

A faint, light-colored diagram of a power grid is visible in the background. It consists of a network of lines representing transmission lines, with various nodes and junctions marked by small colored dots in shades of blue, red, and purple. The grid is more densely packed in the lower right quadrant of the slide.

Enhanced Interregional Transaction Coordination – EITC Project Phase_1

Nicolé K. Grottoli

Senior Market Trainer

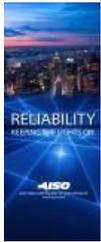
New York Independent System Operator

Market Participant Webex

March 2011

Rensselaer, NY

The Roles of the NYISO



Reliable operation of the bulk electricity grid

- *Managing the flow of power nearly 11,000 circuit-miles of transmission lines from more than 300 generating units*



Administration of open and competitive wholesale electricity markets

- *Bringing together buyers and sellers of energy and related products and services*



Planning for New York's energy future

- *Assessing needs over a 10-year horizon and evaluating the feasibility of projects proposed to meet those needs*



Advancing the technological infrastructure of the electric system

- *Developing and deploying information technology and tools to make the grid smarter*

EITC Project Phase_1 – MP Webex Session

- ◆ The purpose of this Webex session is to familiarize Market Participants with the bidding, evaluation, scheduling and settlement-related changes associated with the EITC Project Phase_1.
- ◆ The Project is scheduled to deploy in April/May 2011.
- ◆ Webex participants should have a general working knowledge of Transactions prior to participating in the Webex.
- ◆ New Tariff Definitions and a list of additional resources are provided at the end of this presentation.

Objectives:

At the conclusion of this webex, participants will be able to describe the following as they relate to the EITC Project Phase_1:

- ✓ **Bidding changes**
- ✓ **Evaluation and Scheduling changes**
- ✓ **Upload/download changes**
- ✓ **Pricing rule changes**
- ✓ **Settlement-related changes**

EITC Project Background

- ◆ Supports an eleven point bid curve with DAM and RT external transactions
- ◆ Permits scheduling inter-Balancing Authority Transactions involving the NYISO on a more frequent basis than current hourly scheduling
 - *15 minute with 5 minute scheduling potential on authorized proxies*

EITC Project Background

Affected Transactions:

- *LBMP imports and exports*

- *Bilateral imports, exports and wheels**
 - Wheel-through transactions will be evaluated once an hour by RTC_{15}
 - Wheel-through transaction offers will not have the option to be scheduled as an intra-hour transaction

