

## **2.179 Total Transfer Capability ("TTC")**

The amount of electric power that can be transferred over the interconnected transmission network in a reliable manner.

### **2.179a Trading Hub**

A virtual location in a given Load Zone, modeled as a generator bus and/or load bus, for the purpose of transferring energy settlement obligations with the ISO via Bilateral Transactions in which both the POI and POW are located within the NYCA.

### **2.179b Trading Hub Energy Owner**

A Customer who buys energy in a Bilateral Transaction in which the POW is a Trading Hub, or who sells energy in a Bilateral Transaction in which the POI is a Trading Hub.

## **2.180 Transaction**

The purchase and/or sale of Energy or Capacity, or the sale of Ancillary Services.

## **2.181 Transfer Capability**

The measure of the ability of interconnected electrical systems to reliably move or

#### **4.92.4 Security Constrained Unit Commitment (“SCUC”)**

Subject to ISO Procedures and Good Utility Practice, the ISO will develop a SCUC schedule over the Dispatch Day using a computer algorithm which simultaneously minimizes the total Bid Production Cost of: (i) supplying power or Demand Reductions to satisfy accepted purchasers’ Bids to buy Energy from the Day-Ahead Market; (ii) providing sufficient Ancillary Services to support Energy purchased from the Day-Ahead Market consistent with the Regulation Service Demand curve and Operating Reserve Demand Curves set forth in Rate Schedules 3 and 4 respectively of this ISO Services Tariff; (iii) committing sufficient Capacity to meet the ISO’s Load forecast and provide associated Ancillary Services; and (iv) meeting Bilateral Transaction schedules submitted Day-Ahead **excluding schedules of Bilateral Transactions with Trading Hubs as their POWs**. The computer algorithm shall consider whether accepting Demand Reduction Bids will reduce the total Bid Production Cost. The schedule will include commitment of sufficient Generators and/or Demand Side Resources to provide for the safe and reliable operation of the NYS Power System. Pursuant to ISO Procedures, the ISO may schedule any Resource to run above its  $UOL_N$  up to the level of its  $UOL_E$ . In cases in which the sum of all Bilateral Schedules, **excluding Bilateral Schedules for Transactions with Trading Hubs as their POWs**, and all Day-Ahead Market purchases to serve Load within the NYCA in the Day-Ahead schedule is less than the ISO’s Day-Ahead forecast of Load, the ISO will commit Resources in addition to the Operating Reserves it normally maintains to enable it to respond to contingencies. The purpose of these additional resources is to ensure that sufficient Capacity is available to the ISO in real-time to enable it to

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meet its Load forecast (including associated Ancillary Services). In considering which additional Resources to schedule to meet the ISO's Load forecast, the ISO will evaluate unscheduled Imports, and will not schedule those Transactions if its evaluation determines the cost of those Transactions would effectively exceed a Bid Price cap in the hours in which the Energy provided by those Transactions is required. In addition to all Reliability Rules, the ISO shall consider the following information when developing the SCUC schedule: (i) Load forecasts provided to the ISO and adjusted as required by the ISO; (ii) Ancillary Service

requirements as determined by the ISO given the Regulation Service Demand Curve and Operating Reserve Demand Curves referenced above; (iii) Bilateral Transaction schedules **excluding Bilateral Schedules for Transactions with Trading Hubs as their POWs**; (iv) price Bids and operating Constraints submitted for Generators or for Demand Side Resources; (v) price Bids for Ancillary Services; (vi) Decremental Bids and Sink Price Cap Bids for External Transactions; (vii) Ancillary Services in support of Bilateral Transactions; and (viii) Bids to purchase or sell Energy from or to the Day-Ahead Market. External Transactions with minimum run times greater than one hour will only be scheduled at the requested Bid for the full minimum run time. External Transactions with identical Bids and minimum run times greater than one hour will not be prorated. The SCUC schedule shall list the twenty-four (24) hourly injections and withdrawals for: (a) each Customer whose Bid the ISO accepts for the following Dispatch Day; and (b) each Bilateral Transaction scheduled Day-Ahead **excluding Bilateral Transactions with Trading Hubs as their POWs**.

