

ATTACHMENT J

I. LBMP CALCULATION METHOD

The Locational Based Marginal Prices (“LBMPs”) for Generators and Loads will be based on the system marginal costs produced by either the Security Constrained Dispatch (“SCD”) program for Real-Time Market prices, or the Security Constrained Unit Commitment (“SCUC”) program for Day-Ahead Market prices. The marginal cost of a Fixed Block Unit may only set LBMP when some portion of its Energy is necessary to meet Load, displace higher cost Energy, or satisfy Operating Reserves requirements. The marginal cost of a Fixed Block Unit may not set LBMP at any other time. During periods when Fixed Block Units are precluded from setting LBMP, the marginal cost of the most economical unit backed down to accommodate a Fixed Block Unit shall set LBMP. These System marginal costs will be utilized in an *ex post* computation to produce LBMP bus prices using the following equations.

The LBMP at bus *i* can be written as:

$$\gamma_i = \lambda^R + \gamma_i^L + \gamma_i^C$$

Where:

- γ_i = LBMP at bus *i* in \$/MWh
 λ^R = the system marginal price at the Reference Bus

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The sum of the products of these Shift Factors and the Marginal Losses Component of the LBMP at each of these Interconnection buses yields the Marginal Losses Component of the LBMP that will be used for the External bus. Therefore, the Marginal Losses Component of the LBMP at an External bus E is calculated using the equation:

$$\gamma_E^L = \sum_{b \in I} F_{Eb} (DF_b - 1) \lambda^R$$

where:

- γ_E^L = Marginal Losses Component of the LBMP at an External bus E;
 F_{Eb} = Shift Factor for the tie line going through bus b, computed for a hypothetical Bilateral Transaction from bus E to the Reference Bus;
Marginal Losses Component of the LBMP at bus b; and
 $(DF_b - 1)\lambda^R$ = The set of Interconnection buses between the NYCA and adjacent
 I = Control Areas.

II. ACCOUNTING FOR TRANSMISSION LOSSES

1.0 Charges

Subject to Attachment K of this Tariff, the ISO shall charge all Transmission Customers for transmission system losses based on the marginal cost of losses on either a bus or zonal basis, described below.

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1.1 Loss Matrix

The ISO's Security Constrained Dispatch ("SCD") program will use a loss matrix (referred to as a B matrix) and penalty factors to estimate and model losses in performing generation dispatch and billing functions for losses.

1.2 Residual Loss Payment

The ISO will determine the difference between the payments by Transmission Customers for losses and the payments to Suppliers for losses associated with all Transactions (LBMP Market or Transmission Service under Parts II, III, and IV of this Tariff) for both the Day-Ahead and Real-Time Markets. The accounting for losses at the margin may result in the collection of more revenue than is required to compensate the Generators for the Energy they produced to supply the actual losses in the system. This over collection is termed residual loss payments. The ISO shall calculate residual loss payments revenue on an hourly basis and will credit them against the ISO's Residual Adjustment (See Rate Schedule 1).

2.0 Computation of Residual Loss Payments

2.1 Marginal Losses Component LBMP

The ISO shall utilize the Marginal Losses Component of the LBMP on an internal bus, an external bus, or a zone basis for computing the marginal contribution of each Transaction to the system losses. The computation of these quantities is described in this Attachment.

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2.1.1 Marginal Losses Component Day-Ahead

The ISO shall utilize the Marginal Losses Component computed by the ISO's Security Constrained Unit Commitment ("SCUC") program for computing the marginal contributions of each Transaction in the Day-Ahead Market.

2.1.2 Marginal Losses Component Real-Time

The ISO shall utilize the Marginal Losses Component computed by the ISO's Security Constrained Dispatch ("SCD") program for computing the Marginal Losses Component associated with each Transaction scheduled in the Real-Time Market (or deviations from Transactions scheduled in the Day-Ahead Market). The computations will be performed on a SCD interval basis and aggregated to an hourly total.

2.2 Charges

Charges to reflect the impact of Energy consumed by each Load, or transmitted by each Transmission Customer on Marginal Losses Component shall be determined as follows. Each of these charges may be negative.