EITC Project Benefits

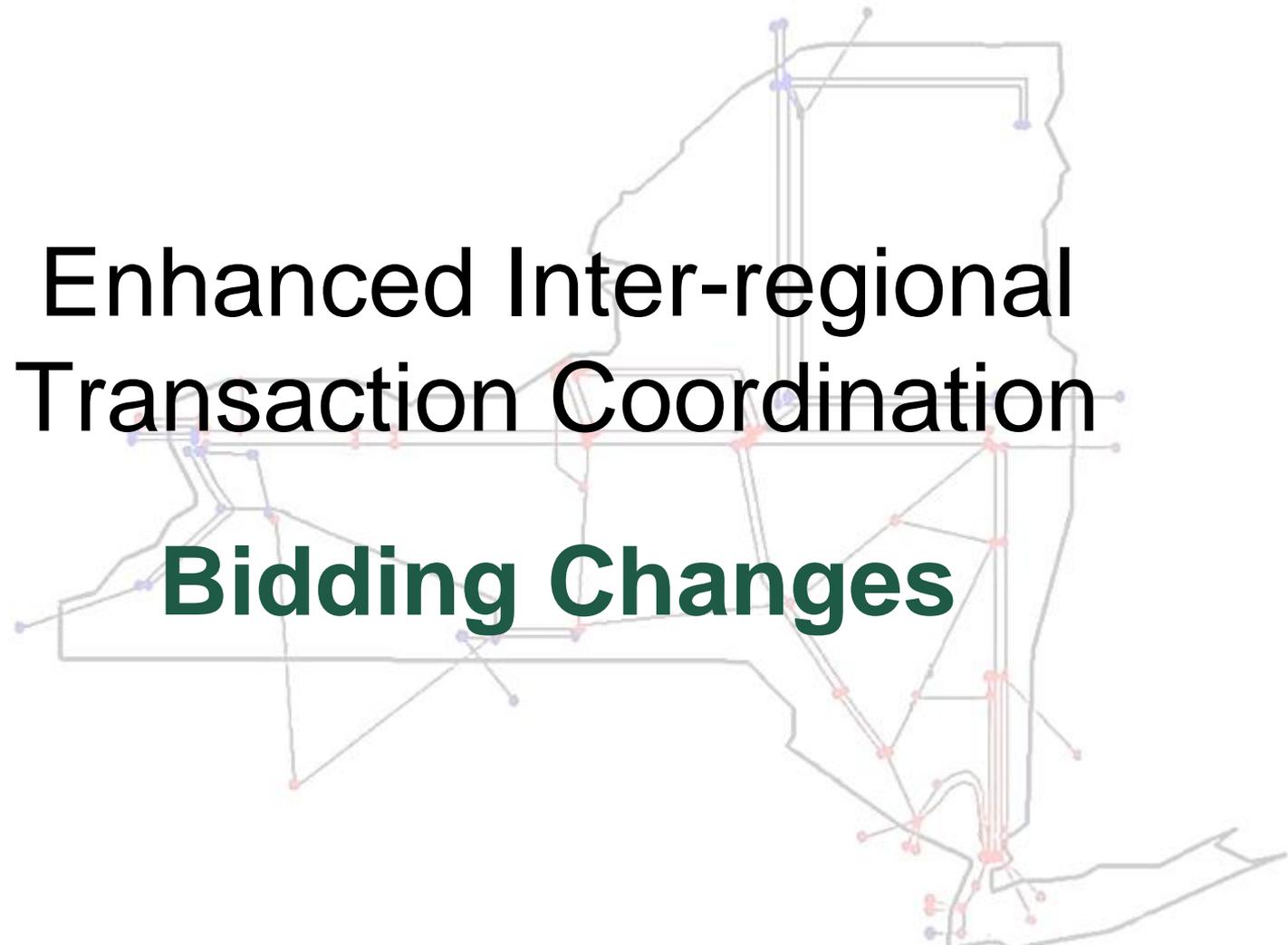
- ◆ Utilize transmission between NY and neighboring control areas more efficiently
- ◆ Result in reduced uplift cost associated with RT event management and congestion management
- ◆ Facilitate better integration of intermittent resources

EITC Project Benefits – cont'd

- ◆ Lower total system operating costs by
 - *Improving the consistency of transaction schedules with market prices*
 - *Expanding the pool of resources available to the system operator to balance intermittent resources*
 - *Improving transmission utilization and reducing uncertainties associated with forward looking scheduling horizons*

EITC Project Implementation

- ◆ **Phase 1 – Begin with scheduling intra-hour dispatchable energy transactions between the NY and HQ control areas**
- ◆ **Phase 2 – Continue to evaluate the appropriateness of expanding the Interregional Transaction Coordination Concept by scheduling operating reserves and/or regulation service with HQ**
- ◆ **Phase 3 – Continue scheduling intra-hour dispatchable energy transactions between the NY and PJM control areas**
- ◆ **Phase 4 - Continue scheduling intra-hour dispatchable energy transactions between the NY and ISO-NE control areas**

A faint, light gray map of New York State is overlaid with a complex network of lines representing the electrical transmission grid. The lines are interconnected, forming a dense web across the state. Some nodes in the network are highlighted with small colored dots in purple, red, and blue. The text "Enhanced Inter-regional Transaction Coordination" is centered over the map in a large, black, sans-serif font. Below it, the words "Bidding Changes" are written in a large, bold, dark green font.