In the development of its SCUC schedule, the ISO may commit and de-commit Generators and Demand Side Resources, based upon any flexible Bids, including Minimum Generation Bids, Start-Up Bids, Curtailment Initiation Cost Bids, Energy, and Incremental Energy Bids and Decremental Bids received by the ISO provided however that the ISO shall commit zero megawatts of Energy for Demand Side Resources committed to provide Operating Reserves and Regulation Service.

The ISO will select the least cost mix of Ancillary Services and Energy from Suppliers, Demand Side Resources, and Customers submitting Virtual Transactions bids. The ISO may

provide the Transmission Owner with the Load forecast (for seven (7) days) as well as the ISO security evaluation data to enable local area reliability to be assessed.

#### **4.2.7 Day-Ahead LBMP Market Settlements**

The ISO shall calculate the Day-Ahead LBMPs for each Load Zone and at each Generator bus and Demand Reduction Bus as described in Attachment B. Each Supplier that bids a Generator into the ISO Day-Ahead Market and is scheduled in the SCUC to sell Energy in the Day-Ahead Market will be paid the product of: (a) the Day-Ahead hourly LBMP at the applicable Generator bus; and (b) the hourly Energy schedule. For each Demand Reduction Provider that bids a Demand Reduction into the Day-Ahead Market and is scheduled in SCUC to provide Energy from the Demand Reduction, the LSE providing Energy service to the Demand Side Resource that accounts for the Demand Reduction shall be paid the product of: (a) the Day-Ahead hourly LBMP at the applicable Demand Reduction Bus; and (b) the hourly demand reduction scheduled Day-Ahead (in MW). In addition, each Demand Reduction Provider that bids a Demand Reduction into the

Day-Ahead Market and is scheduled in the SCUC to provide Energy through Demand Reduction shall receive a Demand Reduction Incentive Payment from the ISO equal to the product of: (a) the Day-Ahead hourly LBMP at the Demand Reduction bus; and (b) the lesser of the actual hourly Demand Reduction or the scheduled hourly Demand Reduction (in MW). Each LSE that bids into the Day-Ahead Market, including each Customer that submits a Bid for a Virtual Transaction, and has a schedule accepted by the ISO to purchase Energy in the Day-Ahead Market will pay the product of: (a) the Day-Ahead hourly Zonal LBMP at each Point of Withdrawal; and (b) the scheduled Energy at each Point of Withdrawal. Each Customer that submits a Virtual Transaction bid into the ISO Day-Ahead Market and has a schedule accepted by the ISO to sell Energy in a Load Zone in the Day-Ahead Market will receive a payment equal to the product of (a) the Day-Ahead hourly zonal LBMP for that Load Zone; and (b) the hourly scheduled Energy for the Customer in that Load Zone. **Each Trading Hub Energy Owner who bids into the Day-Ahead Market and has its schedule(s) accepted by the ISO to sell and/or buy energy at a Trading Hub will pay or will receive a payment equal to the product of: (a) the Day-Ahead hourly zonal LBMP for the Load Zone associated with that Trading Hub; and (b) the hourly net MW position of the Trading Hub, which is the sum of the hourly scheduled injections at the Trading Hub minus the sum of the hourly scheduled withdrawals at the Trading Hub.**

Generators and Demand Side Resources may not submit separate Operating Reserves Availability Bids in real-time and will instead automatically be assigned a real-time Operating Reserves Availability Bid of zero for the amount of Operating Reserves they are capable of providing in light of their response rate (as determined under Rate Schedule 4).

**2. Bids Associated with Internal and External Bilateral Transactions**

Customers may seek to modify Bilateral Transactions that were previously scheduled Day-Ahead or propose new Bilateral Transactions, including External Transactions **but excluding Bilateral Transactions with Trading Hubs as their POWs**, for economic evaluation by RTC. Bids associated with Internal Bilateral Transactions shall be subject to the rules set forth above in Section 4.2.2(G).

Except as noted in Attachment N to this ISO Services Tariff, Sink Price Cap Bids or Decremental Bids for External Transactions may be submitted into RTC up to seventy five minutes before the hour in which the External Transaction would flow. External Transaction Bids must have a one hour duration, must start and stop on the hour, and must have constant magnitude for the hour. Intra-hour schedule changes, or Bid modifications, associated with External Transactions will not be accommodated.

