Attachment III

1.1 Definitions - A

Accepted Revision: A change to the terms of an Existing Transmission Agreement for purposes of ISO Settlements, which change is related to a Grandfathered Right or Grandfathered TCC and is made pursuant to the procedures prescribed in Section 17 Attachment K of the ISO OATT.

Actual Energy Injections: Energy injections that are measured using a revenue-quality real-time meter.

Actual Energy Withdrawals: Energy withdrawals which are either: (1) measured with a revenue-quality real-time meter; (2) assessed (in the case of LSEs serving retail customers where withdrawals are not measured by revenue-quality real-time meters) on the basis provided for in a Transmission Owner's retail access program; or (3) calculated (in the case of wholesale customers where withdrawals are not measured by revenue-quality real-time meters), until such time as revenue-quality real-time metering is available on a basis agreed upon by the unmetered wholesale customers. For purposes of the allocation of the ISO annual budgeted costs pursuant to Rate Schedule 1 of this ISO OATT, withdrawals shall also include the absolute value of negative withdrawals by Load for behind the meter generation.

Advance Reservation: (1) A reservation of transmission service over the Cross-Sound Scheduled Line that is obtained in accordance with the applicable terms of Schedule 18 and the Schedule 18 Implementation Rule of the ISO New England Inc. Transmission, Markets and Services Tariff, or in accordance with any successors thereto; or (2) A right to schedule transmission service over the Neptune Scheduled Line that is obtained in accordance with the rules and procedures established pursuant to Section 38 of the PJM Interconnection, L.L.C. Open Access Transmission Tariff and set forth in a separate service schedule under the PJM Interconnection, L.L.C. Open Access Transmission Tariff; or (3) A right to schedule transmission service over the Linden VFT Scheduled Line that is obtained in accordance with the rules and procedures established pursuant to Section 38 of the PJM Interconnection, L.L.C. Open Access Transmission Tariff and set forth in a separate service schedule under the PJM Interconnection, L.L.C. Open Access Transmission Tariff; or (4) A right to schedule transmission service over the HTP Scheduled Line that is obtained in accordance with the rules and procedures established pursuant to Section 38 of the PJM Interconnection, L.L.C. Open Access Transmission Tariff and set forth in a separate service schedule under the PJM Interconnection, L.L.C. Open Access Transmission Tariff.

Affiliate: With respect to a person or entity, any individual, corporation, partnership, firm, joint venture, association, joint-stock company, trust or unincorporated organization, directly or indirectly controlling, controlled by, or under common control with, such person or entity. The term "control" shall mean the possession, directly or indirectly, of the power to direct the management or policies of a person or an entity. A voting interest of ten percent or more shall create a rebuttable presumption of control.

Ancillary Services: Those services that are necessary to support the transmission of Capacity and Energy from resources to Loads while maintaining reliable operation of the NYS Transmission System in accordance with Good Utility Practice.

Annual Transmission Costs: The total annual cost of the Transmission System for purposes of Network Integration and Point-to-Point Transmission Services shall be the amount specified in Attachment H until amended by the Transmission Owners or modified by the Commission.

Annual Transmission Revenue Requirement: The total annual cost for each Transmission Owner (other than LIPA) to provide transmission service subject to review and acceptance by FERC or other authority.

Application: A request to receive Transmission Service by an Eligible Customer pursuant to the provisions of this Tariff that includes all information reasonably requested by the ISO.

Automatic Generation Control ("AGC"): The automatic regulation of the power output of electric generating facilities within a prescribed range in response to a change in system frequency, or tie-line loading, to maintain system frequency or scheduled interchange with other areas within predetermined limits.

Availability: A measure of time that a generating facility, transmission line or other facility is or was capable of providing service, whether or not it actually is in-service.

Available Generating Capacity: Generating Capacity that is on line to serve Load and/or provide Ancillary Services, or is capable of initiating start-up for the purpose of serving Transmission Customers or providing Ancillary Services, within thirty (30) minutes.

Available Reserves: For purposes of determining the Real-Time Locational Based Marginal Price in any Real-Time Dispatch interval: the capability of all Suppliers that submit Energy Bids to provide Spinning Reserves, Non-Synchronized 10-Minute Reserves, and 30-Minute Reserves in that interval, and in the relevant location, and the quantity of recallable external ICAP energy sales in that interval.

Available Transfer Capability ("ATC"): A measure of the Transfer Capability remaining in the physical transmission network for further commercial activity, over and above already committed uses, calculated using the methodology described in Attachment C in the OATT.

1.8 Definitions - H

HTP Scheduled Line: A transmission facility that interconnects the NYCA to the PJM Interconnection, L.L.C. Control Area at the West 49th Street Substation, New York, NY and terminates in Ridgefield, New Jersey.

1.18 Definitions - R

RCRR TCC: A Load Zone-to-Load Zone TCC created when a Transmission Owner with a RCRR exercises its right to convert the RCRR into a TCC pursuant to Section 19.5.4 of Attachment M of this ISO OATT.

Reactive Power (MVAr): The product of voltage and the out-of-phase component of alternating current. Reactive Power, usually measured in MVAr, is produced by capacitors (synchronous condensers), over-excited Generators, and Qualified Non-Generator Voltage Support Resources, and absorbed by reactors or under-excited Generators and other inductive devices including the inductive portion of Loads.

Ramp Capacity: The amount of change in the Desired Net Interchange that generation located in the NYCA can support at any given time. Ramp Capacity may be calculated for all Interfaces between the NYCA and neighboring Control Areas as a whole or for any individual Interface between the NYCA and an adjoining Control Area.

Real Power Losses: The loss of Energy, resulting from transporting power over the NYS Transmission System, between the Point of Injection and Point of Withdrawal of that Energy.

Real-Time Bid: A Bid submitted into the Real-Time Commitment before the close of the Real-Time Scheduling Window. A Real-Time Bid shall also include a CTS Interface Bid.

Real-Time Commitment ("RTC"): A multi-period security constrained unit commitment and dispatch model that co-optimizes to solve simultaneously for Load, Operating Reserves and Regulation Service on a least as-bid production cost basis over a two hour and fifteen minute optimization period. The optimization evaluates the next ten points in time separated by fifteen minute intervals. Each RTC run within an hour shall have a designation indicating the time at which its results are posted: "RTC_{00}," RTC_{30}, and "RTC_{45}: post on the hour, and at fifteen, thirty, and forty-five minutes after the hour, respectively. Each RTC run will produce binding commitment instructions for the periods beginning fifteen and thirty minutes after its scheduled posting time and will produce advisory commitment guidance for the remainder of the optimization period, RTC_{15} will also establish hourly External Transaction schedules, while all RTC runs may establish 15 minute External Transaction schedules at Variably Scheduled Proxy Generator Buses. Additional information about RTC's functions is provided in Section 4.4.2 of the ISO Services Tariff.

Real-Time Dispatch ("RTD"): A multi-period security constrained dispatch model that co-optimizes to solve simultaneously for Load, Operating Reserves, and Regulation Service on a least-as-bid production cost basis over a fifty, fifty-five or sixty-minute period (depending on

when each RTD run covers within an hour). The Real-Time Dispatch dispatches, but does not commit, Resources, except that RTD may commit, for pricing purposes, Resources meeting Minimum Generation Levels and capable of starting in ten minutes. RTD may also establish 5-minute External Transaction schedules at Dynamically Scheduled Proxy Generator Buses. Real-Time Dispatch runs will normally occur every five minutes. Additional information about RTD's functions is provided in Section 4.4.3 of the ISO Services Tariff. Throughout the ISO Services Tariff the term "RTD" will normally be used to refer to both the Real-Time Dispatch and to the specialized Real-Time Dispatch Corrective Action Mode software.

Real-Time Dispatch-Corrective Action Mode ("RTD-CAM"): A specialized version of the Real-Time Dispatch software that will be activated when it is needed to address unanticipated system conditions. RTD-CAM is described in Section 4.4.4 of the ISO Services Tariff.

Real-Time LBMP: The LBMPs established through the ISO Administered Real- Time Market.

Real-Time Market: The ISO Administered Markets for Energy and Ancillary Services resulting from the operation of the RTC and the RTD.

Real-Time Scheduling Window: The period of time within which the ISO accepts offers and Bids to sell and purchase Energy and Ancillary Services in the real-time market which period closes seventy-five (75) minutes before each hour, or eighty-five (85) minutes before each hour for Bids to schedule External Transactions at the Proxy Generator Buses associated with the Cross-Sound Scheduled Line, the Neptune Scheduled Line, the Linden VFT Scheduled Line, or the HTP Scheduled Line.

Reconfiguration Auction: The monthly auction administered by the ISO in which Transmission Customers may purchase and sell one-month TCCs.

Reduction or Reduce: The partial or complete reduction in non-Firm Transmission Service as a result of transmission Congestion (either anticipated or actual).

Reference Bus: The location on the NYS Transmission System relative to which all mathematical quantities, including Shift Factors and penalty factors relating to physical operation, will be calculated. The NYPA Marcy 345 kV transmission substation is designated as the Reference Bus.

Regional Transmission Group (RTG): A voluntary organization of transmission owners, transmission users and other entities approved by the Commission to efficiently coordinate transmission planning (and expansion), operation and use on a regional (and interregional) basis.

Regulation Service Demand Curve: A series of quantity/price points that defines the maximum Shadow Price for Regulation Service corresponding to each possible quantity of Resources that the ISO's software may schedule to satisfy the ISO's Regulation Service constraint. A single Regulation Service Demand Curve will apply to both the Day-Ahead Market and the Real-Time Market for Regulation Service. The Shadow Price for Regulation Service shall be used to calculate Regulation Service payments under Rate Schedule 3 of the Service Tariff.

Reliability Rules: Those rules, standards, procedures and protocols developed and promulgated by the NYSRC, including Local Reliability Rules, in accordance with NERC, NPCC, FERC, PSC and NRC standards, rules and regulations, and other criteria and pursuant to the NYSRC Agreement.

Required System Capability: Generation capability required to meet an LSE's peak Load plus Installed Capacity reserve obligation as defined in the Reliability Rules.

Reserved Capacity: The maximum amount of Capacity and Energy that the ISO agrees to transmit for the Transmission Customer over the NYS Transmission System between the Point(s) of Receipt and the Point(s) of Delivery under Part 3 of this Tariff. Reserved Capacity shall be expressed in terms of whole megawatts on a sixty (60) minute interval (commencing on the clock hour) basis.

Residual Adjustment: The adjustment made to ISO costs that are recovered through Schedule 1. The Residual Adjustment is calculated pursuant to Schedule 1.

Residual Capacity Reservation Right ("RCRR"): A megawatt of transmission capacity from one Load Zone to an electrically contiguous Load Zone, each of which is internal to the NYCA, that may be converted into an RCRR TCC by a Transmission Owner allocated the RCRR pursuant to Section 19.5 of Attachment M.

Residual Transmission Capacity: The transmission capacity determined by the ISO before, during and after the Centralized TCC Auction which is conceptually equal to the following:

Residual Transmission Capacity = TTC - TRM - CBM - GTR - GTCC - ETCNL

The TCCs associated with Residual Transmission Capacity cannot be accurately determined until the Centralized TCC Auction is conducted.

TTC is the Total Transfer Capability that can only be determined after the Residual Transmission Capacity is known.

GTR is the transmission capacity associated with Grandfathered Rights.

GTCC is the transmission capacity associated with Grandfathered TCCs.

ETCNL is the transmission capacity associated with Existing Transmission Capacity for Native Load.

TRM is the Transmission Reliability Margin.

CBM is the Capacity Benefit Margin.

Rolling RTC: The RTC run that is used to schedule a given 15-minute External Transaction. The Rolling RTC may be an RTC_{00}, RTC_{15}, RTC_{30} or RTC_{45} run.

3 Point-To-Point Transmission Service

Preamble

The ISO will provide Firm and Non-Firm Point-To-Point Transmission Service pursuant to the applicable terms and conditions of this Tariff over the NYS Transmission System. Point-To-Point Transmission Service is for the receipt of Energy at designated Point(s) of Receipt and the transfer of such Energy to designated Point(s) of Delivery. Firm Point-To-Point Transmission Service is service for which the Transmission Customer has agreed to pay the Congestion Rent associated with its service. Non-Firm Point-To-Point Transmission Service is service for which the Transmission Customer has not agreed to pay Congestion Rent. A Transmission Customer may fix the price of Day-Ahead Congestion Rent associated with its Firm Point-To-Point Transmission Service by acquiring sufficient TCCs with the same Points of Receipt and Delivery as its Transmission Service. Notwithstanding any provision in this Part to the contrary, External Transactions scheduled at the Proxy Generator Buses associated with the Cross-Sound Scheduled Line, the Neptune Scheduled Line, the Linden VFT Scheduled Line, or the HTP Scheduled Line shall be subject to the requirements of Attachment N to the ISO Services Tariff. Each Transmission Customer also utilizes Market Services and shall take service under the ISO Market Services Administration and Control Area Services Tariff.

3.1 Nature of Firm Point-To-Point Transmission Service

3.1.1 Term:

The minimum term of Firm Point-To-Point Transmission Service shall be provided in nominal one hour increments and the maximum term shall not exceed the maximum permissible term as specified in ISO Procedures.

3.1.2. Reservation Priority:

All requests for Firm Point-to-Point Transmission Service will be deemed to have the same reservation priority. Firm Point-to-Point Transmission Service will have the same priority as Network Service subject to Section 3.1.6. All Firm Point-to-Point Transmission Service will have priority over Non-Firm Point-to-Point Transmission Service under the Tariff.

3.1.3 Use of Firm Transmission Service by the Transmission Owner(s):

The Transmission Owner will be subject to the rates, terms and conditions of Part 3 of the Tariff when making Third-Party Sales under (i) agreements executed on or after the effective date of ISO, or (ii) agreements executed prior to the aforementioned date that the Commission requires to be unbundled, by the date specified by the Commission. The Transmission Owners will maintain separate accounting, pursuant to Section 2.8, for any use of the Point-To-Point Transmission Service to make Third-Party Sales.

3.1.4 Service Agreements:

The ISO shall offer a standard form Firm Point-To-Point Transmission Service Agreement (Attachment A) to an Eligible Customer when it submits a Completed Application for Firm Point-To-Point Transmission Service. Executed Service Agreements that contain the information required under this Tariff shall be filed with the Commission in compliance with

applicable Commission regulations.

3.1.5 Transmission Customer Obligation for Facility Additions or Redispatch Cost:

The ISO continuously redispatches all resources subject to its control in order to meet Load and to accommodate requests for a Firm Transmission Service through the use of SCUC, RTC, and RTD. Firm Point-To-Point Transmission Customers are charged for these redispatch costs in accordance with Attachment J. Transmission Owner(s) will be obligated to expand or upgrade its Transmission System pursuant to the terms of Section 3.7. The Transmission Customer or Eligible Customer must agree to compensate the Transmission Owner(s) for any necessary transmission facility additions pursuant to Section 3.7.