Enhanced Inter-regional Transaction Coordination

Bidding Changes

EITC Project Phase_1

Bidding

- ◆ All external transaction bids will support an eleven point bid curve and Energy Profile MW
 - *The Energy Profile MW will be treated as the maximum allowable schedule for the transaction.*
 - *The cost curves will be allowed to extend beyond the Energy Profile MW offered for the transaction.*
 - *Cost curves associated with export transactions will be treated as price capped cost curves, which is similar to the way virtual load/supply bids are treated.*

EITC Project Phase_1

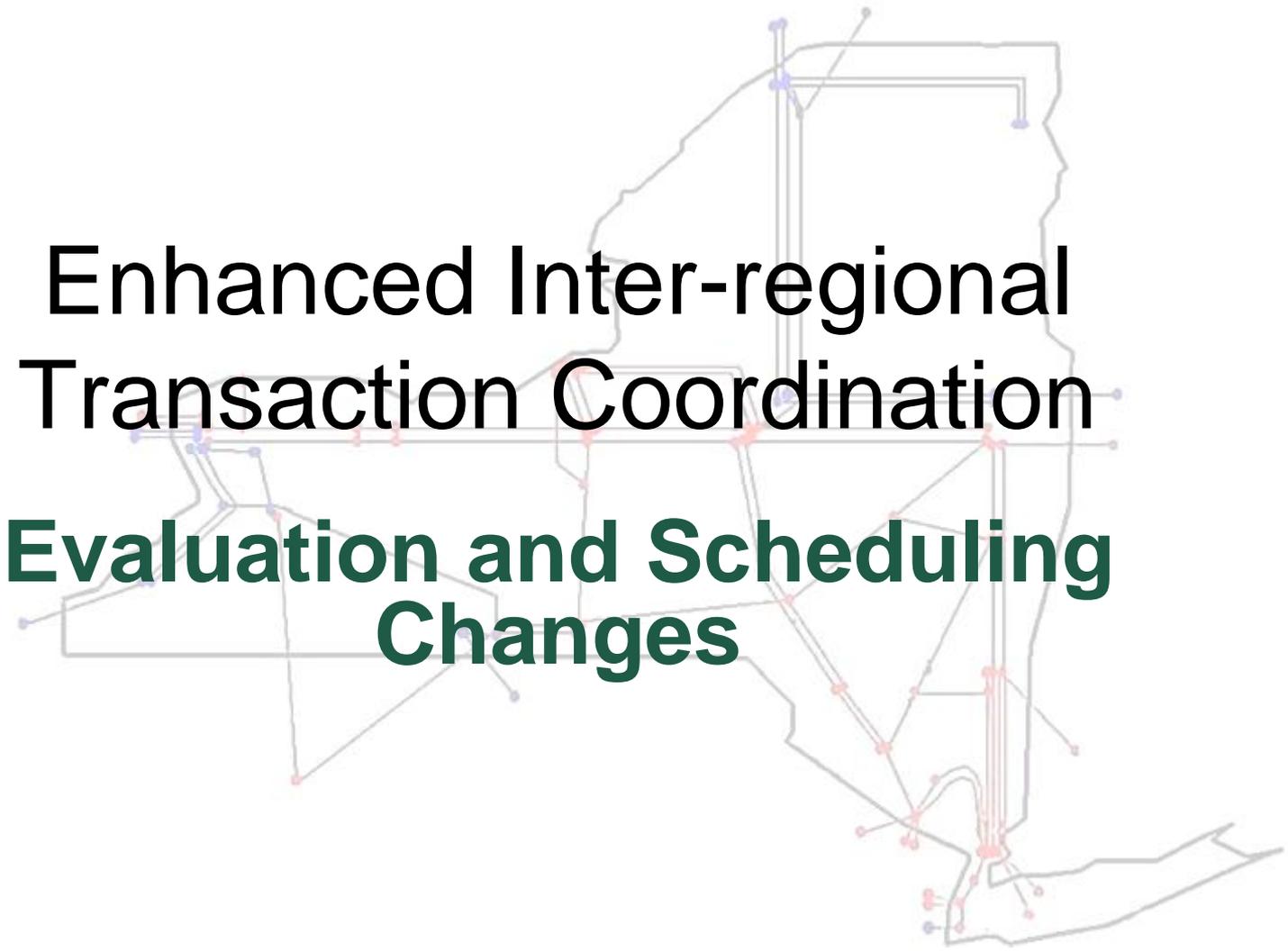
Bidding

- ◆ Intra-hour import/export transactions will be bid into the MIS similarly to the way hourly import/export transactions are bid today
- ◆ Transactions bids will still be bid for a full hour
- ◆ MPs shall indicate on each bid whether the transaction should be scheduled as an hourly or intra-hour transaction in the RT Market

