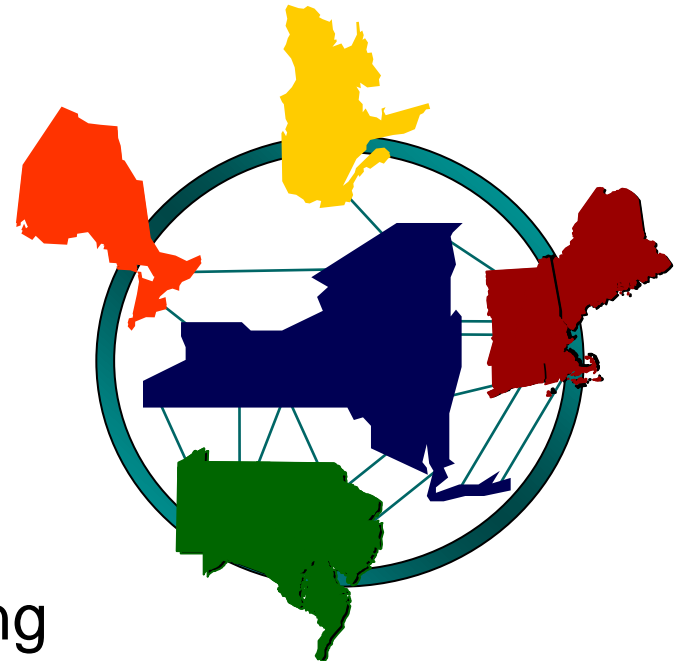


Northeast Seams Report

Update on Northeast Seams Issues

December 21, 2011

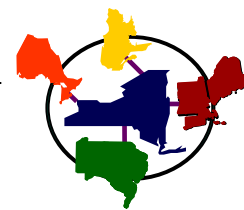
NYISO Management Committee Meeting



Draft –for Discussion Purposes Only

Broader Regional Markets

Issue	Description
1. Market Solutions to Loop Flow: Interregional Congestion Management	<ul style="list-style-type: none">▪ A kick off meeting was held in August 2010 for a regional PAR coordination study. In addition to identifying devices with the ability to manage loop flows the study will identify regional paths and flowgates significantly impacted by Lake Erie loop flows. The NYISO’s August 16, 2010 Broader Regional Markets initiatives report filed with FERC provides further detail on the preliminary scope of this study.▪ On August 26, 2011 NYISO submitted to FERC the <i>Regional Power Control Device Coordination Study, Final Report</i>, prepared by Midwest ISO, PJM, IESO and NYISO. The report concluded that under some circumstances a correlation may exist between PAR operation and Lake Erie circulation and a significant correlation between scheduled interchange among the Lake Erie ISO/RTOs and Lake Erie circulation. The report cautions that an observed correlation among these variables does not however imply a causal relationship between them.▪ On October 20, 2010 Midwest ISO and ITC filed proposed tariff amendments at FERC seeking to allocate 30.9 % of the cost of ITC's phase angle regulating transformers at Bunce Creek on the Michigan-Ontario border to New York, and 19.5% to PJM. The Commission has set a November 10, 2010 comment date in Docket No. ER11-1844. The NYISO intends to vigorously oppose this proposal.▪ On November 17, 2010 the NYISO, the New York TOs, ISO-New England and many other entities filed protests in opposition to joint Midwest ISO-ITC cost allocation proposal. NYISO contends that the cost allocation proposal is not consistent with Commission precedent or the Commission’s recent transmission planning and cost allocation NOPR.