Day-Ahead Charges

As part of the LBMP charged to all ~~LSEs~~ Customers scheduled Day-Ahead to purchase Energy from the LBMP Market, the ISO shall charge each such ~~LSE~~ Customer the product of: (a) the

withdrawal scheduled Day-Ahead in each Load Zone by that ~~LSE- Customer~~ in each hour, in MWh; and (b) the Marginal Losses Component of the Day-Ahead LBMP in that Load Zone, in \$/MWh.

As part of the TUC charged to all Transmission Customers whose transmission service has been scheduled Day-Ahead, the ISO shall charge each such Transmission Customer the product of (a) the amount of Energy scheduled Day-Ahead to be injected and withdrawn by that Transmission Customer in each hour, in MWh; and (b) the Marginal Losses Component of the Day-Ahead LBMP at the Point of Delivery (i.e., Load Zone in which Energy is scheduled to be withdrawn or the bus where Energy is scheduled to be withdrawn under if Energy is scheduled to be withdrawn at a location outside the NYCA), minus the Marginal Losses Component of the Day-Ahead LBMP at the Point of Receipt, in \$/MWh.

Real-Time Charges

As part of the LBMP charged to all ~~LSEs- Customers~~ scheduled Day-Ahead to purchase Energy from the LBMP Market, the ISO shall charge each such ~~LSE- Customer~~ the product of (a) the Actual Energy Withdrawals by that ~~LSE- Customer~~ in each Load Zone in each hour, minus the Energy withdrawal scheduled Day-Ahead in that Load Zone by that ~~LSE- Customer~~ for that hour, in MWh; and (b) the Marginal Losses Component of the Real-Time LBMP in that Load Zone, in \$/MWh.

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- (iii) Existing intermittent (i.e., non-schedulable) renewable resource
Generators within the NYCA, plus up to an additional 50 MW of such
Generators.

This procedure shall not apply at times when the Generator supplying that transaction has been scheduled to provide Regulation or Operating Reserves.

The ISO will not schedule a Bilateral Transaction which crosses an Interface between the NYCA and a neighboring Control Area if doing so would cause the DNI to exceed the Transfer Capability of that Interface.

IV. SCHEDULING

Security Constrained Unit Commitment (“SCUC)

The ISO shall develop an SCUC schedule using a computer algorithm which simultaneously minimizes the total Bid Production cost of: (i) supplying power to satisfy all accepted purchaser's Bids to buy Energy from the Day-Ahead Market; (ii) providing sufficient Ancillary Services to support Energy purchased from the day-ahead Market; (iii) committing sufficient Capacity to meet the ISO's Load forecast and provide associated Ancillary Services; and (iv) meeting all Transmission Schedules submitted Day-Ahead. The schedule will include commitment of sufficient Generators and/or Interruptible Load to provide for reliable operation of the NYS Transmission System. In addition to all Reliability Rules, the ISO shall consider the

following information when developing the SCUC: (i) Load forecasts provided to the ISO and adjusted as required by the ISO; (ii) Ancillary Service requirements as determined by the ISO; (iii) Transmission Service schedules; (iv) price Bids and operating constraints submitted for Generator or Demand Side Resources; (v) price bids for Ancillary Services; (iv) Incremental Bids for Bilateral Transactions; (vii) ancillary Services in support of Bilateral Transactions; and (viii) Bids to purchase or sell Energy from or to the Day-ahead Market. The SCUC schedule shall list the twenty-four (24) hour injections and withdrawals for: (a) each Customer Generator ~~w~~whose Bid the ISO accepts for the following Dispatch Day, and (b) each Bilateral Transaction Scheduled Day-Ahead.

In the development of its SCUC schedule, the ISO may commit and decommit Generators based upon any flexible Bids, including Minimum Generation and Start-Up Costs, Energy, and Incremental and Decremental Bids received by the ISO.

Reliability Forecast

In the SCUC program, system operation shall be optimized over the Dispatch Day. However, to preserve system reliability, the ISO must assure that there will be sufficient Generators available to meet forecasted Load and reserve requirements over the seven-day period that begins with the next Dispatch Day. When SCUC evaluates days two through seven of the commitment cycle and determines that a long start-up time Generator is needed for reliability,