EITC Project Phase_1

Bidding

- ◆ The Real-Time Market bidding window will remain the same for hourly and intra-hour transactions
 - *All transaction bids are still required to be submitted for evaluation by RTC and/or RTD no later than 75 minutes before each hour*

A faint, light gray map of the New York state transmission network is visible in the background. It shows a complex web of lines representing power lines, with several nodes marked by small colored dots in purple, red, and blue. The map is centered behind the main text.

Enhanced Inter-regional Transaction Coordination Evaluation and Scheduling Changes

EITC Project Phase_1

Evaluation & Scheduling

- ◆ Allow external hourly transaction bids to be economically evaluated by RTC₁₅ on an hourly basis, as is currently done
 - *Wheel-through transactions will continue to be evaluated only by RTC₁₅ on an hourly basis*
 - *Wheel-through transactions will not have the option to be scheduled as an intra-hour transaction*

- ◆ Intra-hourly transactions will be evaluated every 15 minutes

EITC Project Phase_1

Evaluation & Scheduling

- ◆ All proxy buses will continue to be authorized for hourly scheduling, even those that are also authorized for intra-hour scheduling
- ◆ At those Proxies where intra-hour transactions are authorized to be scheduled on a 15 minute basis, external intra-hour transaction bids will be economically evaluated by RTC on a rolling 15 minute basis.
- ◆ At those Proxies where intra-hour transactions are authorized to be scheduled on a 5 minute basis, external intra-hour transaction bids will be economically evaluated by RTD on a rolling 5 minute basis.
 - *RTD-CAMs could also evaluate intra-hour transaction bids when a CAM is requested*

Not part of Phase_1

A faint, light gray map of New York State is visible in the background, overlaid with a network of lines representing the power transmission grid. The lines are interconnected, forming a complex web across the state. Some nodes in the network are highlighted with small colored dots in purple, red, and pink. The text is centered over this map.

Enhanced Inter-regional Transaction Coordination Upload/Download Changes

EITC Project Phase_1 - Upload/Download

- ◆ Separate templates for Internal Bilateral and External transactions for **bid** submittal and download
 - *RTD and RTC schedules available for external transactions*
 - *Single template will still be used to delete all transaction bids*

- ◆ Removal of Prescheduled Transaction bid-related templates
 - *Prescheduled transaction feature was removed in Jan 2011 as part of the EITC deployment*

