transaction data regarding volume and rates for PJM exports into NY. ▪ The NYISO has also initiated discussions with IESO to eliminate export fees. The revenue application review process for the transmitter that owns the inter-tie transmission lines in Ontario, and is responsible to the provincial regulator for this fee, is currently ongoing. The possibility of eliminating the transmission export fee, along with other options, is being discussed at this rate hearing. The decision on the transmitter's revenue application is expected to be given in May of 2007. ▪ The Ontario Energy Board recently upheld the \$1/MWh export charge from IESO. However, the IESO will be (1) conducting a study on appropriate export transmission service rates for Hydro One Networks' 2010 rate process; and (2) will start negotiations with the NYISO to pursue a reciprocal arrangement to eliminate export charges. The IESO will begin discussions with its neighbors early in 2008 and will complete its market impact studies in 2009. The Ontario Energy Board must approve any changes to Hydro One's export transmission charges. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Markets

| Issue | Description |
|---|---|
| <p>8. Asymmetric Capability Year Impact on Inter-Area Capacity Sales</p> | <ul style="list-style-type: none"> ▪ The NYISO capability year begins May 1st, while the capability years for both PJM and ISO-NE begin on June 1st. The election to use Unforced Deliverability Rights (UDRs) for controllable tie-line capacity at an interface with an external control area is factored into the NYISO’s annual planning process determining locational capacity requirements. The capacity of a controllable tie-line not used for UDRs may be modeled as emergency assistance in the planning process, subsequently reducing the locational capacity requirement. The one month difference between capability years across the ISOs may be an issue in instances where full capability year obligations or contracted capacity from one control area is transitioned to meet requirements in the neighboring control area. ▪ The development of a conceptual design for realignment of the capability periods is included in the 2010 project plan. ▪ On November 19, 2009 LIPA presented to the ICAPWG a proposal for an interim solution to address their concern for May 2010. The solution would allow for the adjustment of locational ICAP requirements on a one time basis. ▪ At the NYISO’s December 16, 2009 Management Committee meeting, Market Participants approved revisions to the NYISO’s Market Administration and Control Area Services Tariff to revise the Capability Year adjustment election for holders of rights to UDRs. NYISO will continue to pursue the evaluation of market rule, software and operational procedure changes necessary to align the NYISO capability year with neighboring control areas. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Planning

| Issue | Description |
|---|--|
| <p>9. Coordination of Interregional Planning</p> | <ul style="list-style-type: none"> ▪ The draft NCSP was posted on January 9, 2009 and an IPSAC conference call was held on January 30, 2009 to discuss comments on the draft Plan and to receive further input from stakeholders regarding continuing studies of interregional system assessments and system improvements. Following these two IPSAC meetings a final comment period was concluded on February 4 and the final NCSP was posted on March 3, 2009. The final NCSP is a comprehensive document that discusses: summaries of the RTO’s system plans, interregional studies conducted by the JCSP that include the coordination of projects in the Queues having potential interregional impacts, additional coordinated planning activities and issues, wind and renewable resource studies, key environmental issues with potential interregional impacts, renewable resource development, demand side resource development, and plans for additional JIPC analysis. ▪ Next steps planned are summarized in the NCSP. In particular, NYISO and PJM will be conducting both reliability and production cost analysis which will focus on the New Jersey – Southeast New York area during 2009. In addition new tie lines are being explored, including further analysis between ISO-NE and NYISO, as well as their respective transmission owners, that builds upon the prefeasibility study of a tie between Plattsburgh and Vermont. Upon completion of these studies, plans call for conducting a feasibility analysis of the need for a new tie between southern New England and Southeast New York. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Planning