3.1.6 Curtailment of Firm Transmission Service:

In the event that a Curtailment on the NYS Transmission System, or a portion thereof, is required to maintain reliable operation of such system, Curtailments will be made on a non-discriminatory basis to the Transaction(s) that effectively relieve the Constraint. When applicable, the ISO will follow the Lake Erie Emergency Redispatch ("LEER") Procedure filed on February 26, 1999, in Docket No. EL99-52-000 which is incorporated by reference herein. The LEER Procedure is intended to prevent the necessity of implementing the Curtailment procedures contained in the Commission and NERC tariffs and policies. To the extent possible, Curtailments of External Transactions at the Proxy Generator Buses associated with the Cross-Sound Scheduled Line, the Neptune Scheduled Line, the Linden VFT Scheduled Line, or the HTP Scheduled Line shall be based on the transmission priority of the associated Advance Reservation for use of the Cross-Sound Scheduled Line, the Neptune Scheduled Line, the Linden VFT Scheduled Line, or the HTP Scheduled Line (as appropriate). The ISO reserves the right to

Curtail Firm Transmission Service provided under this Tariff for reliability reasons, in whole or in part, when, in the ISO's sole discretion, an Emergency or other unforeseen condition threatens to or does impair or degrade the reliability of the NYS Power System. The ISO will notify all affected Transmission Customers in a timely manner of any scheduled Curtailments. If the ISO declares a Major Emergency State, Transmission Customers shall comply with all directions issued by the ISO concerning the avoidance, management, and alleviation of the Major Emergency and shall comply with all procedures concerning a Major Emergency set forth in the ISO Procedures and the Reliability Rules. If the ISO is required to Curtail Transmission Service as a result of a Transmission Loading Relief ("TLR") event, the ISO will perform such Curtailment in accordance with the NERC TLR Procedure.

3.1.7 Classification of Firm Transmission Service:

3.1.7.1 The Transmission Customer taking Firm Point-To-Point Transmission Service may (1) change its Receipt and Delivery Points to obtain service on a non-firm basis consistent with the terms of Section 3.15.1 or (2) request a modification of the Points of Receipt or Delivery on a firm basis pursuant to the terms of Section 3.15.2.

3.1.7.2 The ISO shall provide firm Transmission Service for the delivery of Energy from the Point(s) of Receipt to the Point(s) of Delivery. Each Point of Receipt shall be set forth in the Firm Point-To-Point Service schedule submitted by the Transmission Customer.

3.1.8 Scheduling of Firm Point-To-Point Transmission Service:

3.1.8.1 In the Day-Ahead Market: Schedules for the Transmission Customer's Firm Point-to-Point Transmission Service Day-Ahead must be submitted to the

ISO no later than 5:00 a.m. of the day prior to commencement of the Dispatch Day or 4:50 a.m. for Transmission Service over the Cross-Sound Scheduled Line, the Neptune Scheduled Line, the Linden VFT Scheduled Line, or the HTP Scheduled Line. Schedules involving the use of LIPA's facilities shall be treated in accordance with Section 2.5.7. Schedules submitted after 5:00 a.m., or 4:50 a.m. as appropriate, will not be accepted in the Day-Ahead schedule. Schedules of Energy to be delivered must be stated in increments of 1,000 kWh per hour between each Point of Receipt and corresponding Point of Delivery. For Firm Transmission Service requests between a Point of Receipt and Point of Delivery that are internal to the NYCA, and between a Point of Receipt at the Proxy Generator Bus designated for Imports and a Point of Delivery that is a Load Bus internal to the NYCA, the ISO will furnish to the Transmission Customer hour-to-hour schedules equal to those requested and shall deliver the Energy provided by such schedules. Energy shall be provided from the Point of Receipt if economic, and from the LBMP Market otherwise. For Firm Transmission Service requests between a Point of Delivery at the Proxy Generator Bus designated for Exports and a Point of Receipt that is a Generator Bus internal to the NYCA the ISO will furnish to the Transmission Customer, hour-to-hour schedules equal to the Export Transaction schedule and shall deliver the Energy provided by such schedules. For Firm Transmission Service requests between a Point of Receipt at the Proxy Generator Bus designated for Imports and a Point of Delivery at the Proxy Generator Bus designated for Exports, the ISO will furnish to the Transmission Customer hour-to-hour schedules equal to the Wheel-Through Transaction

schedule and shall deliver the Energy provided by such schedules. Should the Transmission Customer revise or terminate any schedule, such party shall notify the ISO prior to the close of the Real-Time Scheduling Window, and the ISO shall have the right to adjust accordingly the schedule for Energy to be received and to be delivered.

3.1.8.2 In the Real-Time Market: Schedules for the Transmission Customer's Firm Point-to-Point Transmission Service in Real-Time must be submitted to the ISO no later than the close of the Real-Time Scheduling Window.

Schedules involving the use of LIPA's facilities shall be treated in accordance with Section 2.5.7. Schedules submitted after the close of the Real-Time Scheduling Window shall not be accepted in the Real-Time schedule. Schedules of any Energy that is to be delivered must be stated in increments of 1,000 kWh per hour between each Point of Receipt and corresponding Point of Delivery. For Firm Transmission Service requests between a Point of Receipt and Point of Delivery that are internal to the NYCA, or between a Point of Receipt at the Proxy Generator Bus designated for Imports and a Point of Delivery that is a Load Bus internal to the NYCA, the ISO will furnish to the Transmission Customer schedules equal to those requested and shall deliver the Energy provided by such schedules. Energy shall be provided from the Point of Receipt if economic, and from the LBMP Market otherwise. For Firm Transmission Service requests between a Point of Delivery at the Proxy Generator Bus designated for Exports and a Point of Receipt that is a Generator Bus internal to the NYCA, the ISO will furnish to the Transmission Customer schedules equal to the Export

Transaction schedule and shall deliver the Energy provided by such schedules. For Firm Transmission Service requests between a Point of Receipt at the Proxy Generator Bus designated for Imports and a Point of Delivery at the Proxy Generator Bus designated for Exports, the ISO will furnish to the Transmission Customer hour-to-hour schedules equal to the Wheel-Through Transaction schedule and shall deliver the Energy provided by such schedules. Should the Transmission Customer revise or terminate any schedule, such party shall notify the ISO prior to the close of the Real-Time Scheduling Window and the ISO shall have the right to adjust accordingly the schedule for Energy to be received and to be delivered.

3.2 Nature of Non-Firm Point-To-Point Transmission Service:

3.2.1 Term:

The minimum term of Non-Firm Point-To-Point Transmission Service shall be one (1) hour and the maximum term shall not exceed the maximum permissible term as specified by the Transmission Customer.

3.2.2 Reservation Priority:

Non-Firm Point-to-Point Transmission Service shall be available for an Export Bilateral Transaction, an Import Bilateral Transaction, or a Wheel-Through Transaction when there is no Congestion between the Point(s) of Receipt and the Point(s) of Delivery for the Transaction. In all instances, Non-Firm Point-to-Point Transmission Service shall have a lower priority than Firm Point-to-Point Transmission Service and Network Service. Non-Firm Point-to-Point Transmission Service shall have an equal priority with Network Service from a secondary resource. A customer requesting non-firm Transmission Service that cannot be accommodated in the Day-Ahead Schedule because of Congestion may upgrade to Firm Point-to-Point Transmission Service up to the close of the Real-Time Scheduling Window, by rescheduling the Transaction and agreeing to pay the real-time Congestion Rents associated with the Transaction.

3.2.3 Use of Non-Firm Point-To-Point Transmission Service by the Transmission Owner:

The Transmission Owners will be subject to the rates, terms and conditions of Part 3 of this Tariff when making Third-Party Sales under (i) agreements executed on or after the date this Tariff is effective or (ii) agreements executed prior to the aforementioned date that the Commission requires to be unbundled, by the date specified by the Commission. The Transmission Owners will maintain separate accounting, pursuant to Section 8, for any use of

Non-Firm Point-To-Point Transmission Service to make Third-Party Sales.

3.2.4 Service Agreements:

The ISO shall offer a standard form Non-Firm Point-To-Point Transmission Service Agreement (Attachment B) to an Eligible Customer when it first submits a Completed Application pursuant to this Tariff. Executed Service Agreements that contain the information required under this Tariff shall be filed with the Commission in compliance with applicable Commission regulations.

3.2.5 Classifications of Non-Firm Point-To-Point Transmission Service:

Non-Firm Point-To-Point Transmission Service shall be offered under terms and conditions contained in Part 3 of this Tariff. The ISO undertakes no obligation under this Tariff to plan its Transmission System in order to have sufficient capacity for Non-Firm Point-To-Point Transmission Service. Parties requesting Non-Firm Point-To-Point Transmission Service for the transmission of firm power do so with the full realization that such service is subject to availability and to Curtailment or Interruption under the terms of this Tariff. Non-Firm Point-To-Point Transmission Service shall include transmission of Energy on an hourly and daily basis under Schedule 8.

3.2.6 Scheduling of Non-Firm Point-To-Point Transmission Service:

3.2.6.1 In the Day-Ahead Market: Schedules for the Transmission Customer's Non-Firm Point-to-Point Transmission Service in the Day-Ahead must be submitted to the ISO no later than 5:00 a.m. of the day prior to commencement of service or 4:50 a.m. for Transmission Service over the Cross-Sound Scheduled Line, the Neptune Scheduled Line, the Linden VFT Scheduled Line, or the HTP

Scheduled Line. Schedules involving the use of LIPA's facilities shall be treated in accordance with Section 2.5.7. Schedules submitted after 5:00 a.m., or 4:50 a.m. as appropriate, will not be accepted in the Day-Ahead Schedule. Schedules of any Capacity and Energy that is to be delivered must be stated in increments of 1,000 kWh per hour between each Point of Receipt and corresponding Point of Delivery. Non-firm Transmission Service is not available between a Point of Receipt and Point of Delivery internal to the NYCA. For non-firm Transmission Service requests between a Point of Receipt at the Proxy Generator Bus designated for Imports and a Point of Delivery that is a Load Bus internal to the NYCA, the ISO will furnish to the Transmission Customer hour-to-hour advisory schedules equal to those requested by the Transmission Customer provided that there is no congestion between the Point of Receipt and the Point of Delivery. Should the Transmission Customer revise or terminate any schedule, such party shall notify the ISO prior to the close of the Real-Time Scheduling Window, and the ISO shall have the right to adjust accordingly the schedule for Energy to be received and to be delivered.

3.2.6.2 In the Real-Time Market: Schedules for the Transmission Customer's Non-Firm Point-to-Point Transmission Service in real-time must be submitted to the ISO before the close of the Real-Time Scheduling Window. Schedules involving the use of LIPA's facilities shall be treated in accordance with Section 2.5.7. Schedules submitted later than the close of the Real-Time Scheduling Window shall not be accepted in the real-time schedule. Schedules of any Energy that is to be delivered must be stated in increments of 1,000 kWh per hour

between each Point of Receipt and corresponding Point of Delivery. Non-firm Transmission Service is not available between a Point of Receipt and Point of Delivery internal to the NYCA. For non-firm Transmission Service requests between a Point of Receipt at the Proxy Generator Bus designated for Imports and a Point of Delivery that is a Load Bus internal to the NYCA, the ISO will furnish to the Transmission Customer advisory hour-to-hour schedules equal to those requested by the Transmission Customer and shall deliver the Energy provided by such schedules provided that there is no congestion between the Point of Receipt and Point of Delivery. Should the Transmission Customer revise or terminate any schedule, the Transmission Customer shall notify the ISO prior to the close of the Real-Time Scheduling Window.

3.2.7 Curtailment or Interruption of Service:

The ISO reserves the right to Curtail, in whole or in part, Non-Firm Point-To-Point Transmission Service provided under the Tariff for reliability reasons when, an Emergency or other unforeseen condition threatens to impair or degrade the reliability of the NYS Transmission System. The ISO reserves the right to Interrupt, in whole or in part, Non-Firm Point-To-Point Transmission Service provided under this Tariff for economic reasons if the NYS Transmission System experiences Congestion. Where required, Curtailments or Interruptions will be made on a non-discriminatory basis to the transaction(s) that effectively relieve the Constraint, however, Non-Firm Point-To-Point Transmission Service shall be subordinate to Firm Point-to-Point Transmission Service and Network Integration Transmission Service. The ISO will provide advance notice of Curtailment or Interruption where such notice can be provided consistent with Good Utility Practice. The process of Curtailment of Non-Firm Point-

To-Point Transmission Service for Imports, Exports, and Wheels Through may cause these non-firm transactions to incur incidental real-time Congestion Rents due to inter-Control Area Curtailment procedures.

16.3 Transmission Service, Schedules and Curtailment

16.3.1 Requests for Bilateral Transaction Schedules

Only Firm Point-to-Point Transmission Service shall be available for internal Bilateral Transactions and for CTS Interface Bids for Bilateral Transactions.. Firm and Non-Firm Point-to-Point Transmission Service shall be available for Import and Export Bilateral Transactions and Wheel-Through Transactions. External Transaction Bids may not vary over the course of an hour. Each such Bid must offer to import, export or wheel the same amount of Energy at the same price at each point in time within that hour. However, the ISO may vary External Transaction Schedules at Proxy Generator Buses that are authorized to schedule transactions on an intra-hour basis if the party submitting the Bid for such a Transaction indicates that the ISO may vary schedules associated with those Bids within the hour; *provided however*, the ISO will subject all CTS Interface Bids to variable scheduling. Transmission Customers may modify Bilateral Transactions that were scheduled Day-Ahead or propose new Bilateral Transactions, including External Bilateral Transactions, for economic evaluation within the Real-Time Market, provided however, that Bilateral Transactions with Trading Hubs as their POWs that were previously scheduled Day-Ahead may not be modified.

Transmission Customers scheduling Transmission Service to support a Bilateral Transaction with Energy supplied by an External Generator or Internal Generator shall submit the following information to the ISO:

(1) Point of Injection location. For Transactions with Internal sources, the Point of Injection is the Generator's bus; for Transactions with Trading Hubs as their sources, the Point of Injection is the Trading Hub Generator bus; for Transactions

with External sources, the Point of Injection is the Proxy Generator Bus designated for Imports.

(2) Point of Withdrawal location. For Transactions to serve Internal Load, the Point of Withdrawal is the Load bus; for Transactions to serve External load, the Point of Withdrawal is the Proxy Generator Bus designated for Exports; for Transactions with Trading Hubs as their sinks, the Point of Withdrawal is the Trading Hub Load bus;

(3) Desired hourly MW schedules;

(4) Whether Firm or Non-Firm Transmission Service is requested,

(5) NERC Tag data;

(6) A Sink Price Cap Bid for Export Transactions up to the MW level of the desired schedule, a Decremental Bid for Import and Wheel Through Transactions up to the MW level of the desired schedule; or a CTS Interface Bid for Transactions other than Wheels Through at CTS Enabled Proxy Generator Buses;

(7) A direction for the desired flow for CTS Interface Bids submitted at the CTS Enabled Proxy Generator Buses; and

(8) Other data required by the ISO.

16.3.2 ISO's General Responsibilities

The ISO shall evaluate requests for Bilateral Transactions, and associated Transmission Service, submitted in the Day-Ahead scheduling process using Security Constrained Unit Commitment ("SCUC"), and will subsequently establish a Day-Ahead schedule. During the Dispatch Day, the ISO shall use the Real-Time Market to establish schedules for each hour of dispatch in that day.

The ISO shall use the information provided by Real-Time Market when making Curtailment decisions pursuant to the Curtailment rules described in Section 16.3.4 of this Attachment J.

16.3.3 Scheduling of Bilateral Transactions in the Day-Ahead Market and Real-Time Market

16.3.3.1 ISO Responsibilities

The ISO shall model Bids for Import Bilateral Transactions and Bids for Export Bilateral Transactions as Bids to buy or sell a block of MW at a single price at their respective buses.