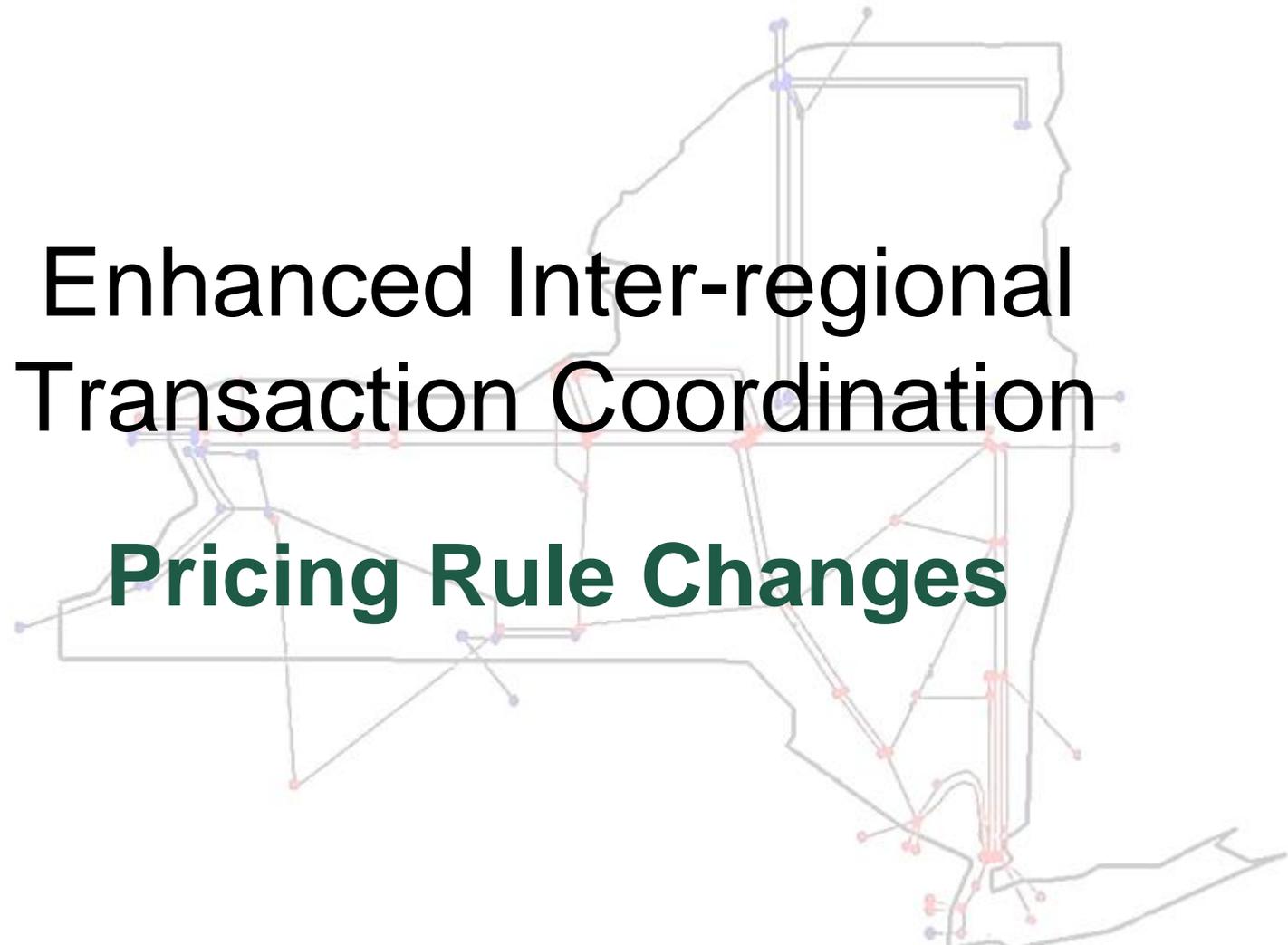
- ◆ MHBT template features incorporated into the External Transaction Bid template

EITC Project Phase_1 - Upload/Download

- ◆ Transaction Bid Schedule Type
 - *2 - indicates bid scheduled hourly in RT*
 - *3 - indicates bid scheduled intra-hourly in RT*
 - *Note: the intra-hour frequency (5-min or 15-min) is defined on a proxy by proxy basis*

- ◆ Transaction Bid Duration
 - *Represents the number of operating hours the bid covers*
 - *Reduces amount of data an MP must submit*

- ◆ Transaction Bid Curve
 - *11 point bid curve for all external transactions for both hourly and intra-hourly*

A faint, light gray map of New York State is overlaid with a complex network of lines and nodes representing the power transmission system. The nodes are small circles in various colors (purple, red, blue) and are connected by thin gray lines. The map shows the state's outline and internal regional boundaries.

