

# Attachment I

## **16.2 Accounting for Transmission Losses**

### **16.2.1 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.

#### **16.2.1.1 Loss Matrix**

The ISO's RTD software will use a power flow model and penalty factors to estimate losses incurred in performing generation dispatch and billing functions for losses.

#### **16.2.1.2 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 Sections 3, 4, and 5 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 of the ISO OATT).

## **16.2.2 Computation of Residual Loss Payments**

### **16.2.2.1 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.

### **16.2.2.2 Marginal Losses Component Day-Ahead**

The ISO shall utilize the Marginal Losses Component computed by computing the marginal contributions of each Transaction in the Day-Ahead Market.

### **16.2.2.3 Marginal Losses Component Real-Time**

The ISO shall utilize the Marginal Losses Component calculated by the (i) RTD programs in most cases; or (ii) during intervals when the conditions specified in Part 17.1 of Attachment B of the Services Tariff exist at Proxy Generator Buses, the RTC 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 an RTD-interval basis and aggregated to an hourly total.

### **16.2.2.4 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.

### **16.2.2.5 Day-Ahead Charges**

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

scheduled Day-Ahead in each Load Zone by that LSE 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 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.

#### **16.2.2.6 Real-Time Charges**

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

As part of the TUC charged to all Transmission Customers whose transmission service was scheduled after the determination of the Day-Ahead schedule, or who schedule additional transmission service after the determination of the Day-Ahead schedule, the ISO shall charge each such Transmission Customer the product of (a) Actual Energy Withdrawals by RTD in each hour, minus the amount of Energy scheduled Day-Ahead to be withdrawn by that Transmission

Customer in that hour, in MWh; and (b) the Marginal Losses Component of the Real-Time LBMP at the Point of Delivery (*i.e.*, the Load Zone in which Energy is scheduled to be withdrawn or the external bus where Energy is scheduled to be withdrawn if Energy is scheduled to be withdrawn at a location outside the NYCA), minus the Marginal Losses Component of the Real-Time LBMP at the Point of Receipt, in \$/MWh.

**31      Attachment P – Coordinated Transaction Scheduling Actions, Thresholds and Triggers**

### **31.1 Background and Overview**

This Attachment P describes the process for pursuing amendments to the ISO tariff in the event that the production cost savings of the ISO's interchange on the NYISO – ISO-NE AC Interface and the Northport/Norwalk Line (both together - "NYISO / ISO-NE Interface"), following the implementation of an Inter-Regional Interchange Scheduling process known as Coordinated Transaction Scheduling ("CTS") on the NYISO/ISO-NE Interface, are not satisfactory. The determination of whether savings are satisfactory will be based on actions, thresholds and triggers described in this Attachment P. The actions, thresholds and triggers described in this Attachment P shall only be measured based upon interchange schedules and estimated schedules at the CTS Enabled Proxy Generator buses on the NYISO / ISO-NE Interface.

If pursuant to the actions, thresholds and triggers described in this Attachment P, the production cost savings of CTS are not satisfactory, and a superior alternative has not become known, the ISO will develop tariff amendments, for filing with the Commission pursuant to Section 31.5, to implement the Inter-Regional Interchange Scheduling process described to the ISO stakeholders in 2011 as Tie Optimization.

If, pursuant to the timetables presented, the ISO determines the thresholds described herein have not triggered, the process for filing amendments to the ISO tariff as described herein ceases, the provisions of this Attachment P become null and void and the ISO continues to implement CTS unless and until future Section 205 filings are pursued to amend CTS.

### **31.2 The Two-Year Analysis**

Within 120 days of the close of the first and second years following the date that CTS as an interface scheduling tool is activated in the ISO and ISO-NE markets, the Market Monitoring Unit (MMU) of the ISO will develop, for presentation to and comment by ISO stakeholders, an analysis, of: (i) the actual bid production cost savings of incremental interchange that would have occurred had the ISOs had an infinite number of zero bids in the CTS process, which utilizes the supply curves and forecasted prices for each market (“Tie Optimization interchange”); and (ii) the actual bid production cost savings of incremental interchange that would have occurred had the ISOs had an infinite number of zero bids in the CTS process, but utilizing actual real-time prices from each market rather than the forecasted prices that were used in the CTS process (“optimal interchange”).

The bid production cost savings associated with Tie Optimization interchange as developed in 31.2(i) for the second year following the date that CTS is activated in the ISO and ISO-NE markets, will reveal the “foregone” production cost savings from implementing CTS rather than Tie Optimization, represented in the Section 31.2.1 formula as the term “b.” The difference in bid production cost savings between 31.2 (i) and 31.2 (ii) for the second year following the date that CTS is activated in the ISO and ISO-NE markets will reveal the “foregone” bid production cost savings of the Tie Optimization interchange rather than an optimal interchange, represented in the Section 31.2.1 formula as the term “a.”