Broader Regional Markets

Issue	Description
<p>1. Market Solutions to Loop Flow: Interregional Congestion Management <i>(continued)</i></p>	<ul style="list-style-type: none"> ■ In response to ITC's filing of a proposed Ontario/Michigan PAR interconnection agreement, operating agreement and related documents, on August 17, 2011 the NYISO filed a petition to intervene and initial comments in DOE Docket No. PP-230-4. The NYISO's comments stated that the proposed PAR operating rules present a potential reliability risk to New York. On October 13 MISO and IESO Jointly filed comments at DOE that address most of the NYISO's concerns relating to the modeling of the OH/MI PARs in the NERC Interchange Distribution Calculator. ■ NYISO and PJM are evaluating a coordinated bilateral Congestion Management Process concept. 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. ■ On December 30, 2010 FERC issued an order elevating the priority of the Market-to-Market Coordination/Congestion Management and Interface Pricing Revision elements of the NYISO's Broader Regional Markets plan. ■ On July 21, 2011 PJM and NYISO held a joint stakeholder meeting to review the ongoing development of a Market-to-Market Coordination protocol. The presentation included an overview of the joint operating agreement and project timeline as well as a review of key concepts, coordination in real-time, market flows, entitlements, settlements, post process validation, and next steps.

Broader Regional Markets

Issue	Description
1. Market Solutions to Loop Flow: Interregional Congestion Management (continued)	<ul style="list-style-type: none">At the September 16, 2011 MIWG, NYISO presented changes to NYISO tariffs and the NYISO-PJM Joint Operating Agreement (JOA) necessary for implementation of Market-to-Market Coordination with PJM. At the September 26 MIWG NYISO presented stakeholders with details on the incorporation of Ramapo PAR operation into the Market-to-Market Coordination process. Review of the JOA was continued at the at the October 19 and 27, 2011 MIWG meetings.NYISO and PJM held a joint stakeholder conference for their stakeholders on November 3, 2011 to review the proposed Market-to-Market Coordination Procedures that will be incorporated into the JOA between PJM and NYISO. NYISO also reviewed the NYISO-PJM JOA at the November 9, 2011 BIC and plans to file the JOA with the Commission by the end of 2011.On October 26, 2011 NYISO deployed pricing and scheduling software enhancements that are designed to allow the NYISO to better reflect the distribution of flows around Lake Erie. These enhancements are referred to as “Interface Pricing.” Today, the scheduling and pricing software does not explicitly distribute power flows around Lake Erie when determining schedules and prices. Market Participants will be given notice at least two weeks prior to the activation of this feature.



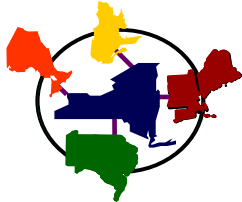
Broader Regional Markets

Issue	Description
2. Market Solutions to Loop Flow: Enhanced Interregional Transaction Coordination (EITC)	<p><u>EITC Phase 1 (15-minute scheduling at HQ Chateauguay)</u></p> <ul style="list-style-type: none">On July 27, 2011 NYISO and HQ activated 15-minute scheduling at the HQ-Chateauguay Proxy.NYISO increased the quarter-hour interchange ramp limit at the New York-Hydro Quebec Interface from 25 MW to 50 MW on November 2, 2011. The limit was increased from 50 MW to 100 MW on December 1, 2011. <p><u>EITC Phase 3 (15-minute scheduling at PJM)</u></p> <ul style="list-style-type: none">At the June 6, 2011 Market Issues Working Group NYISO provided an update on EITC Phase 3 which will provide for 15-minute transaction scheduling between NY and PJM. Software and tariff changes developed for EITC Phase 1 will support much of the EITC Phase 3 deployment. Additional operational tools and procedures will be developed to support 15-minute checkouts with PJM. NYISO expects to begin implementation in March of 2012.At the November 8, 2011 MIWG meeting, NYISO provided an update on EITC Phase 3 which will provide for 15-minute transaction scheduling between NY and PJM. NYISO anticipates being ready to activate the first PJM Proxy in late Q2 2012.