Enhanced Inter-regional Transaction Coordination

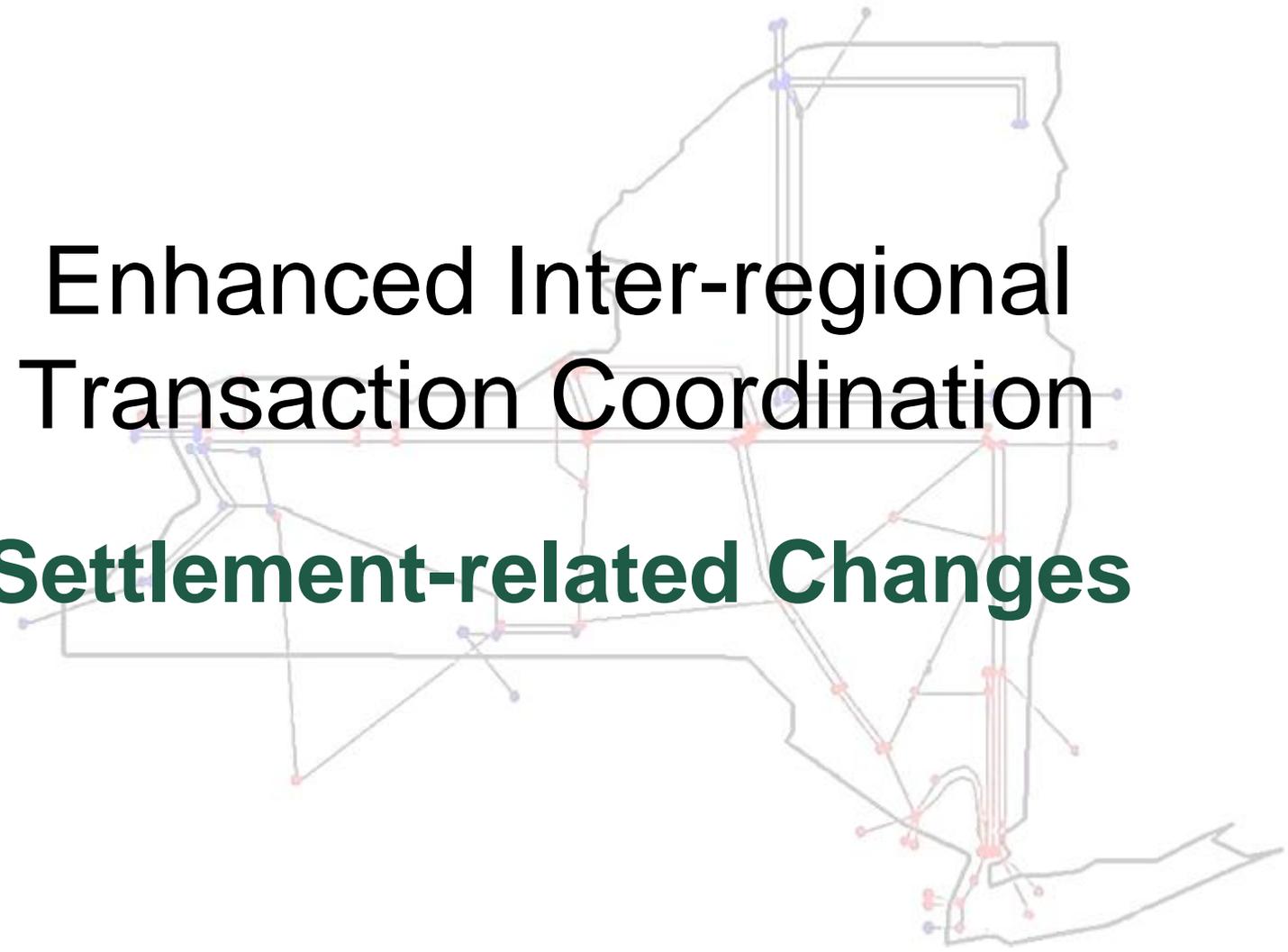
Pricing Rule Changes

EITC Project Phase_1

Pricing Changes

- ◆ **See Table in MST Attachment B, Section 17.1.6.2 for Pricing Rules at Variably Scheduled Proxy Generator Buses**
 - *Price set either by RTC or by RTD*

- ◆ **Binding Proxy Generator Bus Constraints include:**
 - *NYCA Ramp Limited*
 - *Proxy Generator Bus TTC Limited*
 - *Proxy Generator Bus Ramp Limited*

A faint, light gray map of New York State is overlaid with a complex network of lines representing the power transmission grid. The lines are interconnected, forming a dense web across the state. Some nodes in the network are highlighted with small colored dots in purple, red, and pink. The map is centered behind the main text.