The ISO shall compute all NYCA Interface Transfer Capabilities and interface Ramp and NYCA Ramp capabilities prior to scheduling Transmission Service Day-Ahead and in real-time. The ISO shall evaluate (i) Decremental Bids from entities engaged in Bilateral Import Transactions and Wheels Through, (ii) Bids from entities engaged in Imports to the LBMP Market,; (iii) CTS Interface Bids from entities engaged in Imports and Exports at CTS Enabled Proxy Generator Buses; (iv) Energy Bids from internal Generators; (v) Sink Price Cap Bids from entities engaged in Bilateral Export Transactions; and (vi) Bids from entities engaged in Exports from the LBMP Market simultaneously when committing internal Generators and scheduling Import, Export and Wheel Through Transactions and Imports and Exports to and from the LBMP Market in the Day Ahead and Real-Time Markets, provided however, the ISO shall also evaluate Price Capped Load Bids simultaneously with (i) through (vi) in the Day Ahead Market.

The ISO shall not use Decremental Bids submitted by Transmission Customers for Generators associated with Non-Firm Point-to-Point Transmission Service in the determination of the Day-Ahead schedule.

16.3.3.2 Scheduling Internal Bilateral Transactions

The ISO shall schedule Firm Transmission Service between the Point of Injection at the Generator bus to the Point of Withdrawal at the Load bus equal to the request for Transmission Service in both the Day-Ahead and Real-Time Markets. The ISO shall use Energy Bids to determine commitment and dispatch schedules for internal Generators including those providing Energy for an Internal Bilateral Transaction.

16.3.3.3 Scheduling Export Bilateral Transactions and Firm Point-to-Point Transmission Service to Support Them

The ISO shall use Bids supplied by Transmission Customers proposing Export Bilateral Transactions in the Day Ahead and Real-Time Markets to determine the amount of Energy scheduled to be exported under those Transactions in the Day-Ahead and Real-Time Markets respectively. The ISO shall not schedule Energy to be exported in amounts that exceed the Transfer Capability of the Interface.

The ISO shall schedule in the Day-Ahead and Real-Time Markets Firm Transmission Service for Export Bilateral Transactions between the Point of Receipt at the internal Generator bus and the Point of Delivery at the Proxy Generator Bus in an amount equal to the amount of Energy scheduled to be exported under those Transactions Day-Ahead and in real-time respectively.

The ISO shall use Energy Bids supplied by internal Generators designated as supporting Export Bilateral Transactions scheduled with Firm Transmission Service in the Day Ahead and Real-Time Markets to determine the Generator’s commitment and dispatch schedule.

16.3.3.4 Scheduling Import Bilateral Transactions and Firm Point-to-Point Transmission Service to Support Them

The ISO shall use Bids from Transmission Customers proposing Import Bilateral Transactions in the Day Ahead and Real-Time Markets to determine the amount of Energy scheduled to be imported under those Transactions in the Day-Ahead and Real-Time Markets respectively. The ISO shall not schedule Energy to be imported in amounts that exceed the Transfer Capability of the Interface. The ISO shall schedule Firm Transmission Service in the Day-Ahead and Real-Time Markets for Import Bilateral Transactions between the Point of Receipt at the Proxy Generator Bus and the Point of Delivery at the Load bus equal to the amount of Transmission Service requested to support those Transactions Day-Ahead and in real-time respectively.

16.3.3.5 Scheduling Wheel Through Bilateral Transactions and Firm Point-to-Point Transmission Service to Support Them

The ISO shall use Decremental Bids supplied by Transmission Customers proposing Wheel-Through Transactions in the Day Ahead and Real-Time Markets to determine the amount of Energy scheduled to be wheeled under those Transactions Day-Ahead and in real-time respectively. The ISO shall schedule Firm Transmission Service in the Day-Ahead and Real-Time Markets between the Point of Receipt at the Proxy Generator Bus and the Point of Delivery at the Proxy Generator bus designated for Exports equal to the amount of Energy scheduled to be imported and Wheeled Through under those Transactions Day-Ahead and in real-time respectively.

16.3.3.6 Scheduling Non Firm Transmission Service

The ISO shall not use Decremental Bids submitted by Transmission Customers associated with Non-Firm Point-to-Point Transmission Service in the determination of the Day-

Ahead or real-time schedules. The ISO shall not schedule Non-Firm Transmission Service Day-Ahead for a Transaction if Congestion Rents associated with that Transaction are positive, nor will the ISO schedule Non-Firm Transmission Service in the RTC for any Transaction at a CTS Enabled Proxy Generator Bus or, at any other Proxy Generator Bus, if Congestion Rents associated with that Transaction are expected to be positive. All schedules for Non-Firm Point-to-Point Transmission Service are advisory only and are subject to Reduction if real-time Congestion Rents associated with those Transactions become positive.

Transmission Customers receiving Non-Firm Transmission Service will be required to pay Real-Time Congestion Rents during any delay in the implementation of Reduction (*e.g.*, during the nominal five-minute RTD intervals that elapse before the implementation of Reduction) calculated pursuant to Section 17, Attachment B of the Services Tariff.

16.3.3.7. Scheduling External Transactions at the Proxy Generator Buses Associated with Scheduled Lines

Scheduling External Transactions at the Proxy Generator Buses that are associated with the Cross-Sound Scheduled Line, the Neptune Scheduled Line, the Linden VFT Scheduled Line, and the HTP Scheduled Line shall also be governed by Section 29, Attachment N to the ISO Services Tariff.

16.3.3.8 Prohibited Transmission Paths

The ISO shall not permit Market Participants to schedule External Transactions over the following eight scheduling paths:

1. External Transactions that are scheduled to exit the NYCA at the Proxy Generator Bus that represents its Interface with the Control Area operated by the

Independent Electricity System Operator of Ontario ("IESO"), and to sink in the Control Area operated by PJM Interconnection, LLC ("PJM");

2. External Transactions that are scheduled to exit the NYCA at the Proxy Generator Buses that represent the NYCA's common border with the Control Area operated by PJM, and to sink in the Control Area operated by IESO;

3. External Transactions that are scheduled to enter the NYCA at the Proxy Generator Buses that represent the NYCA's common border with the Control Area operated by PJM, and to source from the Control Area operated by IESO;

4. External Transactions that are scheduled to enter the NYCA at the Proxy Generator Bus that represents the NYCA's Interface with the Control Area operated by IESO, and to source from the Control Area operated by PJM;

5. Wheels Through the NYCA that are scheduled to enter the NYCA at the Proxy Generator Buses that represent the NYCA's common border with the Control Area operated by PJM, and to sink in the Control Area operated by the Midwest Independent Transmission System Operator, Inc. ("MISO");

6. Wheels Through the NYCA that are scheduled to exit the NYCA at the Proxy Generator Buses that represent the NYCA's common border with the Control Area operated by PJM, and to source from the Control Area operated by the MISO;

7. Wheels Through the NYCA that are scheduled to enter the NYCA at the Proxy Generator Bus that represents the NYCA's Interface with the Control Area operated by IESO, and to sink in the Control Area operated by the MISO; and

8. Wheels Through the NYCA that are scheduled to exit the NYCA at the Proxy Generator Bus that represents the NYCA's Interface with the Control Area operated by IESO, and to source from the Control Area operated by the MISO.

16.3.4 Bilateral Transaction Adjustments, Curtailments and Settlements

The DNI between the NYCA and adjoining Control Areas will be adjusted as necessary to reflect the effects of any Curtailments of Import or Export Transactions.

To the extent possible, Curtailments of External Transactions at the Proxy Generator Bus associated with the Cross-Sound Scheduled Line, the Neptune Scheduled Line, the Linden VFT Scheduled Line, and the HTP Scheduled Line shall be based on the transmission priority of the associated Advance Reservation for use of the Cross-Sound Scheduled Line, the Neptune Scheduled Line, the Linden VFT Scheduled Line, and the HTP Scheduled Line (as appropriate).

If a Transmission Customer's Firm Point-to-Point Transmission Service or Network Integration Transmission Service is supporting an Internal Bilateral Transaction, or an Import Bilateral Transaction, the ISO shall not reduce the Transmission Service. If a Transmission Customer's Firm Point-to-Point Transmission Service or Network Integration Transmission Service is supporting an Export Bilateral Transaction or a Wheel Through, the ISO shall reduce Transmission Service to the extent the amount of Energy scheduled to be exported or wheeled is reduced.

16.3.4.1 Import Bilateral Transactions

If the amount of Energy scheduled to be imported in an Import Bilateral Transaction in the Day-Ahead Market is less than the amount of Transmission Service requested and scheduled Day-Ahead in association with that Import Bilateral Transaction, the Transmission Customer shall pay the Energy Imbalance Service Charge pursuant to Rate Schedule 4 of this OATT. The

Transmission Customer shall continue to pay the Day-Ahead TUC for the amount of Transmission Service scheduled.

If the Import Bilateral Transaction was scheduled following the Day-Ahead Market, or the schedule for the Import Bilateral Transaction was revised following the Day-Ahead Market, and the amount of Energy scheduled to be imported in real-time (modified for within-hour changes in DNI, if any) is less than the amount of Transmission Service requested in real-time in association with that Transaction, then the Transmission Customer shall pay an Energy Imbalance Service Charge pursuant to Rate Schedule 4 of this OATT. If the Import Bilateral Transaction was scheduled following the Day-Ahead Market, or the schedule for the Import Bilateral Transaction was revised following the Day-Ahead Market, the Transmission Customer shall pay or be paid the Real-Time TUC for the amount of Transmission Service requested in real-time in association with that Transaction minus the amount of Transmission Service requested Day-Ahead in association with that Transaction.

16.3.4.2 Export Bilateral Transactions, Internal Bilateral Transactions and Wheel Through Transactions

If the internal Generator designated to supply the Export Bilateral Transaction or internal Bilateral Transaction has been scheduled Day-Ahead to produce Energy in an amount that is less than the amount of Transmission Service scheduled Day-Ahead in association with that internal or Export Bilateral Transaction, the internal Generator shall pay an Energy Imbalance Service Charge pursuant to Rate Schedule 4 of this OATT.

If the internal Generator designated to supply the Export Bilateral Transaction or internal Bilateral Transaction has been dispatched in real-time to produce Energy in an amount that is less than the amount of Transmission Service scheduled in real-time in association with that

internal or Export Bilateral Transaction, the internal Generator shall pay an Energy Imbalance Service Charge pursuant to Rate Schedule 4 of this OATT.

If the Export Bilateral Transaction or internal Bilateral Transaction was scheduled following the Day-Ahead Market, or the schedule for the Export Bilateral Transaction or internal Transaction was revised following the Day-Ahead Market, the Transmission Customer shall pay or be paid the Real-Time TUC for the amount of Transmission Service scheduled in real time in association with that Transaction minus the amount of Transmission Service scheduled Day-Ahead in association with that Transaction.

If a Wheel-Through Transaction was scheduled following the Day-Ahead Market, or the schedule for the Wheel-Through transaction was revised following the Day-Ahead Market, the Transmission Customer shall pay or be paid the Real-Time TUC for the amount of Transmission Service scheduled in real time in association with that Transaction minus the amount of Transmission Service scheduled Day-Ahead in association with that Transaction.

Notwithstanding the foregoing, the amount of Transmission Service scheduled in real-time for internal Bilateral Transactions supplied by one of the following Generators shall retroactively be set equal to that Generator's actual output in each RTD interval:

16.3.4.2.1 Generators

16.3.4.2.1.1 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;

16.3.4.2.1.2 Existing topping turbine Generators and extraction turbine Generators producing electric Energy resulting from the supply of steam to the district 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; and

16.3.4.2.3 Intermittent Power Resources that depend on landfill gas or solar for their fuel, existing Intermittent Power Resources that depend on wind as their fuel, other than those for which the NYISO has imposed a Wind Output Limit, and Limited Control Run of River Hydro Resources in operation on or before November 18, 1999 within the NYCA, plus up to an additional 3300 MW of such Generators.

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

16.3.4.3 Non-Firm Transmission

If the Transmission Customer was receiving Non-Firm Point-to-Point Transmission Service for an Import, and its Transmission Service was Reduced or Curtailed, the Load will purchase Energy in the Real-Time LBMP Market, at the Real-Time LBMP, for the amount of Energy Reduced or Curtailed. An Internal Generator supplying Energy for non-Firm Point-to-Point Transmission Service for an Export that is Reduced or Curtailed may sell the Energy no longer serving the Export in the Real-Time LBMP Market.

The ISO shall not automatically reinstate Non-Firm Point-to-Point Transmission Service that was Reduced or Curtailed. Transmission Customers may submit new schedules to restore the Non-Firm Point-to-Point Transmission Service in the next hour of the Real-Time Market.

16.3.4.4 Procedure for Relieving Security Violations

If a security violation occurs or is anticipated to occur, the ISO shall attempt to relieve the violation using the following procedures:

16.3.4.4.1 Reduce Non-Firm Point-to-Point Transmission Service: Partially or fully physically Curtail External Non-Firm Transmission Service (Imports, Exports and Wheels Through) by changing DNI schedules to (1) Curtail those in the lowest NERC priority categories first; (2) Curtail within each NERC priority category, based on Decremental Bids; and Incremental Energy Bids for Imports and Wheel Throughs; and based on Sink Price Cap Bids for Exports and (3) prorate Curtailment of equal cost transactions within a priority category ;

16.3.4.4.2 Curtail Non-Firm Point-to-Point Transmission Service: Curtail (through changing DNI) unscheduled non-Firm Transactions which contribute to the violation, starting with the lowest NERC priority category;

16.3.4.4.3 Dispatch Internal Generators, based on Incremental Energy Bids , including committing additional resources, if necessary;

16.3.4.4.4 Adjust the DNI associated with External Transactions: Curtail External Firm Transactions until the Constraint is relieved by (1) Curtailing based on , CTS Interface Bids, Decremental Bids and Sink Price Cap Bids; and (2) except for External Transactions with minimum run times, prorating Curtailment of equal cost transactions;

16.3.4.4.5 Request Internal Generators to voluntarily operate in manual mode below minimum or above maximum dispatchable levels. When operating in manual mode, Generators will not be required to adhere to minimum ramp rates, nor will they be required to be respond to RTD Base Point Signals;

16.3.4.4.6 In over generation conditions, decommit Internal Generators based on Minimum Generation Bid rate in descending order; and

16.3.4.4.7 Invoke other emergency procedures including involuntary load Curtailment, if necessary.

35.23 Schedule D – Market-to-Market Coordination Process – Version 1.0

NYISO & PJM
Market-to-Market Coordination Schedule
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1 Overview of the Market-to-Market Coordination Process

The purpose of the M2M coordination process is to set forth the rules that apply to M2M coordination between PJM and NYISO and the associated settlements processes.

The fundamental philosophy of the PJM/NYISO M2M coordination process is to set up procedures to allow any transmission constraints that are significantly impacted by generation dispatch changes and/or Phase Angle Regulator ("PAR") control actions in both markets to be jointly managed in the security-constrained economic dispatch models of both RTOs. This joint management of transmission constraints near the market borders will provide the more efficient and lower cost transmission congestion management solution, while providing coordinated pricing at the market boundaries.

The M2M coordination process focuses on real-time market coordination to manage transmission limitations that occur on the M2M Flowgates in a more cost effective manner. Coordination between NYISO and PJM will include not only joint redispatch, but will also incorporate coordinated operation of the Ramapo PARs that are located at the NYISO – PJM interface. This real-time coordination will result in a more efficient economic dispatch solution across both markets to manage the real-time transmission constraints that impact both markets, focusing on the actual flows in real-time to manage constraints. Under this approach, the flow entitlements on the M2M Flowgates do not impact the physical dispatch; the flow entitlements are used in market settlements to ensure appropriate compensation based on comparison of the actual Market Flows to the flow entitlements.