Broader Regional Markets

Issue	Description
2. Market Solutions to Loop Flow: Enhanced Interregional Transaction Coordination (continued)	<p><u>EITC Phase 4 (CTS with ISO-NE)</u></p> <ul style="list-style-type: none">During the first half of 2011, NYISO and ISO-NE held a series of joint stakeholder discussions to review design proposals for improving the efficient utilization of the NY-NE interface. Two distinct options: Tie Optimization (TO) and Coordinated Transaction Scheduling (CTS) were considered.At the June 1, 2011 NEPOOL Markets Committee and NYISO Business Issues Committee joint stakeholder meeting NYISO stakeholders selected the Coordinated Transaction Scheduling proposal with an 85.47% affirmative advisory vote. NE stakeholders voted to approve a separate competing proposal, Tie Optimization, by 61.64%. As a result of this outcome, the ISOs' management will review the merits of each of the proposals and return to stakeholders with a recommendation for moving forward.At an August 31, 2011 meeting of the NYISO BIC, stakeholders approved the concept of including a two year post implementation review of interface scheduling performance under CTS in the CTS tariff filing. The motion was passed with 88% in favor.At the November 9, 2011 BIC meeting, stakeholders passed the motion recommending that the MC approve the CTS Tariff amendments. Stakeholders approved the Tariff changes at the November 29 MC meeting.



Broader Regional Markets

Issue	Description
2. Market Solutions to Loop Flow: Enhanced Interregional Transaction Coordination <i>(continued)</i>	<ul style="list-style-type: none">▪ In 2012, NYISO and PJM will jointly develop for review and discussion with stakeholders the Coordinated Transaction Scheduling concept for use in establishing interchange schedules at their common interface(s).



Broader Regional Markets

Estimated Benefits of Broader Regional Markets Initiatives

- An analysis of the Broader Regional Markets initiatives conducted by the NYISO's Independent Market Monitor indicates, under a \$6 per MMBTU natural gas price scenario, annual regional savings of at least \$362 million with \$193 million annual savings on New York interfaces and constraints.
- Coordination of flows around Lake Erie would result in an estimated \$53 million in annual savings regionally with \$18 million for New York interfaces and constraints
 - ✓ Gross value of over-priced and under-priced loop flow is \$430 on an annual basis
 - ✓ Reasonable to expect to capture 10-20% of this value
- Improved interface utilization would result in \$309 million in annual savings regionally with \$175 million for New York interfaces and constraints
 - ✓ Measured as reduction in production costs
 - ✓ Results in price convergence between regions
- At the September 27, 2010 joint stakeholder technical conference David Patton presented an update to the analysis of the benefits of the Broader Regional Market Initiatives originally presented at the April 21 MC meeting.

Broader Regional Markets

Issue	Description
3. 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.On November 10, 2010 NYISO presented a proposed approach for allowing market participants to purchase or sell Operating Reserves and Regulation Service at an external interface. Reserve product qualification, performance management, scheduling, and settlement aspects of the proposed approach were discussed.

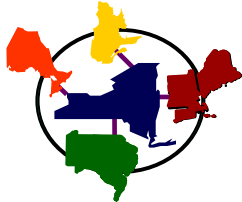
Broader Regional Markets

Issue	Description
4. Congestion Rent Shortfalls Resulting From External Transmission Outages	<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.



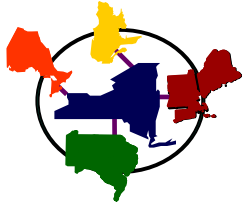
Broader Regional Markets

Issue	Description
5. Elimination of Rate Pancaking	<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.■ While rate pancaking between NYISO and ISO-NE has already been eliminated, it is anticipated that the recently initiated interregional cost allocation discussions taking place under the Northeastern ISO/RTO Coordination of Planning Protocol will address the elimination of through-and-out charges between NYISO and PJM.