Enhanced Inter-regional Transaction Coordination

Settlement-related Changes

EITC Project Phase_1 Settlement Changes

- ◆ RT Bid Production Cost Guarantee (RT BPCG)
- ◆ Import Curtailment Supplier Guarantee
- ◆ Financial Impact Charge (FIC)

EITC Project Phase_1 Settlement Changes

RT Bid Production Cost Guarantee (BPCG)

- ◆ Eligibility changes

- *Hourly Import Transactions eligible only if Proxy only allows hourly scheduling*
- *If proxy allows intra-hour scheduling, but transaction is bid hourly then ineligible for RT BPCG for the day*
- *If Rolling RTC is export constrained due to limits on NYCA Ramp capacity in an hour, then import transactions associated with Scheduled Lines or Non-Competitive Proxy buses are ineligible for RT BPCG*

EITC Project Phase_1 Settlement Changes

RT Bid Production Cost Guarantee (BPCG)

- *No changes to the algorithm*
- *Bid cost will be computed as an area under the Decremental Bid Curve*

EITC Project Phase_1 Settlement Changes

Import Curtailment Supplier Guarantee

- ◆ Both hourly and intra-hourly Import transactions are eligible when:
 - *RT Energy Profile Mw is equal to or greater than the DAM schedule for the interval*
 - *RT Dec bid is less than or equal to the default RT Dec bid amount*
 - *the current NYISO default economic priority is (-\$0.01)*
 - *HAM Transaction was curtailed for NYISO reliability*

EITC Project Phase_1 Settlement Changes

Import Curtailment Supplier Guarantee

- ◆ Preserve DAM Margin of an Import Transaction
 - *Transaction owner will be made whole to DAM decremental bid rather than the HAM bid*
 - *Not eligible for Import Supplier Guarantee if there is no DAM schedule*

- ◆ Algorithm changes
 - *DAM Decremental bid will replace the RT Dec bid in algorithm*
 - *DAM Schedule will replace the RTC schedule in algorithm*

EITC Project Phase_1 Settlement Changes

Financial Impact Charge (FIC)

- ◆ Both hourly and intra-hourly Import transactions are eligible
- ◆ Assessed for external transactions on an interval by interval basis, as is currently done
- ◆ Use applicable RTC LBMP rather than Average RTC₁₅

EITC Project Phase_1

Financial Impact Charge (FIC)

- ◆ Applicable RTC LBMP is the LBMP that was used to schedule the transaction
 - *For Hourly transactions - - - each of the four relevant LBMPs out of the RTC₁₅ evaluation*
 - *For Intra-hour transactions (evaluated on either 15- or 5-minute basis) - - - the RTC LBMP will be the LBMP from the rolling RTC that provided a schedule for the transaction*

EITC Project Phase_1 Settlement Changes

Financial Impact Charge (FIC)

◆ Algorithm

- *For Imports: $(RTC\ Schedule - RTD\ Schedule) * [Max((RTD\ LBMP - RTC\ LBMP), 0)]$*
- *For Exports: $(RTC\ Schedule - RTD\ Schedule) * [Max((RTC\ LBMP - RTD\ LBMP), 0)]$*
- *For Wheels: Assessed as both a failed import and failed export*

EITC Project Phase_1 Settlement Changes

Customer Settlement Datamart and DSS Corporate Reports

- ◆ Changes within DSS to the Transactions, Power Suppliers and Loads Universes
- ◆ Refer to [February 16, 2011 BAWG presentation – DSS Changes](#)

New Tariff Definitions:

- ◆ **Decremental Bid:** A monotonically increasing Bid curve provided by an entity engaged in a Bilateral Import or Internal Transaction to indicate the LBMP below which that entity is willing to reduce its Generator's output, and purchase Energy in the LBMP Markets, or by an entity engaged in a Bilateral Wheel Through Transaction to indicate the Congestion Component cost below which that entity is willing to accept Transmission Service.
- ◆ **Dynamically Scheduled Proxy Generator Bus:** A Proxy Generator Bus for which the ISO may schedule Transactions at 5 minute intervals in real time.
- ◆ **Energy Profile MW:** The maximum schedule desired for an External Transaction. Import, Export and Wheels Through Transactions will specify the Energy Profile MW in their Bids

New Tariff Definitions:

- ◆ **Sink Price Cap Bid:** A Bid Price provided by an entity engaged in an Export to indicate the relevant Proxy Generator Bus LBMP below which that entity is willing to either purchase Energy in the LBMP Markets or, in the case of Bilateral Transactions, to accept Transmission Service.
- ◆ **Rolling RTC:** The RTC run that is used to schedule a given 15-minute External Transaction. The Rolling RTC may be an RTC00, RTC15, RTC30 or RTC45 run.
- ◆ **Variably Scheduled Proxy Generator Bus:** A Proxy Generator Bus for which the ISO may schedule Transactions at 15 minute intervals in real time.