| Issue | Description |
|---|--|
| <p>9. Coordination of Interregional Planning <i>(continued)</i></p> | <ul style="list-style-type: none"> ▪ The ISOs provided an update on the status of these studies to IPSAC on a Conference Call held on May 7th. Further updates, including initial study results, will be discussed at the next IPSAC meeting planned for June 30, 2009 to be held in Newark. ▪ An IPSAC meeting was held June 30, 2009. ▪ An IPSAC WebEx meeting was held on November 6, 2009. The WebEx provided a status update regarding analysis of the Vermont-New York New Interconnection, NYISO/PJM Reliability and Market Efficiency Analysis and the development of a common economic database for the combined region. Process improvements for coordinating interconnection studies and transmission planning studies are under development. ▪ At the December 18, 2009 IPSAC meeting, the ISOs indicated their intent to summarize existing cost allocation methodologies and to make the summary available to stakeholders for discussion at the next IPSAC meeting—planned for late January 2009. Stakeholders expressed differing views regarding the timeliness of starting cross-border cost allocation discussions at this time. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Planning

| Issue | Description |
|---|---|
| <p>9. Coordination of Interregional Planning <i>(continued)</i></p> | <ul style="list-style-type: none"> ▪ An IPSAC meeting was held on December 18th at which the following updates were provided: (i) the results of additional analysis on the Vermont-New York Interconnection; (ii) a summary of existing and pending environmental regulations and a discussion of the potential impacts on the Northeast region; (iii) presentation on the current outlook for natural gas supply, which included estimates of significant increases in the resources available from shale gas sources in the Northeast and mid-Atlantic region, the addition of LNG terminals, and improvements in pipelines; (iv) a summary of the final results of the PJM-New York focused reliability and economic efficiency studies; and (v) a discussion of the data sources and model to be used in both the upcoming NY-NE and three ISO/RTO focused production cost analyses. ▪ Many stakeholders expressed the desire to obtain access to the detailed assumptions and data bases to be used in future studies. Some of the data bases are considered proprietary by program vendors and the ISO/RTOs are examining ways of making this information more readily available. Other stakeholders felt that the improved accuracy available from confidential ISO/RTO databases should be used subject to sharing as many assumptions as possible consistent with information policy constraints. T ▪ The next IPSAC meeting was proposed as a Webex call for late January or early February 2010. The purpose of the call will be to discuss the status of NCSP09, a survey of transmission cost allocation methods, and next steps. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Planning

| Issue | Description |
|--|---|
| 10. Limitations Due to Loss of Large Source | <ul style="list-style-type: none"><li>▪ A status of detailed loss of source studies was presented at the December 11, 2008 IPSAC meeting. With the addition of the planned 500kV improvements by 2012, the loss of source limit will likely be constrained by limitations in the PJM system to the 1,500 MW level. The New York constraint will become less binding than the PJM constraint at that time. Loss of source analysis is continuing as a part of other interregional studies, such as the NY-VT tie, and the NJ- Southeast NY studies. The loss of source issues and studies are summarized in the NCSP. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.



Broader Regional Planning

| Issue | Description |
|--|--|
| 11. Eastern Interconnection Planning Collaborative (EIPC) | <ul style="list-style-type: none">At the September 2, 2009 ESPWG meeting NYISO presented an update on Eastern Interconnection Planning Collaborative (EIPC) activities. Included with the update is a summary of a planned response to the DOE Funding Opportunity Announcement (FOA) for an Eastern Interconnection Planning and Analysis project.The EIPC held Webinars on October 13th and 16th to initiate dialogue with stakeholders, to receive input and to answer questions regarding this initiative.On December 18, 2009, the DOE announced award selections totaling \$60 million dollars in funding to develop open and transparent stakeholder processes and to conduct transmission planning analyses on an interconnection-wide basis. The awardees for the Eastern Interconnection were the EIPC proposal for developing the stakeholder process and performing the technical analysis and the EISPC proposal to establish a consensus-building process among the Eastern states to identify resource and policy options as input to the technical analysis. It is anticipated that discussions will begin in early 2010 to finalize an agreement with the DOE. |

Note: The complete list of seams issues is updated each quarter for FERC. This is only a summary of recent activities.