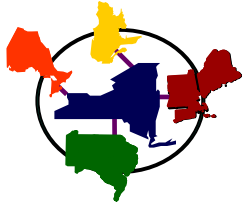
Broader Regional Markets

Issue	Description
6. Asymmetric Capability Year Impact on Inter-Area Capacity Sales	<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.▪ On February 3, 2010 FERC approved Tariff changes necessary to support the Capability Year adjustment election for holders of UDRs.▪ At the June 17, 2010 Installed Capacity Working Group (ICAP WG) NYISO presented an overview of market design considerations related to the realignment of NYISO’s ICAP Capability Year with neighboring markets. PJM and ISO-NE both employ a planning year beginning on June 1 each year and the NYISO employs two distinct six-month capability periods within a capability year beginning on May 1 each year. The NYISO requested feedback from market participants related to anticipated market benefits, additional perceived obstacles, potential impacts on exports from New York, and prioritization with respect to other ICAP market enhancements.



Broader Regional Markets

Issue	Description
7. Capacity Market Enhancements	<ul style="list-style-type: none">▪ Explore Impediments to Reciprocal Capacity Wheeling with New England<ul style="list-style-type: none">♦ <i>Identify the scope of issues pertaining to auction structure, timing, planning, operations, IRM/LCR, cost allocation and other impact areas in NY and NE markets</i>▪ Identify/enumerate capacity market seams<ul style="list-style-type: none">▪ <i>Investigate whether delisted capacity is treated similarly in ISO-NE and NYISO (ICAP vs. UCAP, interaction with export limit, losses, etc.)</i>



Broader Regional Markets

Issue	Description
8. Market Solutions to Loop Flow: Buy-Through of Congestion	<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.▪ Per the December 30, 2010 FERC order, the NYISO has suspended work on Buy-Through of Congestion in order to focus resources on the Commission’s priorities of Interface Pricing and Market to Market.



Broader Regional Planning

Issue	Description
9. Coordination of Interregional Planning	<ul style="list-style-type: none"><li data-bbox="575 358 1787 658">■ The first meeting of the (NYISO) Interregional Planning Task Force was held as a Webex on January 29, 2010, followed by an in person meeting on February 10th . NYISO staff provided updates on IPSAC work plans for 2010 and the EIPC initiative and initiated discussions regarding the development of a process and schedule for addressing cross border planning and cost allocation issues. Numerous IPTF meetings have been held since then, primarily to update stakeholders on IPSAC and EIPC activities as well as to discuss the FERC Planning & Cost Allocation NOPR.<li data-bbox="575 679 1787 901">■ An IPSAC meeting was held on March 30, 2011 to discuss: Draft IREMM Results of the Interregional Production Cost Study, Draft PROMOD Results of the Interregional Production Cost Study, Integrating Energy Efficiency in Long-Term ISO/RTO Planning, Update on the FERC Planning NOPR and Interregional Issues, EIPC Update, Next Steps on Production Cost Studies, Plans for NCSP11, Environmental issues, and other items.<li data-bbox="575 922 1787 1108">■ An IPSAC Webex meeting was held on June 27th to discuss: Environmental Issues and Variable Resource Technologies, Natural Gas Issues and ISO/RTO Reliability Update, IREMM Results of the Interregional Production Cost Study, Update on the PROMOD Interregional Production Cost Study, Update on Interregional Activities, and Next Steps and Plans for NCSP11.<li data-bbox="575 1129 1787 1200">■ Reports have been posted on Environmental Issues and Variable Resource Technologies, and IREMM Results on the Interregional Production Cost Study.

Broader Regional Planning

Issue	Description
9. Coordination of Interregional Planning (continued)	<ul style="list-style-type: none">An IPSAC Webex meeting was held on Nov 29th to discuss: results of the PROMOD Production Cost analyses, updates on Environmental Issues and Order 1000, and the development of the next Northeast Coordinated Regional Plan which is scheduled for completion in the Spring of 2012.