This analysis will be consistent with the presentation Benefits of Coordinating the Interchange Between New York and New England made by Dr. David Patton of the MMU to the ISO’s stakeholders on January 21, 2011. The bid production cost savings will be calculated in accordance with, and the operation of the threshold and trigger will be consistent with, the



presentation Potential Trigger to Switch from CTS to TO made by Dr. David Patton of the MMU to the ISO's stakeholders on August 9, 2011.

**31.2.1 Using these calculations, the MMU will compute the following ratio:**

$b/a$

If, the ratio  $b/a$  is greater than 60% and  $b$  is greater than \$3 Million, the MMU will advise whether in its opinion the threshold has triggered.

### **31.3 Improving CTS**

31.3.1 If the ratio  $b/a$ , developed pursuant to Section 31.2.1 of this Attachment P, is greater than 60% and  $b$  is greater than \$3 Million, the ISO will declare whether the threshold has triggered considering the input of the MMU and stakeholders.

31.3.2 If the ISO declares the threshold has not triggered the process further described in this Attachment P becomes null and void.

31.3.3 If the ISO declares that the threshold has triggered, the MMU will provide recommendations of adjustments to the design or operation of CTS to improve the production cost savings available from its implementation.

31.3.4 The ISO, considering the input of its stakeholders and the recommendation of the MMU, will develop and implement adjustments to CTS. To the extent tariff revisions are necessary to implement the adjustments to CTS, the ISO will file such revisions with the Commission as a compliance filing in the CTS docket, pursuant to the process described in Section 31.5. If no adjustments to CTS have been identified, the ISO will proceed to develop and file the revisions necessary to amend the ISO Tariffs to implement the Inter-Regional Interchange Scheduling Practice known as Tie Optimization as a compliance filing, pursuant to the process described in Section 31.5.

## **31.4 The Second Analysis**

31.4.1 Within 120 days of the close of the twelve months following the date that the adjustments to CTS, developed under Section 31.3.4, are activated in the ISO and ISO-NE markets, the MMU of the ISO will develop a second analysis, for presentation to and comment by ISO stakeholders. The analysis will be consistent with the analysis described in Section 31.2 of this Attachment P but will develop bid production cost savings for the twelve month period during which the adjustments developed in Section 31.3.4 are in place.

31.4.2 The bid production cost savings associated with Tie Optimization interchange as developed in Section 31.4.1 will reveal the “foregone” bid production cost savings from implementing CTS rather than Tie Optimization, represented in the Section 31.4.3 formula as the term “b.” The difference in bid production cost savings between the Tie Optimization interchange and the optimal interchange, as developed in Section 31.4.1, will reveal the “foregone” bid production cost savings of the Tie Optimization interchange rather than optimal interchange, represented in the Section 31.4.3 formula as the term “a.”

31.4.3 Using these calculations, the MMU will compute the following ratio:

$b/a$

If the ratio  $b/a$  is greater than 60% and  $b$  is greater than \$3 Million, the MMU will advise whether in its opinion the threshold has triggered.

31.4.4 If the ratio  $b/a$  is greater than 60% and  $b$  is greater than \$3 Million, the ISO will declare whether the threshold has triggered considering the input of the MMU and their respective stakeholders.

31.4.5 If the ISO declares the threshold has not triggered the process further described in this Attachment P becomes null and void.

31.4.6 If the ISO declares the threshold has triggered, considering the input of the stakeholders and the recommendation of the MMU, the ISO will determine whether a superior alternative has been proposed, considering the input of the stakeholders and the recommendation of the MMU. If the ISO determines a superior alternative has been proposed, the ISO will prepare tariff amendments for a filing with the Commission to implement the superior alternative utilizing the process for amending the NYISO Tariffs set forth in Article 19 of the ISO Agreement and will not pursue the balance of the actions required by this Attachment P.

31.4.7 If the ISO determines a superior alternative has not been proposed, the ISO will proceed to develop and file the revisions necessary to amend the ISO Tariffs to implement the Inter-Regional Interchange Scheduling Practice known as Tie Optimization as a compliance filing, pursuant to the process described in Section 31.5. Tie Optimization was described for Stakeholders in the Design Basis Document for NE/NY Inter-Regional Interchange Scheduling presented at a Business Issues Committee meeting June 1, 2011.

### **31.5 The Compliance Filing**

31.5.1 The filing of Tariff revisions with the Commission pursuant to Sections 31.3.4 and/or Section 31.4.7 shall be pursuant to this section.

The ISO will present to its Board tariff language to implement changes to CTS, developed pursuant to Section 31.3.4, for filing through a compliance filing under Section 205 of the Federal Power Act, following stakeholder review and comment, which comments shall be shared with the ISO Board for use as it deliberates the tariff amendments proposed to be filed with the Commission.

The ISO will present to its Board tariff language to implement Inter-Regional Interchange Scheduling Practice known as Tie Optimization, pursuant to Section 31.4.7, through a compliance filing under Section 205 of the Federal Power Act, following stakeholder review and comment, which comments shall be shared with the ISO Board for its use as it deliberates the tariff amendments proposed to be filed with the Commission.