2 M2M Flowgates

Only a subset of all transmission constraints that exist in either market will require coordinated congestion management. This subset of transmission constraints will be identified as M2M Flowgates. Flowgates eligible for the M2M coordination process are called M2M Flowgates. For the purposes of the M2M coordination process (in addition to the studies described in section 3 below) the following will be used in determining M2M Flowgates.

2.1 NYISO and PJM will only be performing the M2M coordination process on M2M Flowgates that are under the operational control of NYISO or PJM. NYISO and PJM will not be performing the M2M coordination process on Flowgates that are owned and controlled by third party entities.

2.2 The Parties will make reasonable efforts to lower their generator binding threshold to match the lower generator binding threshold utilized by the other Party. The generator and Ramapo PAR binding thresholds (the shift factor thresholds used to identify the resource(s) available to relieve a transmission constraint), will not be set below 3%, except by mutual consent. This requirement applies to M2M Flowgates. It is not an additional criterion for determination of M2M Flowgates.

2.3 For the purpose of determining whether a monitored element Flowgate is eligible for the M2M coordination process, a threshold for determining a significant GLDF or Ramapo PSF will take into account the number of monitored elements. Implementation of M2M Flowgates will ordinarily occur through mutual agreement.

2.4 All Flowgates eligible for M2M coordination will be included in the coordinated operations of the Ramapo PARs. Flowgates with significant GLDF will also be included in joint redispatch.

2.5 M2M Flowgates that are eligible for redispatch coordination are also eligible for coordinated operation of the Ramapo PARs. M2M Flowgates that are eligible for coordinated operation of the Ramapo PARs are not necessarily also eligible for redispatch coordination.

2.6 The NYISO shall post a list of all of the M2M Flowgates located in the NYCA on its web site. PJM shall post a list of all of the M2M Flowgates located in its Control Area on its web site.

3 M2M Flowgate Studies

To identify M2M Flowgates the Parties will perform an off-line study to determine if the significant GLDF for at least one generator within the Non-Monitoring RTO, or significant PSF for at least one Ramapo PAR, on a potential M2M Flowgate within the Monitoring RTO is greater than or equal to the thresholds as described below. The study shall be based on an up-to-date power flow model representation of the Eastern Interconnection, with all normally closed Transmission Facilities in-service. The transmission modeling assumptions used in the M2M Flowgate studies will be based on the same assumptions used for determining M2M Entitlements in Section 6 below.

3.1 Either Party may propose that a new M2M Flowgate be added at any time. The Parties will work together to perform the necessary studies within a reasonable timeframe.

3.2 The GLDF or Ramapo PSF thresholds for M2M Flowgates with one or more monitored elements are defined as:

i. Single monitored element, 5% GLDF/Ramapo PSF;

ii. Two monitored elements, 7.5% GLDF/Ramapo PSF; and

iii. Three or more monitored elements, 10% GLDF/Ramapo PSF.

3.3 For potential M2M Flowgates that pass the above Ramapo PSF criteria, the Parties must still mutually agree to add each Flowgate as an M2M Flowgate for coordinated operation of the Ramapo PARs.

3.4 For potential M2M Flowgates that pass the above GLDF criteria, the Parties must still mutually agree to add each Flowgate as an M2M Flowgate for redispatch coordination.

3.5 The Parties can also mutually agree to add a M2M Flowgate that does not satisfy the above criteria.

4 Removal of M2M Flowgates

Removal of M2M Flowgates from the systems may be necessary under certain conditions including the following:

4.1 A M2M Flowgate is no longer valid when (a) a change is implemented that effects either Party's generation impacts causing the Flowgate to no longer pass the M2M Flowgate Studies, or (b) a change is implemented that affects the impacts from coordinated operation of the Ramapo PARs causing the Flowgate to no longer pass the M2M Flowgate Studies. The Parties must still mutually agree to remove a M2M Flowgate, such agreement not to be unreasonably withheld. Once a M2M Flowgate has been removed, it will no longer be eligible for M2M settlement.

4.2 A M2M Flowgate that does not satisfy the criteria set forth in Section 3.2 above, but that is created based on the mutual agreement of the Parties pursuant to Section 3.5 above, shall be removed two weeks after either Party provides a formal notice to the other Party that it withdraws its agreement to the M2M Flowgate, or at a later or earlier date that the Parties mutually agree upon. The formal notice must include an explanation of the reason(s) why the agreement to the M2M Flowgate was withdrawn.

4.3 The Parties can mutually agree to remove a M2M Flowgate from the M2M coordination process whether or not it passes the coordination tests. A M2M Flowgate should be removed when the Parties agree that the M2M coordination process is not, or will not be, an effective mechanism to manage congestion on that Flowgate.

5 Market Flow Determination

Each RTO will independently calculate its Market Flow for all M2M Flowgates using the equations set forth in this section. The Market Flow calculation is broken down into the following steps:

- Determine Shift Factors for M2M Flowgates

- Compute RTO Load and Losses (less imports)
- Compute RTO Generation (less exports)
- Compute RTO Generation to Load impacts on the Market Flow
- Compute RTO interchange scheduling impacts on the Market Flow
- Compute PAR impacts on the Market Flow
- Compute Market Flow

5.1 Determine Shift Factors for M2M Flowgates

The first step to determining the Market Flow on a M2M Flowgate is to calculate generator, load and PAR shift factors for the each of the M2M Flowgates. For real-time M2M coordination, the shift factors will be based on the real-time transmission system topology.

5.2 Compute RTO Load Served by RTO Generation

Using area load and losses for each load zone, compute the RTO Load, in MWs, by summing the load and losses for each load zone to determine the total zonal load for each RTO load zone. Twenty percent of RECo load shall be included in the Market Flow calculation as PJM load. *See* Section 6.2, below.

$Zonal\_Total\_Load_{zone} = Load_{zone} + Losses_{zone}$, for each RTO load zone

Where:

zone =	the relevant RTO load zone;
$Zonal\_Total\_Load_{zone}$ =	the sum of the RTO's load and transmission losses for the zone;
$Load_{zone}$ =	the load within the zone; and
$Losses_{zone}$ =	the transmission losses for transfers through the zone.

Next, reduce the Zonal Loads by the scheduled line real-time import transaction schedules that sink in that particular load zone:

$$Zonal\_Reduced\_Load_{zone} = Zonal\_Total\_Load_{zone} - \sum_{scheduled\_lines=1}^{all} Import\_Schedules_{scheduled\_line,zone}$$

Where:

zone = the relevant RTO load zone;

scheduled_line = each of the Transmission Facilities identified in Table 1 below;

$Zonal\_Reduced\_Load_{zone}$ = the sum of the RTO's load and transmission losses in a zone reduced by the sum of import schedules over scheduled lines to the zone;

$Zonal\_Total\_Load_{zone}$ = the sum of the RTO's load and transmission losses for the zone; and

$Import\_Schedules_{scheduled\_line,zone}$ = import schedules over a scheduled line to a zone.

The real-time import schedules over scheduled lines will only reduce the load in the sink load zones identified in Table 1 below:

Table 1. List of Scheduled Lines

Scheduled Line	NYISO Load Zone	PJM Load Zone
Dennison Scheduled Line	North	Not Applicable
Cross-Sound Scheduled Line	Long Island	Not Applicable
HTP Scheduled Line	New York City	Mid-Atlantic Control Zone
Linden VFT Scheduled Line	New York City	Mid-Atlantic Control Zone
Neptune Scheduled Line	Long Island	Mid-Atlantic Control Zone
Northport – Norwalk Scheduled Line	Long Island	Not Applicable

Once import schedules over scheduled lines have been accounted for, it is then appropriate to reduce the net RTO Load by the remaining real-time import schedules at the proxies identified in Table 2 below:

Table 2. List of Proxies*

Proxy	Balancing Authorities Responsible
PJM shall post and maintain a list of its proxies on its OASIS website. PJM shall provide to NYISO notice of any new or deleted proxies prior to implementing such changes in its M2M software.	PJM
NYISO proxies are the Proxy Generator Buses that are not identified as Scheduled Lines in the table that is set forth in Section 4.4.4 of the NYISO's Market Services Tariff. The NYISO shall provide to PJM notice of any new of deleted proxies prior to implementing such changes in its M2M software.	NYISO

*Scheduled lines and proxies are mutually exclusive. Transmission Facilities that are components of a scheduled line are not also components of a proxy (and vice-versa).

$$RTO\_Net\_Load = \sum_{zone=1}^{all} Zonal\_Reduced\_Load_{zone}$$

Where:

zone = the relevant RTO load zone;

RTO_Net_Load = the sum of load and transmission losses for the entire RTO footprint reduced by the sum of import schedules over all scheduled lines; and

$Zonal\_Reduced\_Load_{zone}$ = the sum of the RTO's load and transmission losses in a zone reduced by the sum of import schedules over scheduled lines to the zone.

$$RTO\_Final\_Load = RTO\_Net\_Load - \sum_{proxy=1}^{all} Import\_Schedules_{proxy}$$

Where:

proxy = representations of defined sets of Transmission Facilities that (i) interconnect neighboring Balancing Authorities, (ii) are collectively scheduled, and (iii) are identified in Table 2 above;

RTO_Final_Load = the sum of the RTO's load and transmission losses for the entire RTO footprint, sequentially reduced by (i) the sum of import schedules over all scheduled lines, and (ii) the sum of all proxy import schedules;

RTO_Net_Load = the sum of load and transmission losses for the entire RTO footprint reduced by the sum of import schedules over all scheduled lines; and

$Import\_Schedules_{proxy}$ = the sum of import schedules at a given proxy.

Next, calculate the Zonal Load weighting factor for each RTO load zone:

$$Zonal\_Weighting_{zone} = \left(\frac{Zonal\_Reduced\_Load_{zone}}{RTO\_Net\_Load}\right)$$

Where:

zone = the relevant RTO load zone;

$Zonal\_Weighting_{zone}$ = the percentage of the RTO's load contained within the zone;

RTO_Net_Load = the sum of load and transmission losses for the entire RTO footprint reduced by the sum of import schedules over all scheduled lines; and

$Zonal\_Reduced\_Load_{zone}$ = the sum of the RTO's load and transmission losses in a zone reduced by the sum of import schedules over scheduled lines to the zone.

Using the Zonal Weighting Factor compute the zonal load reduced by RTO imports for each load zone:

$$Zonal\_Final\_Load_{zone} = Zonal\_Weighting_{zone} \times RTO\_Final\_Load$$

Where:

zone = the relevant RTO load zone;

$Zonal\_Final\_Load_{zone}$ = the final RTO load served by internal RTO generation in the zone;

$Zonal\_Weighting_{zone}$ = the percentage of the RTO's load contained within the zone; and

RTO_Final_Load = the sum of the RTO's load and transmission losses for the entire RTO footprint, sequentially reduced by (i) the sum of import schedules over all scheduled lines, and (ii) the sum of all proxy import schedules.

Using the Load Shift Factors ("LSFs") calculated above, compute the weighted RTOLSF for each M2M Flowgate as:

$$RTO\_LSF_{M2M\_Flowgate-m} = \sum_{zone=1}^{all} \left(LSF_{(zone,M2M\_Flowgate-m)} \times \left(\frac{Zonal\_Final\_Load_{zone}}{RTO\_Final\_Load} \right) \right)$$

Where:

M2M_Flowgate-m = the relevant flowgate;

zone = the relevant RTO load zone;

$RTO\_LSF_{M2M\_Flowgate-m}$ = the load shift factor for the entire RTO footprint on M2M Flowgate m;

$LSF_{(zone,M2M\_Flowgate-m)}$ = the load shift factor for the RTO zone on M2M Flowgate m;

$Zonal\_Final\_Load_{zone}$ = the final RTO load served by internal RTO generation in the zone; and

RTO_Final_Load = the sum of the RTO's load and transmission losses for the entire RTO footprint, sequentially reduced by (i) the sum of import schedules over all scheduled lines, and (ii) the sum of all proxy import schedules.

5.3 Compute RTO Generation Serving RTO Load

Using the real-time generation output in MWs, compute the Generation serving RTO Load. Sum the output of RTO generation within each load zone:

$RTO\_Gen_{zone} = \sum_{unit=1}^{all} Gen_{unit,zone}$, for each RTO load zone

Where:

zone = the relevant RTO load zone;

unit = the relevant generator;

RTO_Gen_{zone} = the sum of the RTO's generation in a zone; and

$Gen_{unit,zone}$ = the real-time output of the unit in a given zone.

Next, reduce the RTO generation located within a load zone by the scheduled line real-time export transaction schedules that source from that particular load zone:

$$RTO\_Reduced\_Gen_{zone} = RTO\_Gen_{zone} - \sum_{scheduled\_line=1}^{all} Export\_Schedules_{scheduled\_line,zone}$$

Where:

zone = the relevant RTO load zone;

scheduled_line = each of the Transmission Facilities identified in Table 1 above;

$RTO\_Reduced\_Gen_{zone}$ = the sum of the RTO's generation in a zone reduced by the sum of export schedules over scheduled lines from the zone;

RTO_Gen_{zone} = the sum of the RTO's generation in a zone; and

$Export\_Schedules_{scheduled\_line,zone}$ = export schedules from a zone over a scheduled line.

The real-time export schedules over scheduled lines will only reduce the generation in the source zones identified in Table 1 above. The resulting generator output based on this reduction is defined below.

$$Reduced\ Gen_{unit} = Gen_{unit,zone}\left(\frac{RTO\_Reduced\_Gen_{zone}}{RTO\_Gen_{zone}}\right)$$

Where:

unit = the relevant generator;

zone = the relevant RTO load zone;

$Gen_{unit,zone}$ = the real-time output of the unit in a given zone;

Reduced Gen_{unit} = each unit's real-time output after reducing the RTO_Net_Gen by the real-time export schedules over scheduled lines;

RTO_Reduced_Gen$_{zone}$ = the sum of the RTO's generation in a zone reduced by the sum of export schedules over scheduled lines from the zone; and

RTO_Gen$_{zone}$ = the sum of the RTO's generation in a zone.

Once export schedules over scheduled lines are accounted for, it is then appropriate to reduce the net RTO generation by the remaining real-time export schedules at the proxies identified in Table 2 above.

$$RTO\_Net\_Gen = \sum_{zone=1}^{all} RTO\_Reduced\_Gen_{zone}$$

Where:

zone = the relevant RTO load zone;

RTO_Net_Gen = the sum of the RTO's generation reduced by the sum of export schedules over all scheduled lines; and

RTO_Reduced_Gen$_{zone}$ = the sum of the RTO's generation in a zone reduced by the sum of export schedules over scheduled lines from the zone.

$$RTO\_Final\_Gen = RTO\_Net\_Gen - \sum_{proxy=1}^{all} Export\_Schedules_{proxy}$$

Where:

proxy = representation of defined sets of Transmission Facilities that (i) interconnect neighboring Balancing Authorities, (ii) are collectively scheduled, and (iii) are identified in Table 2 above;

RTO_Final_Gen = the sum of the RTO's generation output for the entire RTO footprint, sequentially reduced by (i) the sum of export schedules over all scheduled lines, and (ii) the sum of all proxy export schedules;

RTO_Net_Gen = the sum of the RTO's generation reduced by the sum of export schedules over all scheduled lines; and

$Export\_Schedules_{proxy}$ = the sum of export schedules at a given proxy.