Broader Regional Planning

Issue	Description
9. Coordination of Interregional Planning <i>(continued)</i>	<ul style="list-style-type: none">▪ FERC issued Order 1000, the Final Rule on Transmission Planning & Cost Allocation on July 21, 2011. It contains new requirements in the following areas:<ul style="list-style-type: none">▪ Regional Planning▪ Public Policy Considerations▪ Inter-regional Planning▪ Cost Allocation: Both regional and inter-regional▪ Eliminates “Right-of-First-Refusal” tariff provisions▪ It is anticipated that the Northeast ISO/RTO Planning Coordination Protocol will be utilized as the vehicle for compliance filings related to inter-regional planning and cost allocation.▪ Stakeholder discussions regarding Order 1000 will take place at ESPWG, IPTF as well as IPSAC.▪ The Effective Date of the Final Rule is October 11, 2011.▪ Compliance filings on most topics due on October 11, 2012.▪ Compliance filings on inter-regional topics due on April 1, 2013.▪ On August 22nd NYISO filed for rehearing of the Commission’s assertion that it has jurisdiction to assign the costs of transmission facilities to “all beneficiaries” regardless of their contractual relationship with the owner of those facilities.



Broader Regional Planning

Issue	Description
10. Eastern Interconnection Planning Collaborative (EIPC)	<ul style="list-style-type: none">▪ 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.▪ On May 28th, the SSC reached a consensus on the final set of eight “resource expansion futures”, and the data inputs for all sensitivity cases to be studied. These futures are:<ul style="list-style-type: none">♦ <i>Business as Usual</i>♦ <i>Federal Carbon Constraint: National Implementation</i>♦ <i>Federal Carbon Constraint: State and Regional Implementation</i>♦ <i>Aggressive Energy Efficiency, Demand Response, Distributed Generation and Smart Grid</i>♦ <i>National Renewable Portfolio Standard (RPS): Top Down Implementation</i>♦ <i>National RPS: State and Regional Implementation</i>♦ <i>Nuclear Resurgence</i>♦ <i>Combined Federal Climate and Energy Policy</i>



Broader Regional Planning

Issue	Description
10. Eastern Interconnection Planning Collaborative (EIPC) <i>(continued)</i>	<ul style="list-style-type: none">■ At the SSC meeting held on Sept 26-27th in Philadelphia, the following topics were addressed<ul style="list-style-type: none">■ Nationally Implemented Federal Carbon Policy w/increased EE/DR■ Regionally Implemented National RPS Scenario■ “Business As Usual”■ MWG recommendations for EE/DR, intermittency and Nuclear Upgrade costs■ SSC approved the use of the final four sensitivities to address perceived anomalies in the NEEM results■ Stakeholders provided input on Draft 2 of the Phase I Report■ EIPC provided an update on the Project Schedule for the remainder of the year■ During October 2011 EIPC:<ul style="list-style-type: none">■ Posted the Third draft of the Phase I Report for stakeholder review and comment■ Issued a comprehensive set of procedures for Phase II along with a detailed schedule including meetings of the Transmission Options Task Force■ The SSC was engaged in reviewing the results of the last four sensitivity cases to finalize the final three Scenarios for Phase II.



Broader Regional Planning

Issue	Description
10. Eastern Interconnection Planning Collaborative (EIPC) (continued)	<ul style="list-style-type: none">▪ During November 2011:<ul style="list-style-type: none">▪ EIPC posted the results for the final 4 sensitivities completing a total of 80 cases. The modeling results are available on the EIPC website at www.eipconline.com/Modeling_Results.html.▪ SSC finalized the Three Scenarios required for Phase II▪ EIPC posted the final draft of the Phase 1 Report for stakeholder review▪ The initial meeting of the Transmission Options Task Force (TOTF) was held by Webex during which the Planning Authorities reviewed the scope and schedule for Phase II. EIPC is in the process of incorporating comments into the Phase II procedures.▪ Next Steps:<ul style="list-style-type: none">▪ Phase I Report to be filed with DOE in mid-December▪ Assuming DOE authorization, Phase II of the Project will begin in January 2012▪ The first TOTF in-person meeting will be held in Arlington, VA on January 10-11th, 2012▪ Planning Authorities are beginning preparation of inputs needed for an EI-wide power flow case for each of the final three Scenarios selected by Stakeholders