#### **4.5 Real-Time Market Settlements**

Transmission Customers taking service under the Tariff, shall be subject to the Real-Time Market Settlement. All withdrawals and injections not scheduled on a Day-Ahead

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basis, including Real-Time deviations from any Bilateral Transaction schedules, shall be subject to the Real-Time Market Settlement. Transmission Customers not taking service under this Tariff shall be subject to balancing charges as provided for under the ISO OATT. Settlements with External Suppliers or External Loads will be based upon hourly scheduled withdrawals or injections. Real-Time Market Settlements for injections by Resources supplying Regulation Service or Operating Reserves shall follow the rules which are described in Rate Schedules 3 and 4, respectively.

For the purposes of this section, the scheduled output of each of the following Generators in each RTD interval shall retroactively be set equal to its actual output in that RTD interval:

- (i) Generators providing Energy under contracts executed and effective on or before November 18, 1999 (including PURPA contracts) in which the power purchaser does not control the operation of the supply source but would be responsible for penalties for being off-schedule, with the exception of Generators under must-take PURPA contracts executed and effective on or before November 18, 1999 who have not provided telemetering to their local TO and historically have not been eligible to participate in the NYPP market, which will continue to be treated as TO Load modifiers under the ISO-administered markets;
- (ii) Existing topping turbine Generators and extraction turbine Generators producing electric Energy resulting from the supply of steam to the district

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steam system located in New York City (LBMP Zone J) in operation on or before November 18, 1999 and/or topping or extraction turbine Generators utilized in replacing or repowering existing steam supplies from such units (in accordance with good engineering and economic design) that cannot follow schedules, up to a maximum total of 499 MW of such units.

This procedure shall not apply to a Generator for those hours it has bid in a manner that indicates it is available to provide Regulation Service or Operating Reserves.

In subsections A, B, C, D, E and F of this Section ~~4.4.5~~ 4.5, references to “scheduled” Energy injections and withdrawals shall encompass injections and withdrawals that are scheduled Day-Ahead, as well as injections and withdrawals that occur in connection with real-time Bilateral Transactions. In subsections A, C, D and F of this Section ~~4.4.5~~ 4.5, references to Energy Withdrawals and Energy Injections shall not include Energy Withdrawals or Energy Injections in Virtual Transactions, or Energy Withdrawals or Energy Injections at Trading Hubs. In Subsection G of this Section 4.5, references to “scheduled” Energy Withdrawals and Energy Injections shall mean Real-Time schedules of Bilateral Transactions with Trading Hubs as their POIs or POWs.

Generators that are providing Regulation Service shall not be subject to the real-time Energy market settlement provisions set forth in this Section, but shall instead be subject to the Energy settlement rules set forth in Section 6.0 of Rate Schedule 3 of this ISO Services Tariff.

product of: (1) the Real-Time LBMP calculated in that RTD Interval for the applicable Generator bus; and (2) the actual Energy injection minus the Energy injection scheduled Day-Ahead. Generators will not be compensated for Energy produced during their start-up sequence.

**G. Settlement for Trading Hub Energy Owner**

For each Trading Hub Energy Owner who bids into the Real-Time Market and has its schedule(s) accepted by the ISO to sell and/or buy energy at a Trading Hub, the ISO shall calculate the net trading hub energy position for the organization, for the zone, and for each hour. The ISO will calculate the hourly net MW position of the Trading Hub Energy Owner as the sum of the hourly scheduled energy injections at the zonal Trading Hub minus the sum of the hourly scheduled energy withdrawals at the zonal Trading Hub. The Trading Hub Energy Owner will pay or will receive an hourly payment equal to the product of: (a) the hourly integrated Real-Time LBMP for the applicable Load Zone associated with that Trading Hub; and (b) the hourly net MW position of the Trading Hub.

**4.5a Payments to Suppliers of Regulation Service**

Suppliers of Regulation Service shall receive a payment that is calculated pursuant to Rate Schedule 3 of this ISO Services Tariff

**4.6 Payments to Suppliers of Reactive Supply and Voltage Support Service (“Voltage Support Service”)**

Suppliers of Voltage Support Service shall receive a Voltage Support Service payment in accordance with the criteria and formula in Rate Schedule 2.

**4.7 Payments to Suppliers for Operating Reserves**