Finally, weight each generator's output by the reduced RTO generation:

$$Gen\_Final_{unit} = Reduced\ Gen_{unit} \times \frac{RTO\_Final\_Gen}{RTO\_Net\_Gen}$$

Where:

unit = the relevant generator;

Gen_Final_{unit} = the portion of each unit's output that is serving the RTO Net Load;

Reduced Gen_{unit} = each unit's real-time output after reducing the RTO_Net_Gen by the real-time export schedules over scheduled lines;

RTO_Final_Gen = the sum of the RTO's generation output for the entire RTO footprint, sequentially reduced by (i) the sum of export schedules over all scheduled lines, and (ii) the sum of all proxy export schedules; and

RTO_Net_Gen = the sum of the RTO's generation reduced by the sum of export schedules over all scheduled lines.

5.4 Compute the RTO GTL for all M2M Flowgates

The generation-to-load flow for a particular M2M Flowgate, in MWs, will be determined as:

$$RTO\_GTL_{M2M\_Flowgate-m} = \sum_{unit=1}^{all} Gen\_Final_{unit} \times \left(GSF_{(unit,M2M\_Flowgate-m)} - RTO\_LSF_{M2M\_Flowgate-m}\right)$$

Where:

M2M_Flowgate-m = the relevant flowgate;

unit = the relevant generator;

$RTO\_GTL_{M2M\_Flowgate\text{-}m}$ = the generation to load flow for the entire RTO footprint on M2M Flowgate m;

Gen_Final_{unit} = the portion of each unit's output that is serving RTO Net Load;

$GSF_{(unit,M2M\_Flowgate\text{-}m)}$ = the generator shift factor for each unit on M2M Flowgate m; and

$RTO\_LSF_{M2M\_Flowgate\text{-}m}$ = the load shift factor for the entire RTO footprint on M2M Flowgate m.

5.5 Compute the RTO Interchange Scheduling Impacts for all M2M Flowgates

For each scheduling point that the participating RTO is responsible for, determine the net interchange schedule in MWs. Table 3 below identifies both the participating RTO that is responsible for each listed scheduling point, and the "type" assigned to each listed scheduling point.

Table 3. List of Scheduling Points

Scheduling Point	Scheduling Point Type	Participating RTO(s) Responsible
NYISO-PJM	common	NYISO and PJM
HTP Scheduled Line	common	NYISO and PJM
Linden VFT Scheduled Line	common	NYISO and PJM
Neptune Scheduled Line	common	NYISO and PJM
PJM shall post and maintain a list of its non-common scheduling points on its OASIS website. PJM shall provide to NYISO notice of any new or deleted non-common scheduling points prior to implementing such changes in its M2M software.	non-common	PJM
NYISO non-common scheduling points include all Proxy Generator Buses and Scheduled Lines listed in the table that is set forth in Section 4.4.4 of the NYISO's Market Services Tariff that are not identified in this Table 3 as common scheduling points. The NYISO shall provide to PJM notice of any new or deleted non-common scheduling points prior to implementing such changes in its M2M software.	non-common	NYISO

$$RTO\_Transfers_{sched\_pt} = Imports_{sched\_pt} + WheelsIn_{sched\_pt} - Exports_{sched\_pt} - WheelsOut_{sched\_pt}$$

Where:

sched_pt =	the relevant scheduling point. A scheduling point can be either a proxy or a scheduled line;
$RTO\_Transfers_{sched\_pt}$ =	the net interchange schedule at a scheduling point;
$Imports_{sched\_pt}$ =	the import component of the interchange schedule at a scheduling point;
$WheelsIn_{sched\_pt}$ =	the injection of wheels-through component of the interchange schedule at a scheduling point;
$Exports_{sched\_pt}$ =	the export component of the interchange schedule at a scheduling point; and
$WheelsOut_{sched\_pt}$ =	the withdrawal of wheels-through component of the interchange schedule at a scheduling point.

The equation below applies to all non-common scheduling points that only one of the participating RTOs is responsible for. *Parallel_Transfers* are applied to the Market Flow of the responsible participating RTO. For example, the *Parallel_Transfers* computed for the IESO-NYISO non-common scheduling point are applied to the NYISO Market Flow.

$$Parallel\_Transfers_{\text{M2M\_Flowgate-m}} = \sum_{\text{nc\_sched\_pt}=1}^{all} RTO\_Transfers_{\text{nc\_sched\_pt}} \times PTDF_{(\text{nc\_sched\_pt,M2M\_Flowgate-m})}$$

Where:

M2M_Flowgate-m =	the relevant flowgate;
nc_sched_pt =	the relevant non-common scheduling point. A non-common scheduling point can be either a proxy or a scheduled line. Non-common scheduling points are identified in Table 3, above;

$Parallel\_Transfers_{M2M\_Flowgate\text{-}m}$ = the flow on M2M Flowgate m due to the net interchange schedule at the non-common scheduling point;

$RTO\_Transfers_{nc\_sched\_pt}$ = the net interchange schedule at the non-common scheduling point, where a positive number indicates the import direction; and

$PTDF_{(nc\_sched\_pt,\ M2M\_Flowgate\text{-}m)}$ = the power transfer distribution factor of the non-common scheduling point on M2M Flowgate m. For NYISO, the PTDF will equal the generator shift factor of the non-common scheduling point.

The equation below applies to common scheduling points that directly interconnect the participating RTOs. *Shared_Transfers* are applied to the Monitoring RTO's Market Flow only. NYISO to PJM transfers would be considered part of NYISO's Market Flow for NYISO-monitored Flowgates and part of PJM's Market Flow for PJM-monitored Flowgates.

$$Shared\_Transfers_{\text{M2M\_Flowgate-m}} = \sum_{\text{cmn\_sched\_pt}=1}^{all} RTO\_Transfers_{\text{cmn\_sched\_pt}} \times PTDF_{(\text{cmn\_sched\_pt,M2M\_Flowgate}-\text{m})}$$

Where:

M2M_Flowgate-m = the relevant flowgate;

cmn_sched_pt = the relevant common scheduling point. A common scheduling point can be either a proxy or a scheduled line. Common scheduling points are identified in Table 3, above;

$Shared\_Transfers_{M2M\_Flowgate\text{-}m}$ = the flow on M2M Flowgate m due to interchange schedules on the common scheduling point;

$RTO\_Transfers_{cmn\_sched\_pt}$ = the net interchange schedule at a common scheduling point, where a positive number indicates the import direction; and

$PTDF_{(cmn\_sched\_pt,\ M2M\_Flowgate\text{-}m)}$ = the generation shift factor of the common scheduling point on M2M Flowgate m. For NYISO, the PTDF will equal the generator shift factor of the common scheduling point.

5.6 Compute the PAR Effects for all M2M Flowgates

For the PARs listed in Table 4 below, the RTOs will determine the generation-to-load flows and interchange schedules, in MWs, that each PAR is impacting.

Table 4. List of Phase Angle Regulators

PAR	Description	PAR Type	Actual Schedule	Target Schedule	Responsible Participating RTO(s)
1	RAMAPO PAR3500	common	From telemetry	From telemetry*	NYISO and PJM
2	RAMAPO PAR4500	common	From telemetry	From telemetry*	NYISO and PJM
3	FARRAGUT TR11	common	From telemetry	From telemetry†	NYISO and PJM
4	FARRAGUT TR12	common	From telemetry	From telemetry†	NYISO and PJM
5	GOETHSLN BK_1N	common	From telemetry	From telemetry†	NYISO and PJM
6	WALDWICK O2267	common	From telemetry	From telemetry†	NYISO and PJM
7	WALDWICK F2258	common	From telemetry	From telemetry†	NYISO and PJM
8	WALDWICK E2257	common	From telemetry	From telemetry†	NYISO and PJM
9	STLAWRNC PS_33	non-common	From telemetry	0	NYISO
10	STLAWRNC PS_34	non-common	From telemetry	0	NYISO

*****Pursuant to the rules for implementing the M2M coordination process over the Ramapo PARs that are set forth in this M2M Schedule.

†Consistent with Schedule C to the Joint Operating Agreement between the Parties.

Compute the PAR control as the actual flow less the target flow across each PAR:

$$PAR\_Control_{par} = Actual\_MW_{par} - Target\_MW_{par}$$

Where:

par = each of the phase angle regulators listed in Table 4, above;

$PAR\_Control_{par}$ = the flow deviation on each of the PARs;

$Actual\_MW_{par}$ = the actual flow on each of the PARs, determined consistent with Table 4 above; and

Target_MW$_{par}$ = the target flow that each of the PARs should be achieving, determined in accordance with Table 4 above.

When the Actual_MW and Target_MW are both set to "From telemetry" in Table 4 above, the *PAR_Control* will equal zero.

Common PARs

In the equations below, the Non-Monitoring RTO is credited for or responsible for *PAR_Impact* resulting from the common PAR effect on the Monitoring RTO's M2M Flowgates. The common PAR impact calculation only applies to the common PARs identified in Table 4 above.

Compute control deviation for all common PARs on M2M Flowgate m based on the PAR_Control$_{par}$ MWs calculated above:

$$Cmn\_PAR\_Control_{M2M\_Flowgate-m} = \sum_{cmn\_par=1}^{all} \left(PSF_{(cmn\_par,M2M\_Flowgate-m)} \times PAR\_Control_{cmn\_par}\right)$$

Where:

M2M_Flowgate-m = the relevant flowgate;

cmn_par = each of the common phase angle regulators, modeled as Flowgates, identified in Table 4, above;

Cmn_PAR_Control$_{M2M_Flowgate-m}$ = the sum of flow on M2M Flowgate m after accounting for the operation of common PARs;

PSF$_{(cmn_par,M2M_Flowgate-m)}$ = the PSF of each of the common PARs on M2M Flowgate m; and

PAR_Control$_{cmn_par}$ = the flow deviation on each of the common PARs.

Compute the impact of generation-to-load and interchange schedules across all common PARs on M2M Flowgate m as the Market Flow across each common PAR multiplied by that PAR's shift factor on M2M Flowgate m:

$$Cmn\_PAR\_MF_{M2M\_Flowgate-m} = \sum_{cmn\_par=1}^{all} \left(\begin{matrix}\left(PSF_{(cmn\_par,M2M\_Flowgate-m)}\right) \times \\ \left(RTO\_GTL_{cmn\_par} + Parallel\_Transfers_{cmn\_par}\right)\end{matrix}\right)$$

Where:

M2M_Flowgate-m = the relevant flowgate;

cmn_par = the set of common phase angle regulators, modeled as Flowgates, identified in Table 4 above;

$Cmn\_PAR\_MF_{M2M\_Flowgate\text{-}m}$ = the sum of flow on M2M Flowgate m due to the generation to load flows and interchange schedules on the common PARs;

$PSF_{(cmn\_par,M2M\_Flowgate\text{-}m)}$ = the PSF of each of the common PARs on M2M Flowgate m;

$RTO\_GTL_{cmn\_par}$ = the generation to load flow for each common par, computed in the same manner as the generation to load flow is computed for M2M Flowgates in Section 5.4 above; and

$Parallel\_Transfers_{cmn\_par}$ = the flow on each of the common PARs caused by interchange schedules at non-common scheduling points.

Next, compute the impact of the common PAR effect for M2M Flowgate m as:

$$Cmn\_PAR\_Impact_{M2M\_Flowgate-m} = Cmn\_PAR\_MF_{M2M\_Flowgate-m} - Cmn\_PAR\_Control_{M2M\_Flowgate-m}$$

Where:

M2M_Flowgate-m = the relevant flowgate;

$Cmn\_PAR\_Impact_{M2M\_Flowgate\text{-}m}$ = potential flow on M2M Flowgate m that is affected by the operation of the common PARs;

$Cmn\_PAR\_MF_{M2M\_Flowgate\text{-}m}$ = the sum of flow on M2M Flowgate m due to the generation to load and interchange schedules on the common PARs; and

$Cmn\_PAR\_Control_{M2M\_Flowgate\text{-}m}$ = the flow deviation on each of the common PARs.

Non-Common PARs

For the equations below, the NYISO will be credited or responsible for *PAR_Impact* on all M2M Flowgates because the NYISO is the participating RTO that has input into the operation of these devices. The non-common PAR impact calculation only applies to the non-common PARs identified in Table 4 above.

Compute control deviation for all non-common PARs on M2M Flowgate m based on the PAR control MW above:

$$NC\_PAR\_Control_{M2M\_Flowgate-m} = \sum_{nc\_par=1}^{all} PSF_{(nc\_par,M2M\_Flowgate-m)} \times PAR\_Control_{nc\_par}$$

Where:

M2M_Flowgate-m = the relevant flowgate;

nc_par = each of the non-common phase angle regulators, modeled as Flowgates, identified in Table 4 above;

$NC\_PAR\_Control_{M2M\_Flowgate-m}$ = the sum of flow on M2M Flowgate m after accounting for the operation of non-common PARs;

$PSF_{(nc\_par,M2M\_Flowgate-m)}$ = the PSF of each of the non-common PARs on M2M Flowgate m; and

$PAR\_Control_{nc\_par}$ = the flow deviation on each of the non-common PARs.

Compute the impact of generation-to-load and interchange schedules across all non-common PARs on M2M Flowgate m as the Market Flow across each PAR multiplied by that PAR's shift factor on M2M Flowgate m:

$$NC\_PAR\_MF_{M2M\_Flowgate-m} = \sum_{nc\_par=1}^{all} \left(\begin{matrix} \left(PSF_{nc\_par,M2M\_Flowgate-m}\right) \times \\ \left(RTO\_GTL_{nc\_par} + Parallel\_Transfers_{nc\_par}\right) \end{matrix} \right)$$

Where:

M2M_Flowgate-m = the relevant flowgate;

nc_par = the set of non-common phase angle regulators, modeled as Flowgates, identified in Table 4 above;

$NC\_PAR\_MF_{M2M\_Flowgate-m}$ = the sum of flow on M2M Flowgate m due to the generation to load flows and interchange schedules on the non-common PARs;

$PSF_{(nc\_par,M2M\_Flowgate-m)}$ = the outage transfer distribution factor of each of the non-common PARs on M2M Flowgate m;

$RTO\_GTL_{nc\_par}$ = the generation to load flow for each non-common par, computed in the same manner as the generation to load flow is computed for M2M Flowgates in Section 5.4 above; and

$Parallel\_Transfers_{nc\_par}$ = the flow, as computed above where the M2M Flowgate m is one of the non-common PARs, on each of the non-common PARs caused by interchange schedules at non-common scheduling points.

Next, compute the non-common PAR impact for M2M Flowgate m as:

$$NC\_PAR\_Impact_{M2M\_Flowgate-m} = NC\_PAR\_MF_{M2M\_Flowgate-m} - NC\_PAR\_Control_{M2M\_Flowgate-m}$$

Where:

M2M_Flowgate-m = the relevant flowgate;

$NC\_PAR\_Impact_{M2M\_Flowgate-m}$ = the potential flow on M2M Flowgate m that is affected by the operation of non-common PARs;

$NC\_PAR\_MF_{M2M\_Flowgate-m}$ = the sum of flow on M2M Flowgate m due to the generation to load and interchange schedules on the non-common PARs; and

$NC\_PAR\_Control_{M2M\_Flowgate-m}$ = the sum of flow on M2M Flowgate m after accounting for the operation of non-common PARs.