Additional Resources:

- ◆ June 7, 2010 Market Issues Working Group (MIWG) meeting material
 - http://www.nyiso.com/public/webdocs/committees/bic_miwg/meeting_materials/2010-06-07/Agenda_04_EITC_Scheduling_Pricing_Concept.pdf

- ◆ December 28, 2010 Tariff Filing
 - http://www.nyiso.com/public/webdocs/documents/regulatory/filings/2010/12/NYISO_205_EITC_Filing_12-28-10.pdf

- ◆ February 16, 2011 Billing & Accounting Working Group (BAWG) meeting material – EITC Settlement Changes
 - http://www.nyiso.com/public/webdocs/committees/bic_bawg/meeting_materials/2011-02-16/EITC_Settlement_Changes_2011.pdf

Additional Resources – cont'd:

- ◆ February 16, 2011 Billing & Accounting Working Group (BAWG) meeting material – DSS Changes
 - http://www.nyiso.com/public/webdocs/committees/bic_bawg/meeting_materials/2011-02-16/BAWG_2011_02_16_EITC_DSS_.pdf

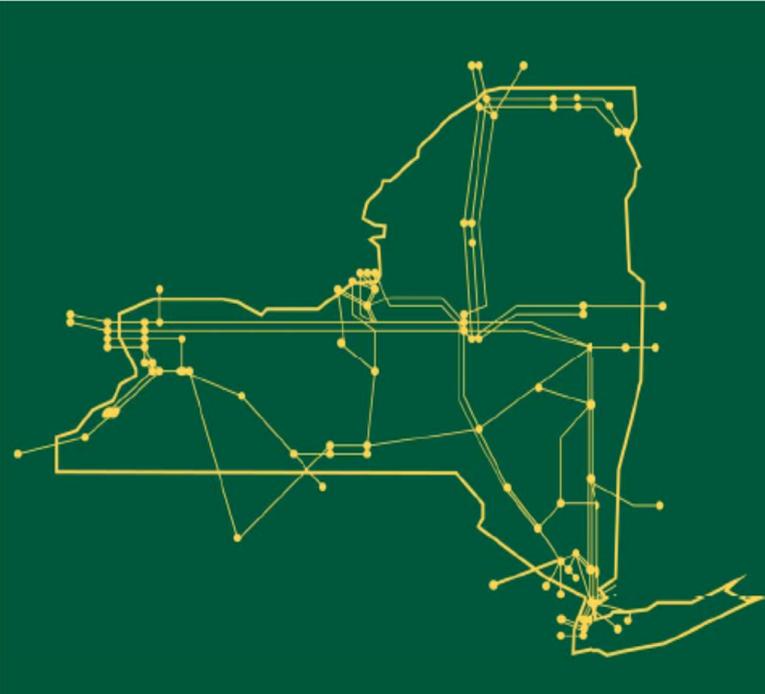
- ◆ Market Participant's User's Guide (MPUG)

- ◆ TB # 196 - *Generator and Transaction Upload/download Template Changes*

In Summary:

- ◆ **EITC Project Phase_1 highlights and timeline**
- ◆ **Bidding changes**
- ◆ **Evaluation and Scheduling Changes**
- ◆ **Settlement-related changes (including pricing rules)**
- ◆ **Upload/Download Changes**
- ◆ **New Tariff Definitions**
- ◆ **Additional Resources**

The New York Independent System Operator (NYISO) is a not-for-profit corporation responsible for operating the state's bulk electricity grid, administering New York's competitive wholesale electricity markets, conducting comprehensive long-term planning for the state's electric power system, and advancing the technological infrastructure of the electric system serving the Empire State.



www.nyiso.com