Aggregate all PAR Effects for Each M2M Flowgate

The total impacts from the PAR effects for M2M Flowgate m is:

$$PAR\_Impact_{M2M\_Flowgate-m} = Cmn\_PAR\_Impact_{M2M\_Flowgate-m} + NC\_PAR\_Impact_{M2M\_Flowgate-m}$$

Where:

M2M_Flowgate-m = the relevant flowgate;

$PAR\_Impact_{M2M\_Flowgate-m}$ = the flow on M2M Flowgate m that is affected after accounting for the operation of both common and non-common PARs;

$Cmn\_PAR\_Impact_{M2M\_Flowgate\text{-}m}$ = potential flow on M2M Flowgate m that is affected by the operation of the common PARs; and

$NC\_PAR\_Impact_{M2M\_Flowgate\text{-}m}$ = the potential flow on M2M Flowgate m that is affected by the operation of non-common PARs.

5.7 Compute the RTO Aggregate Market Flow for all M2M Flowgates

With the *RTO_GTL* and *PAR_IMPACT* known, we can now compute the *RTO_MF* for all M2M Flowgates as:

$$RTO\_MF_{M2M\_Flowgate-m} = RTO\_GTL_{M2M\_Flowgate-m} + Parallel\_Transfers_{M2M\_Flowgate-m} + Shared\_Transfers_{M2M\_Flowgate-m} - PAR\_Impact_{M2M\_Flowgate-m}$$

Where:

M2M_Flowgate-m = the relevant flowgate;

$RTO\_MF_{M2M\_Flowgate\text{-}m}$ = the Market Flow caused by RTO generation dispatch and transaction scheduling on M2M Flowgate m after accounting for the operation of both the common and non-common PARs;

$RTO\_GTL_{M2M\_Flowgate\text{-}m}$ = the generation to load flow for the entire RTO footprint on M2M Flowgate m;

$Parallel\_Transfers_{M2M\_Flowgate\text{-}m}$ = the flow on M2M Flowgate m caused by interchange schedules that are not jointly scheduled by the participating RTOs;

$Shared\_Transfers_{M2M\_Flowgate\text{-}m}$ = the flow on M2M Flowgate m caused by interchange schedules that are jointly scheduled by the participating RTOs; and

$PAR\_Impact_{M2M\_Flowgate\text{-}m}$ = the flow on M2M Flowgate m that is affected after accounting for the operation of both the common and non-common PARs.

6 M2M Entitlement Determination Method

M2M Entitlements are the equivalent of financial rights for the Non-Monitoring RTO to use the Monitoring RTO's transmission system within the confines of the M2M redispatch process. The Parties worked together to develop the M2M Entitlement determination method set forth below.

Each Party shall calculate a M2M Entitlement on each M2M Flowgate and compare the results on a mutually agreed upon schedule.

6.1 M2M Entitlement Topology Model and Impact Calculation

The M2M Entitlement calculation shall be based on a static topological model to determine a non-Monitoring RTO's share of a M2M Flowgate's total capacity based on historic dispatch patterns. The model must include the following items:

1. a static transmission and generation model;
2. generator, load, and PAR shift factors;
3. generator output, load, and interchange schedules from 2009 through 2011 or any subsequent three year period mutually agreed to by the Parties;
4. a PAR impact assumption that the PAR control is perfect for all PARs within the transmission model except the PARs at the Michigan-Ontario border; and
5. new or upgraded Transmission Facilities.

The Parties shall calculate the GLDFs using a transmission model that contains a mutually agreed upon set of: (1) transmission lines that are modeled as in-service; (2) generators; and (3) loads. Using these GLDFs, generator output data from the three year period agreed to by the Parties, and load data from the three year period agreed to by the Parties, the Parties shall calculate each Party's MW impact on each M2M Flowgate for each hour in the three year period agreed to by the Parties. Using these impacts, the Parties shall create a reference year consisting of four periods ("M2M Entitlement Periods") for each M2M Flowgate. The M2M Entitlement Periods are as follows:

1. M2M Entitlement Period 1: December, January, and February;
2. M2M Entitlement Period 2: March, April, and May;
3. M2M Entitlement Period 3: June, July, and August; and
4. M2M Entitlement Period 4: September, October, and November.

For each of the M2M Entitlement Periods listed above the Non-Monitoring RTO will calculate its M2M Entitlement on each M2M Flowgate for each hour of each day of a week that will serve as the representative week for that M2M Entitlement Period. The M2M Entitlement for each day/hour, for each M2M Flowgate will be calculated by averaging the Non-Monitoring RTO's Market Flow on an M2M Flowgate for each particular day/hour of the week. The Non-Monitoring RTO shall use the Market Flow data for all of the like day/hours, that occurred in that day of the week and hour in the M2M Entitlement Period, in each year contained within the three year period agreed to by the Parties to calculate the Non-Monitoring RTO's average Market Flow on each M2M Flowgate. When determining M2M settlements each Party will use the M2M Entitlement that corresponds to the hour of the week and to the M2M Entitlement Period for which the real-time Market Flow is being calculated.

The Parties will use the M2M Entitlements that are calculated based on data from the 2009 through 2011 three year period for at least their first year of implementing the M2M coordination process.

6.2 M2M Entitlement Calculation

Each Party shall independently calculate the Non-Monitoring RTO's M2M Entitlement for all M2M Flowgates using the equations set forth in this section. The Parties shall mutually agree upon M2M Entitlement calculations. Any disputes that arise in the M2M Entitlement calculations will be resolved in accordance with the dispute resolution procedures set forth in section 35.15 of the Agreement.

Eighty percent of the RECo load shall be excluded from the calculation of Market Flows and M2M Entitlements, and shall instead be reflected as a PJM obligation over the Ramapo PARs in accordance with Sections 7.2.1 and 8.3 of this M2M Schedule D. The remaining twenty percent of RECo load shall be included in the M2M Entitlement and Market Flow calculations as PJM load.

The following assumptions apply to the M2M Entitlement calculation:

1. the Parties shall calculate the values in this section using the M2M Entitlement Topology Model discussed in Section 6.1 above, unless otherwise stated;
2. the impacts from the *Parallel_Transfers* and *Shared_Transfers* terms of the Market Flow calculation (*see* Section 5.5) are excluded from the Market Flow that is used to calculate M2M Entitlements;
3. perfect PAR Control exists for all PARs within the transmission model except the PARs at the Ontario/Michigan border; and
4. External Capacity Resources may be included in the calculation of M2M Entitlements consistent with Section 6.2.1.1 below.

Once the Reference Year Market Flows have been calculated for each interval to determine the integrated hourly Market Flow for each hour of the relevant three year period agreed to by the Parties, the new M2M Entitlement will be determined for a representative week in each M2M Entitlement Period using the method established in Section 6.1 above. In the event of new or upgraded Transmission Facilities, Section 6.3 below sets forth the rules that will be used to adjust M2M Entitlements.

6.2.1 Treatment of Out-of-Area Capacity Resources and Representation of Ontario/Michigan PARs in the M2M Entitlement Calculation Process

6.2.1.1 Modeling of External Capacity Resources

External Capacity Resources may be included in the M2M Entitlement calculation to the extent the Parties mutually agree to their inclusion.

For the initial implementation of this M2M coordination process that will use 2009 through 2011 data to develop M2M Entitlements, PJM will be permitted to include its External Capacity Resources in the M2M Entitlement calculation. NYISO has not requested inclusion of any External Capacity Resources in the M2M Entitlement calculation for the initial implementation of M2M. When the Parties decide to update the data used to determine M2M Entitlements:

a. PJM will be permitted to include External Capacity Resources that have an equivalent net M2M Entitlement impact to the net M2M Entitlement impact of the PJM External Capacity Resources that were used for the initial implementation of the M2M coordination process. Inclusion of PJM External Capacity Resources that exceed the net M2M Entitlement impact of the PJM External Capacity Resources that were used for the initial implementation of the M2M coordination process must be mutually agreed to by the Parties.

b. The Parties may mutually agree to permit the NYISO to include External Capacity Resources in the M2M Entitlement calculation.

6.2.1.2 Modeling of the Ontario/Michigan PARs

The Ontario/Michigan PARs will be modeled as not controlling power flows in the M2M Entitlement calculation process. The Parties agree that this modeling treatment is only appropriate when it is paired with the rules for calculating Market Flows and M2M settlements that are set forth in Sections 5 and 8 of this Agreement. Section 7.1 specifies how the RTOs will adjust Market Flows to account for the impact of the operation of the Ontario/Michigan PARs when the PARs are in service. The referenced Market Flow and M2M settlement rules are necessary because they are designed to ensure that M2M settlement obligations based on M2M Entitlements and Market Flows will not result in compensation for M2M redispatch when no actual M2M redispatch occurs.

6.3 M2M Entitlement Adjustment for New Transmission Facilities or Upgraded Transmission Facilities

This section sets forth the rules for incorporating new or upgraded Transmission Facilities into the M2M Entitlement calculation. For all M2M Entitlement adjustments, the non-building RTO is the non-funding market, and the building RTO is the funding market.

If the cost of a new or upgraded Transmission Facility is borne solely by the Market Participants of the building RTO for the new or upgraded Transmission Facility, the Market Participants of the building RTO will exclusively benefit from the increase in transfer capability on the building RTO's Transmission Facilities. Therefore, the non-building RTO's M2M Entitlements shall not increase as result of such new or upgraded Transmission Facilities.

Reciprocally, a building RTO's M2M Entitlements on the non-building RTO's M2M Flowgates shall not increase as a result of such new or upgraded Transmission Facilities.

To the extent a building RTO's upgraded or new Transmission Facility reduces the non-building RTO's impacts on one or more of the building RTO's M2M Flowgates by redistributing the non-building RTO's modeled flows, the non-building RTO's M2M Entitlement will be redistributed to ensure that the non-building RTO's aggregate M2M Entitlements on the building RTOs transmission system, including both existing M2M Flowgates and upgraded or new Transmission Facilities that are not yet M2M Flowgates, is not decreased.

In assessing the impact of transmission upgrades or new Transmission Facilities the non-building RTO's revised total circulation through the building RTO shall not result in a net increase in M2M Entitlements for the non-building RTO on the building RTO's transmission system. The formulas below shall be used to determine the *pro-rata* adjustment that will be applied to determine the redistributed interval level and hourly integrated Market Flow (*i.e.*, the Transmission Adjusted Market Flow). Once a Transmission Adjusted Market Flow that incorporates the topology adjustment and reallocation of flows has been calculated for each hour of the three year period agreed to by the Parties, the new M2M Entitlement will be determined for each hour and day of the week in each M2M Entitlement Period using the method established in Section 6.1 above.

If Transmission Facilities outside the Balancing Authority Areas of the Parties are added or upgraded and the new or upgraded Transmission Facilities would, individually or in aggregate, cause a change in either Party's aggregate M2M Entitlements of at least 10%, then the Parties may mutually agree to incorporate those Transmission Facilities into the static transmission model used to perform the M2M Entitlement calculations.

M2M Entitlement Transmission Adjusted Market Flow Calculation:

This process determines the Transmission Adjusted Market Flow for existing and new Transmission Facilities when new Transmission Facilities are built or existing Transmission Facilities are upgraded. This process does not apply to the addition of new M2M Flowgates that are associated with existing Transmission Facilities.

First, determine the reference set of Market Flows, called Reference Year Market Flows, for all M2M Flowgates using a static transmission model before adding any upgraded or new Transmission Facilities.

Second, account for new or upgraded Transmission Facilities in order from the first completed new/upgraded facility to the last (most recently completed) new/upgraded facility. Reflect the new/upgraded facilities, grouped by building RTO, in the reference year model to determine the new set of Market Flows called New Year Market Flows.

Third, compare the New Year Market Flows to the Reference Year Market Flows, in net across all M2M Flowgates and upgraded or new Transmission Facilities, to determine whether the New Year Market Flows have increased or decreased relative to the Reference Year Market

Flows. If the comparison indicates that New Year Market Flows have increased or decreased relative to the Reference Year Market Flows, apply the formulas below to determine new Transmission Adjusted Market Flows.

The comparison process is performed on a step-by-step basis. In some cases it will be appropriate to aggregate the impacts of more than one new or upgraded Transmission Facility into a single "step" of the evaluation.

Transmission Adjusted Market Flow Formula:

$$TotPost = \sum_{f \in F} Post_f$$
$$TotPre = \sum_{f \in F} Pre_f$$
$$NewPost = \sum_{f \in N} Post_f$$
$$ExistPost = \sum_{f \in E} Post_f$$
$$ExistPre = \sum_{f \in E} Pre_f$$

The non-building RTO's Transmission Adjusted Market Flow (Ent_f) is calculated as follows for each Transmission Facility in the building RTO's set of monitored M2M Flowgates $f \in F$:

$$Ent_f = \begin{cases} Post_f \cdot \dfrac{TotPre}{TotPost}, & \text{if } ExistPost > ExistPre \\ Post_f, & \text{if } ExistPost \leq ExistPre \text{ and } f \in E \\ \Big(Max\big((ExistPre - ExistPost), 0\big)\Big) \cdot \dfrac{Post_f}{NewPost}, & \text{if } ExistPost \leq ExistPre \text{ and } f \in N. \end{cases}$$

The building RTO's Transmission Adjusted Market Flow (Ent_f) is calculated as follows for each Transmission Facility in the non-building RTO's set of monitored M2M Flowgates $f \in F$:

$$Ent_f = \begin{cases} Post_f \cdot \dfrac{TotPre}{TotPost}, & \text{if } ExistPost > ExistPre \text{ and } f \in E \\ Post_f, & \text{if } ExistPost \leq ExistPre \text{ and } f \in E \\ 0, & \text{otherwise.} \end{cases}$$

Where:

f represents the relevant Transmission Facility within the building or non-building RTO.

E represents the existing facilities: the set of M2M Flowgates and previously accounted for new or upgraded Transmission Facilities (which may not be M2M Flowgates) in the relevant (building or non-building) RTO.

N represents the new or upgraded facilities: the set of Transmission Facilities in the relevant (building or non-building) RTO whose impact on M2M Entitlements is being evaluated.

F represents the set of all Transmission Facilities in the relevant (building or non-building) RTO, including all elements of sets *E* and *N*.

Pre_f is pre-upgrade market flow on *f*: the market flow on facility *f* calculated using the M2M Entitlement assumptions and based on a transmission topology that includes all pre-existing Transmission Facilities and all new or upgraded Transmission Facilities whose impact on M2M Entitlements has been previously evaluated and incorporated.

$Post_f$ is the post-upgrade market flow on *f*: the market flow on facility *f* calculated using the M2M Entitlement assumptions and based on a transmission topology that includes all pre-existing Transmission Facilities and all new or upgraded Transmission Facilities whose impact on M2M Entitlements has been previously evaluated and incorporated, *and* all new or upgraded Transmission Facilities whose impact on M2M Entitlements is being evaluated in the current evaluation step.

6.4 M2M Entitlement Adjustment for a New Set of Generation, Load and Interchange Data

Section 6.3 above addresses how new or upgraded transmission facilities will be reflected in the determination of M2M Entitlements. This section explains how the Parties will update the model used to determine M2M Entitlements to reflect new/updated generation, load and interchange information.

When moving the initial 2009-2011 period generation, interchange and load data forward, the RTOs will need to gather the data specified in Sections 6.1, 6.2 and (where appropriate) 6.3, above for the agreed upon three year period. External Capacity Resources will be included consistent with Section 6.2.1.1, above.

In accordance with the rules specified in Sections 6.1, 6.2 and (where appropriate) 6.3, above, the new set of data will be used to establish a new Reference Year Market Flow. When new or upgraded Transmission Facility adjustments are necessary, the new Reference Year Market Flows will be used to determine the New Year and Transmission Adjusted Market Flows based on the rules set forth above. When no new or upgraded Transmission Facility adjustments need to be applied, the new Reference Year Market Flows are the basis for the new M2M Entitlements.

7 Real-Time Energy Market Coordination

Operation of the Ramapo PARs and redispatch are used by the Parties in real-time operations to effectuate this M2M coordination process. Operation of the Ramapo PARs will permit the Parties to redirect energy to reduce the overall cost of managing transmission congestion and to converge the participating RTOs' cost of managing transmission congestion. Operation of the Ramapo PARs to manage transmission congestion requires cooperation between the NYISO and PJM. Operation of the Ramapo PARs shall be coordinated with the operation of other PARs at the NYISO – PJM interface.

When a M2M Flowgate that is under the operational control of either NYISO or PJM and that is eligible for redispatch coordination, becomes binding in the Monitoring RTOs real-time security constrained economic dispatch, the Monitoring RTO will notify the Non-Monitoring RTO of the transmission constraint and will identify the appropriate M2M Flowgate that requires redispatch assistance. The Monitoring and Non-Monitoring RTOs will provide the economic value of the M2M Flowgate constraint (i.e., the Shadow Price) as calculated by their respective dispatch models. Using this information, the security-constrained economic dispatch of the Non-Monitoring RTO will include the M2M Flowgate constraint; the Monitoring RTO will evaluate the actual loading of the M2M Flowgate constraint and request that the Non-Monitoring RTO modify its Market Flow via redispatch if it can do so more efficiently than the Monitoring RTO (i.e., if the Non-Monitoring RTO has a lower Shadow Price for that M2M Flowgate than the Monitoring RTO).

An iterative coordination process will be supported by automated data exchanges in order to ensure the process is manageable in a real-time environment. The process of evaluating the Shadow Prices between the RTOs will continue until the Shadow Prices converge and an efficient redispatch solution is achieved. The continual interactive process over the following dispatch cycles will allow the transmission congestion to be managed in a coordinated, cost-effective manner by the RTOs. A more detailed description of this iterative procedure is discussed in Section 7.1 and the appropriate use of this iterative procedure is described in Section 8.

7.1 Real-Time Redispatch Coordination Procedures

The following procedure will apply for managing redispatch for M2M Flowgates in the real-time Energy market:

7.1.1 M2M Flowgates shall be monitored per each RTO's internal procedures.

a. When (i) an M2M Flowgate is constrained to a defined limit (actual or contingency flow) by a non-transient constraint, and (ii) Market Flows are such that the Non-Monitoring RTO may be able to provide an appreciable amount of redispatch relief to the Monitoring RTO, then the Monitoring RTO shall reflect the monitored M2M Flowgate as constrained.

b. M2M Flowgate limits shall be periodically verified and updated.

7.1.2 Testing for an Appreciable Amount of Redispatch Relief and Determining the Settlement Market Flow:

When the PARs at the Michigan-Ontario border are not in-service, the ability of the Non-Monitoring RTO to provide an appreciable amount of redispatch relief will be determined by comparing the Non-Monitoring RTO's Market Flow to the Non-Monitoring RTO M2M Entitlement for the constrained M2M Flowgate.

When the Non-Monitoring RTO Market Flow (also the Market Flow used for settlement) is greater than the Non-Monitoring RTO M2M Entitlement for the constrained M2M Flowgate, the Monitoring RTO will assume that an appreciable amount of redispatch relief is available from the Non-Monitoring RTO and will engage the M2M coordination process for the constrained M2M Flowgate.

When any of the PARs at the Michigan-Ontario border are in-service, the ability of the Non-Monitoring RTO to provide an appreciable amount of redispatch relief will be determined by comparing either (i) the Non-Monitoring RTO's unadjusted Market Flow, or (ii) the Non-Monitoring RTO Market Flow adjusted to reflect the expected impact of the PARs at the Michigan-Ontario border ("LEC Adjusted Market Flow"), to the Non-Monitoring RTO M2M Entitlement for the constrained M2M Flowgate. The rules for determining which Market Flow (unadjusted or adjusted) to compare to the Non-Monitoring RTO M2M Entitlement when any of the PARs at the Michigan-Ontario border are in-service are set forth below.

a. Calculating the Expected Impact of the PARs at the Michigan-Ontario Border on Market Flows

The Non-Monitoring RTO's unadjusted Market Flow is determined as *RTO_MF* in accordance with the calculation set forth in Section 5 above. The expected impact of the PARs at the Michigan-Ontario border is determined as follows:

$$MICH-OH\_PAR\_Impact_{M2M\_Flowgate-m} = \sum_{MICH-OH\ Path=1}^{4} \begin{pmatrix} \left(PSF_{(MICH-OH\ Path,M2M\_Flowgate-m)}\right) \times \\ \left(RTO\_MF_{MICH-OH\ Path} - LEC/4\right) \end{pmatrix}$$

Where:

M2M_Flowgate-m = the relevant M2M Flowgate;

MICH-OH Path = each of the four PAR paths connecting Michigan to Ontario, Canada;

$MICH\text{-}OH\_PAR\_Impact_{M2M\_Flowgate\text{-}m}$ = the expected impact of the operation of the PARs at the Michigan-Ontario border on the flow on M2M Flowgate m;

$PSF_{(MICH\text{-}OH\ Path,M2M\_Flowgate\text{-}m)}$ = the PSF of each of the four Michigan-Ontario PAR paths on M2M Flowgate m;

$RTO\_MF_{MICH\text{-}OH\ Path}$ = the Market Flow for each of the four Michigan-Ontario PAR paths, computed in the same manner as the Market Flow is computed for M2M Flowgates in Section 5 above; and

LEC = Actual circulation around Lake Erie as measured by each RTO.

The Non-Monitoring RTO's LEC Adjusted Market Flow, reflecting the expected impact of the PARs on the Michigan-Ontario border, can be determined by adjusting the *RTO_MF* from Section 5 to incorporate the *MICH-OH_PAR_Impact* calculated above.

$$LEC\ Adjusted\ Market\ Flow_{M2M\_Flowgate-m} = RTO\_MF_{M2M\_Flowgate-m} - MICH-OH\_PAR\_Impact_{M2M\_Flowgate-m}$$

Where:

M2M_Flowgate-m = the relevant flowgate;

MICH-OH Path = each of the four PAR paths connecting Michigan to Ontario, Canada;

$MICH\text{-}OH\_PAR\_Impact_{M2M\_Flowgate\text{-}m}$ = the expected impact of the operation of the PARs at the Michigan-Ontario border on the flow on M2M Flowgate m;

$RTO\_MF_{M2M\_Flowgate\text{-}m}$ = the Market Flow caused by RTO generation dispatch and transaction scheduling on M2M Flowgate m after accounting for the operation of both the common and non-common PARs; and

$LEC\ Adjusted\ Market\ Flow_{M2M\_Flowgate\text{-}m}$ = the Market Flow caused by RTO generation dispatch and transaction scheduling on M2M Flowgate m after accounting for the operation of the common PARs, the non-common PARs, and the PARs at the Michigan-Ontario border.

b. Determining Whether to Use Unadjusted Market Flow or LEC Adjusted Market Flow; Determining if Appreciable Redispatch Relief is Available

1) When the Non-Monitoring RTO's LEC Adjusted Market Flow equals the Non-Monitoring RTO's unadjusted Market Flow and the Non-Monitoring RTO's Market Flow (also the Market Flow used for settlement) is greater than the Non-Monitoring RTO M2M Entitlement for the constrained M2M Flowgate, the Monitoring RTO will assume that an appreciable amount of redispatch relief is available from the Non-Monitoring RTO and will engage the M2M coordination process for the constrained M2M Flowgate.

2) When the Non-Monitoring RTO's unadjusted Market Flow is greater than the Non-Monitoring RTO's LEC Adjusted Market Flow, then the following calculation shall be performed to determine if an appreciable amount of redispatch relief is expected to be available:

   A. Determine the minimum of (a) the Non-Monitoring RTO's unadjusted Market Flow, and (b) the Non-Monitoring RTO's M2M Entitlement, for the constrained M2M Flowgate; and

   B. Determine the maximum of (x) the value from step A above, and (y) the Non-Monitoring RTO's LEC Adjusted Market Flow

   When the value from B above (the Market Flow used for settlement), is greater than the Non-Monitoring RTO's M2M Entitlement for the constrained M2M Flowgate, the Monitoring RTO will assume that an appreciable amount of redispatch relief is available from the Non-Monitoring RTO and will engage the M2M coordination process for the constrained M2M Flowgate.

3) When the Non-Monitoring RTO's unadjusted Market Flow is less than the Non-Monitoring RTO LEC Adjusted Market Flow, the following calculation shall be performed to determine if an appreciable amount of redispatch relief is expected to be available:

   A. Determine the maximum of (a) the Non-Monitoring RTO's unadjusted Market Flow, and (b) the Non-Monitoring RTO M2M Entitlement, for the constrained M2M Flowgate; and

   B. Determine the minimum of (x) the value from A above, and (y) the Non-Monitoring RTO's LEC Adjusted Market Flow

   When the value from B above (the Market Flow used for settlement), is greater than the Non-Monitoring RTO's M2M Entitlement for the constrained M2M Flowgate, the Monitoring RTO will assume that an appreciable amount

of redispatch relief is available from the Non-Monitoring RTO and will engage the M2M coordination process for the constrained M2M Flowgate.

7.1.3 The Monitoring RTO initiates M2M, notifies the Non-Monitoring RTO of the M2M Flowgate that is subject to coordination and updates required information.

7.1.4 The Non-Monitoring RTO shall acknowledge receipt of the notification and one of the following shall occur:

a. The Non-Monitoring RTO refuses to activate M2M:
    i. The Non-Monitoring RTO notifies the Monitoring RTO of the reason for refusal; and
    ii. The M2M State is set to "Refused"; or
b. The Non-Monitoring RTO agrees to activate M2M:
    i. Such an agreement shall be considered an initiation of the M2M process for operational and settlement purposes; and
    ii. The M2M State is set to "Activated".

7.1.5 The Parties have agreed to transmit information required for the administration of this procedure, as per section 35.7.1 of the Agreement.

7.1.6 As Shadow Prices converge and approach zero or the Non-Monitoring RTO's Market Flows and Shadow Prices are such that an appreciable amount of redispatch relief can no longer be provided to the Monitoring RTO, the Monitoring RTO shall be responsible for the continuation or termination of the M2M process. Current and forecasted future system conditions shall be considered.[1]

When the Monitoring RTO's Shadow Price is not approaching zero the Monitoring RTO can (1) use the procedure called *Testing for an Appreciable Amount of Relief and Determining the Settlement Market Flow* from step 2b above, and (2) compare the Non-Monitoring RTO's Shadow Price to the Monitoring RTO's Shadow Price, to determine whether there is an appreciable amount of market flow relief being provided.

When the *Testing for an Appreciable Amount of Relief and Determining the Settlement Market Flow* procedure indicates there is not an appreciable amount of relief being provided, and the Non-Monitoring RTO Shadow Price is not less than

[1] Termination of M2M redispatch may be requested by either RTO in the event of a system emergency.

the Monitoring RTO Shadow Price, then the Monitoring RTO may terminate the M2M coordination process.

7.1.7 Upon termination of M2M, the Monitoring RTO shall

a. Notify the Non-Monitoring RTO; and

b. Transmit M2M data to the Non-Monitoring RTO with the M2M State set to "Closed". The timestamp with this transmission shall be considered termination of the M2M process for operational and settlement purposes.

7.2 Real-Time Ramapo PAR Coordination

The Ramapo PARs will be operated to facilitate interchange schedules while minimizing regional congestion costs. When congestion is not present, the Ramapo PARs will be operated to achieve the target flow as established below in Section 7.2.1.

In order to preserve the long-term availability of the Ramapo PARs, a maximum of 20 taps per PAR per day, and a maximum of 400 taps per calendar month will normally be observed.

7.2.1 Ramapo Target Value

A Target Value for flow between the NYISO and PJM shall be determined for each Ramapo PAR (the 3500 PAR and the 4500 PAR) ("$\text{Target}_{\text{Ramapo}}$"). These Target Values shall be determined by a formula based on the net interchange schedule between the Parties plus the deviation of actual flows and desired flows across the ABC and JK interfaces and shall be used for settlement purposes as:

$$Target_{Ramapo} = (RamapoInterchangeFactor) + \left(Actual_{JK} + RECo\_Load - Actual_{ABC}\right) - \left(Auto\ Correction\ Factor_{JK} - Auto\ Correction\ Factor_{ABC}\right)$$

Where:

$Target_{Ramapo} =$ Calculated Target Value for the flow on each Ramapo PAR (PAR3500 and PAR4500);

$RamapoInterchangeFactor =$ 61% of the net interchange schedule between PJM and NYISO over the AC tie lines distributed evenly across the in-service Ramapo PARs; A positive value indicates flows from PJM to NYISO and a negative value indicates flows from NYISO to PJM.

$Actual_{JK} =$ Telemetered real-time flow over the JK interface. A positive value indicates flows from NYISO to PJM and a negative value indicates flows from PJM to NYISO;

$Actual_{ABC} =$ Telemetered real-time flow over the ABC interface. A positive value indicates flows from PJM to NYISO and a negative value indicates flows from NYISO to PJM.;

$RECo\_Load =$ 80% of the telemetered real-time Rockland Electric Company Load;

$Auto\ Correction\ Factor_{JK} =$ The JK interface Auto Correction component of the JK interface real-time desired flow as described in Schedule C to the Agreement. A positive value indicates flows from NYISO to PJM and a negative value indicates flows from PJM to NYISO; and

$Auto\ Correction\ Factor_{ABC} =$ The ABC interface Auto Correction component of the ABC interface real-time desired flow as described in Schedule C to the Agreement. A positive value indicates flows from PJM to NYISO and a negative value indicates flows from NYISO to PJM.

In accordance with Appendix 3 of Schedule C to the Agreement, the Participating RTOs will mutually agree on the circumstances under which they will allow up to thirteen percent of PJM to New York interchange schedules to flow over the ABC and JK interfaces. When a portion of PJM to New York interchange schedules are allowed to flow over the ABC and JK interfaces, the allowed scheduled interchange will be captured as a change to the $Actual_{JK}$ and $Actual_{ABC}$ terms above.

7.2.2 Determination of the Cost of Congestion at Ramapo

The incremental cost of congestion relief provided by each Ramapo PAR shall be determined by each of the Parties. These costs shall be determined by multiplying each Party's Shadow Price on each of its M2M Flowgates by the PSF for each Ramapo PAR for the relevant M2M Flowgates.

The incremental cost of congestion relief provided by each Ramapo PAR shall be determined by the following formula:

$$Congestion\$_{(Ramapo,RTO)} =$$

$$\sum_{M2M\ Flowgates-m \in M2M\ Flowgates_{RTO}} \left(PSF_{(M2M\ Flowgate-m,Ramapo)} \times Shadow\$_{M2M\ Flowgate-m}\right)$$

Where:

$Congestion\$_{(Ramapo,RTO)} =$	Cost of congestion at each Ramapo PAR for the relevant participating RTO;
$M2M\ Flowgates_{RTO} =$	Set of M2M Flowgates for the relevant participating RTO;
$PSF_{(M2M\ Flowgate-m,Ramapo)} =$	The PSF for each Ramapo PARs on M2M Flowgate–m; and
$Shadow\$_{M2M\ Flowgate-m} =$	The Shadow Price on the relevant participating RTO's M2M Flowgate m.

7.2.3 Desired PAR Changes

If the NYISO congestion costs associated with the Ramapo PAR are greater than the PJM congestion costs associated with the Ramapo PAR, then hold or take taps into NYISO.

If the PJM congestion costs associated with the Ramapo PAR are greater than NYISO congestion costs associated with the Ramapo PAR, then hold or take taps into PJM.

Any action on the Ramapo PARs will be coordinated between the Parties and taken into consideration other PAR actions.

8 Real-Time Energy Market Settlements

8.1 Information Used to Calculate M2M Settlements

For each M2M Flowgate there are two components of the M2M settlement, a redispatch component and a Ramapo PARs coordination component. Both M2M settlement components are defined below.

For the redispatch component, market settlements under this M2M Schedule will be calculated based on the following:

1. the Non-Monitoring RTO's real-time Market Flow, determined in accordance with Section 7.1 above, on each M2M Flowgate compared to its M2M Entitlement for M2M Flowgates eligible for redispatch on each M2M Flowgate; and
2. the *ex-ante* Shadow Price at each M2M Flowgate.

For the Ramapo PARs coordination component, Market settlements under this M2M Schedule will be calculated based on the following:

1. actual real-time flow on each of the Ramapo PARs compared to its target flow ($Target_{Ramapo}$);
2. Ramapo PSF for each M2M Flowgate; and
3. the *ex-ante* Shadow Price at each M2M Flowgate.

8.2 Real-Time Redispatch Settlement

If the M2M Flowgate is eligible for redispatch, then compute the real-time redispatch settlement for each interval as specified below.

When $RT\_MktFlow_{M2M\ Flowgate-m} > M2M\_Ent_{M2M\ Flowgate-m}$,

$$MonRTO\_Payment_{M2M\ Flowgate-m} = Mon\_Shadow\$_{M2M\ Flowgate-m} \times \left(RT\_MktFlow_{M2M\ Flowgate-m} - M2M\_Ent_{M2M\ Flowgate-m}\right)$$

When $RT\_MktFlow_{M2M\ Flowgate-m} < M2M\_Ent_{M2M\ Flowgate-m,}$,

$$Non\_Mon\_Payment_{M2M\ Flowgate-m} = Non\_Mon\_Shadow\$_{M2M\ Flowgate-m} \times \left(M2M\_Ent_{M2M\ Flowgate-m} - RT\_MktFlow_{M2M\ Flowgate-m}\right)$$

Where:

$Non\_MonRTO\_Payment_{M2M\ Flowgate-m}$ = M2M redispatch settlement, in the form of a payment to the Non-Monitoring RTO from the Monitoring RTO, for M2M Flowgate m;

$MonRTO\_Payment_{M2M\ Flowgate-m}$ = M2M redispatch settlement, in the form of a payment to the Monitoring RTO from the Non-Monitoring RTO, for M2M Flowgate m;

$RT\_MktFlow_{M2M\ Flowgate-m}$ = real-time RTO_MF, determined for settlement in accordance with Section 7.1 above, for M2M Flowgate m;

$M2M\_Ent_{M2M\ Flowgate-m}$ = Non-Monitoring RTO M2M Entitlement for M2M Flowgate m;

$Mon\_Shadow\$_{M2M\ Flowgate-m}$ = Monitoring RTO's Shadow Price for M2M Flowgate m; and

$Non\_Mon\_Shadow\$_{M2M\ Flowgate-m} =$ Non-Monitoring RTO's Shadow Price for M2M Flowgate m.

8.3 Ramapo PARs Settlement

For each M2M Flowgate, compute the real-time Ramapo PAR settlement for each interval as specified below.

For each M2M Flowgate, when $Actual_{Ramapo} > Target_{Ramapo}$,

$$PJMPayment_{M2M\ Flowgate-m} = Shadow\$_{M2M\ Flowgate-m} \times PSF_{(M2M\ Flowgate-m,Ramapo)} \times \left(Actual_{Ramapo} - Target_{Ramapo}\right)$$

For each M2M Flowgate, when $Actual_{Ramapo} < Target_{Ramapo}$,

$$NYPayment_{M2M\ Flowgate-m} = Shadow\$_{M2M\ Flowgate-m} \times PSF_{(M2M\ Flowgate-m,Ramapo)} \times \left(Target_{Ramapo} - Actual_{Ramapo}\right)$$

Where:

$Actual_{Ramapo} =$ Measured real-time actual flow on each of the Ramapo PARs. For purposes of this equation, a positive value indicates a flow from PJM to the NYISO;

$Target_{Ramapo} =$ Calculated Target Value for the flow on each Ramapo PAR (PAR3500 and PAR4500) as described in Section 7.2.1 above. For purposes of this equation, a positive value indicates a flow from PJM to the NYISO;

$Shadow\$_{M2M\ Flowgate-m} =$ Shadow Price, as computed by the payee, for M2M Flowgate m;

$PSF_{(M2M\ Flowgate-m,Ramapo)} =$ The PSF for each Ramapo PARs for M2M Flowgate m;

$PJMPayment_{M2M\ Flowgate-m} =$ Ramapo PARs settlement, in the form of a payment to PJM from NYISO, for M2M Flowgate m; and

$NYPayment_{M2M\ Flowgate-m} =$ Ramapo PARs settlement, in the form of a payment to NYISO from PJM, for M2M Flowgate m.

8.4 Calculating a Combined M2M Settlement

The M2M settlement for each M2M Flowgate shall be the sum of the real-time redispatch settlement and Ramapo PARs settlement

If NYISO is the Monitoring RTO for the M2M Flowgate:

$$M2M\ Settlement_{M2M\ Flowgate\ m_i} = \left(\begin{matrix} MonRTO\ Payment_{M2M\ Flowgate\ m_i} - \\ Non\ MonRTO\ Payment_{M2M\ Flowgate\ m_i} + NYPayment\ _{M2M\ Flowgate\ m_i} \end{matrix} \right) \times {}^{s_i}/_{3600sec}$$

If PJM is the Monitoring RTO for the M2M Flowgate:

$$M2M\ Settlement_{M2M\ Flowgate\ m_i} = \left(\begin{matrix} MonRTO\ Payment_{M2M\ Flowgate\ m_i} - \\ Non\ MonRTO\ Payment_{M2M\ Flowgate\ m_i} + PJMPayment\ _{M2M\ Flowgate\ m_i} \end{matrix} \right) \times {}^{s_i}/_{3600sec}$$

Where:

$M2M\ Settlement_{M2M\ Flowgate\ m_i} =$ M2M settlement, defined as a payment from the Non-Monitoring RTO to the Monitoring RTO, for interval *i*; and

$Non\ MonRTO\ Payment_{M2M\ Flowgate\ m_i} =$ Non-Monitoring RTO payment to Monitoring RTO for congestion on M2M Flowgate m for interval *i*;

$MonRTO\ Payment_{M2M\ Flowgate\ m_i} =$ Monitoring RTO payment to Non-Monitoring RTO for congestion on M2M Flowgate m for interval *i*;

$PJMPayment\ _{M2M\ Flowgate\ m_i} =$ Ramapo PARs settlement, in the form of a payment to PJM from NYISO, for M2M Flowgate m for interval *i*;

$NYPayment\ _{M2M\ Flowgate\ m_i} =$ Ramapo PARs settlement, in the form of a payment to NYISO from PJM, for M2M Flowgate m for interval *i*; ands_i = number of seconds in interval *i*.

For the purpose of settlements calculations, each interval will be calculated separately and then integrated to an hourly value:

$$M2M\_Settlement_h = \sum_{M2M\ Flowgate\ m}^{all} \sum_{i=1}^{n} M2M\_Settlement_{M2M\ Flowgate\ m_i}$$

Where:

$M2M\_Settlement_h =$ M2M settlement for hour *h*; and

n = Number of intervals in hour *h*.

Section 10.1 of this M2M Schedule sets forth circumstances under which the M2M coordination process and M2M settlements may be temporarily suspended.

9 When One of the RTOs Does Not Have Sufficient Redispatch

Under the normal M2M coordination process, sufficient redispatch for a M2M Flowgate may be available in one RTO but not the other. When this condition occurs, in order to ensure an operationally efficient dispatch solution is achieved, the RTO without sufficient redispatch will redispatch all effective generation to control the M2M Flowgate to a "relaxed" Shadow Price limit. Then this RTO calculates the Shadow Price for the M2M Flowgate using the available redispatch which is limited by the maximum physical control action inside the RTO. Because the magnitude of the Shadow Price in this RTO cannot reach that of the other RTO with sufficient redispatch, unless further action is taken, there will be a divergence in Shadow Prices and the LMPs at the RTO border.

A special process is designed to enhance the price convergence under this condition. If the Non-Monitoring RTO cannot provide sufficient relief to reach the Shadow Price of the Monitoring RTO, the constraint relaxation logic will be deactivated. The Non-Monitoring RTO will then be able to use the Monitoring RTO's Shadow Price without limiting the Shadow Price to the maximum Shadow Price associated with a physical control action inside the Non-Monitoring RTO. With the M2M Flowgate Shadow Prices being the same in both RTOs, their resulting bus LMPs will converge in a consistent price profile.

10 Appropriate Use of the M2M Process

Under normal operating conditions, the Parties will model all M2M Flowgates in their respective real-time EMSs. M2M Flowgates will be controlled using M2M tools for coordinated redispatch and coordinated operation of the Ramapo PARs, and will be eligible for M2M settlements.

10.1 Qualifying Conditions for M2M Settlement

10.1.1 Purpose of M2M. M2M was established to address regional, not local issues. The intent is to implement the M2M coordination process and settle on such coordination where both Parties have significant impact.

10.1.2 Minimizing Less than Optimal Dispatch. The Parties agree that, as a general matter, they should minimize financial harm to one RTO that results from the

M2M coordination process initiated by the other RTO that produces less than optimal dispatch.

10.1.3 **Use M2M Whenever Binding a M2M Flowgate**. During normal operating conditions, the M2M redispatch process will be initiated by the Monitoring RTO whenever an M2M Flowgate that is eligible for redispatch is constrained and therefore binding in its dispatch. Coordinated operation of the Ramapo PARs is the default condition and does not require initiation by either Party to occur.

10.1.4 **Most Limiting Flowgate**. Generally, controlling to the most limiting Flowgate provides the preferable operational and financial outcome. In principle and as much as practicable, the M2M coordination process will take place on the most limiting Flowgate, and to that Flowgate's actual limit (thermal, reactive, stability).

10.1.5 **Abnormal Operating Conditions**. A Party that is experiencing system conditions that require the system operators' immediate attention may temporarily delay implementation of the M2M redispatch process or cease an active M2M redispatch event until a reasonable time after the system condition that required the system operators' immediate attention is resolved.

10.1.6 **Transient System Conditions.** A Party that is experiencing intermittent congestion due to transient system conditions including, but not limited to, interchange ramping or transmission switching, is not required to implement the M2M redispatch process unless the congestion continues after the transient condition(s) have concluded.

10.1.7 **Temporary Cessation of M2M Coordination Process Pending Review.** If the net charges to a Party resulting from implementation of the M2M coordination process for a market-day exceed five hundred thousand dollars, then the Party that is responsible for paying the charges may (but is not required to) suspend implementation of this M2M coordination process (for a particular M2M Flowgate, or of the entire M2M coordination process) until the Parties are able to complete a review to ensure that both the process and the calculation of settlements resulting from the M2M coordination process are occurring in a manner that is both (a) consistent with this M2M Coordination Schedule, and (b) producing a just and reasonable result. The Party requesting suspension must identify specific concerns that require investigation within one business day of requesting suspension of the M2M coordination process. If, following their investigation, the Parties mutually agree that the M2M coordination process is (i) being implemented in a manner that is consistent with this M2M Coordination Schedule and (ii) producing a just and reasonable result, then the M2M coordination process shall be re-initiated as quickly as practicable. If the Parties are unable to mutually agree that the M2M coordination process was being implemented appropriately, or of the Parties are unable to mutually agree that the M2M coordination process was producing a just and reasonable result, the suspension (for a particular M2M Flowgate, or of the entire M2M coordination

process) shall continue while the Parties engage in dispute resolution in accordance with section 35.15 of the Agreement.

10.1.8 Suspension of M2M Settlement when a Request for Taps on Common PARs to Prevent Overuse is Refused. If a Party requests that taps be taken on any Common PAR to reduce the requesting Party's overuse of the other Party's transmission system, refusal by the other Party or its Transmission Owner(s) to permit taps to be taken to reduce overuse shall result in the Ramapo PAR settlement component of M2M (*see* Section 8.3 above) being suspended for the requesting Party until the tap request is granted. The refusing Party shall not be relieved of any of its M2M settlement obligations.

10.1.9 Suspension of Ramapo PAR Settlement due to Transmission Facility Outage(s). The Parties shall suspend Ramapo PAR settlements when: (a) the Branchburg – Ramapo 500kV 5018 transmission line is out of service; or (b) there is a simultaneous outage of Ramapo PAR3500 and Ramapo PAR4500; or (c) the occurrence of both 10.1.9(a) and 10.1.9(b).

No other Transmission Facility outage(s) will trigger suspension of Ramapo PAR settlements under this section 10.1.9.

10.2 After-the-Fact Review to Determine M2M Settlement

Based on the communication and data exchange that has occurred in real-time between the Parties, there will be an opportunity to review the use of the market-to-market process to verify it was an appropriate use of the M2M coordination process and subject to M2M settlement. The Parties will initiate the review as necessary to apply these conditions and settlements adjustments.

10.3 Access to Data to Verify Market Flow Calculations

Each Party shall provide the other Party with data to enable the other Party independently to verify the results of the calculations that determine the M2M settlements under this M2M Coordination Schedule. A Party supplying data shall retain that data for two years from the date of the settlement invoice to which the data relates, unless there is a legal or regulatory requirement for a longer retention period. The method of exchange and the type of information to be exchanged pursuant to section 35.7.1 of the Agreement shall be specified in writing. The Parties will cooperate to review the data and mutually identify or resolve errors and anomalies in the calculations that determine the M2M settlements. If one Party determines that it is required to self report a potential violation to the Commission's Office of Enforcement regarding its compliance with this M2M Coordination Schedule, the reporting Party shall inform, and provide a copy of the self report to, the other Party. Any such report provided by one Party to the other shall be Confidential Information.

11 M2M Change Management Process

11.1 Notice

Prior to changing any process that implements this M2M Schedule, the Party desiring the change shall notify the other Party in writing or via email of the proposed change. The notice shall include a complete and detailed description of the proposed change, the reason for the proposed change, and the impacts the proposed change is expected to have on the implementation of the M2M coordination process, including M2M settlements under this M2M Schedule.

11.2 Opportunity to Request Additional Information

Following receipt of the Notice described in Section 10.1, the receiving party may make reasonable requests for additional information/documentation from the other Party. Absent mutual agreement of the parties, the submission of a request for additional information under this Section shall not delay the obligation to timely note any objection pursuant to Section 10.3, below.

11.3 Objection to Change

Within ten business days after receipt of the Notice described in Section 10.1 (or within such longer period of time as the parties mutually agree), the receiving Party may notify in writing or via email the other Party of its disagreement with the proposed change. Any such notice must specifically identify and describe the concern(s) that required the receiving party to object to the described change.

11.4 Implementation of Change

The Party proposing a change to its implementation of the M2M coordination process shall not implement such change until (a) it receives written or email notification from the other Party that the other Party concurs with the change, or (b) the ten business day notice period specified in Section 10.3 expires, or (c) completion of any dispute resolution process initiated pursuant to this Agreement.