

## Attachment I

## 2.5 Definitions - E

**East of Central-East:** An electrical area comprised of Load Zones F, G, H, I, J, and K, as identified in the ISO Procedures.

**East of Central-East Excluding Long Island:** An electrical area comprised of Load Zones F, G, H, I, and J, as identified in the ISO Procedures.

**East of Central-East Excluding New York City and Long Island:** An electrical area comprised of Load Zones F, G, H, and I, as identified in the ISO Procedures.

**Economic Operating Point:** The megawatt quantity which is a function of: i) the real-time LBMP at the Resource bus; and ii) the Supplier's real-time eleven constant cost step Energy Bid, for the Resource, such that (a) the offer price associated with Energy offers below that megawatt quantity (if that megawatt quantity is not that Resource's minimum output level) must be less than or equal to the real-time LBMP at the Resource bus, and (b) the offer price associated with Energy offers above that megawatt quantity (if that megawatt quantity is not that Resource's maximum output level) must be greater than or equal to the real-time LBMP at the Resource bus. In cases where multiple megawatt values meet conditions (a) and (b), the Economic Operating Point is the megawatt value meeting these conditions that is closest to the Resource's real-time scheduled Energy provided. In cases where the Economic Operating Point would be less than the minimum output level, the Economic Operating Point will be set equal to the MW value of the first point on the Energy Bid curve and in cases where the Economic Operating Point would be greater than the maximum output level, the Economic Operating Point will be set equal to the MW value of the last point on the Energy Bid curve. When evaluating the Economic Operating Point of a BTM:NG Resource, only Energy offers corresponding to quantities in excess of its Host Load will be considered.

**Emergency:** Any abnormal system condition that requires immediate automatic or manual action to prevent or limit loss of transmission facilities or Generators that could adversely affect the reliability of an electric system.

**Emergency Demand Response Program ("EDRP"):** A program pursuant to which the ISO makes payments to Curtailment Service Providers that voluntarily take effective steps in real time, pursuant to ISO procedures, to reduce NYCA demand in Emergency conditions.

**Emergency State:** The state that the NYS Power System is in when an abnormal condition occurs that requires automatic or immediate, manual action to prevent or limit loss of the NYS Transmission System or Generators that could adversely affect the reliability of the NYS Power System.

**Emergency Upper Operating Limit (UOL<sub>E</sub>):** The upper operating limit that a Generator or an Aggregation, except for the Generator of a BTM:NG Resource, indicates it expects to be able to reach, or the upper operating limit that a BTM:NG Resource indicates it expects to be able to inject into the grid after serving its Host Load and subject to its Injection Limit, or the maximum amount of demand that a Demand Side Resource expects to be able to reduce, at the request of

the ISO during extraordinary conditions. Each Resource shall specify a  $UOL_E$  in its bids that shall be equal to or greater than its stated Normal Upper Operating Limit.

**Energy (“MWh”):** A quantity of electricity that is bid, produced, purchased, consumed, sold, or transmitted over a period of time, and measured or calculated in megawatt hours. Demand Reductions by Demand Side Resources and Distributed Energy Resources are considered Energy.

**Energy and Ancillary Services Component:** A component of the Operating Requirement, calculated in accordance with Section 26.4.2 of Attachment K to this Services Tariff.

**Energy Duration Limitation:** for a Resource that is not capable of providing Energy for twenty-four hours each day, the number of consecutive hours per day that a Resource elects and is obligated, pursuant to Services Tariff Sections 5.12.1 and 5.12.7, to (i) schedule a Bilateral Transaction; (ii) Bid Energy in the Day-Ahead Market; or (iii) notify the ISO of any outages in the Day-Ahead Market as an Installed Capacity Supplier for the ICAP Equivalent of UCAP sold, as identified in Section 5.12.14 of the ISO Services Tariff.

**Energy Level:** The amount of Energy stored in an Energy Storage Resource or in an Aggregation comprised entirely of Energy Storage Resources.

**Energy Level Management:** The method by which an Energy Storage Resource or Aggregation comprised entirely of Energy Storage Resources controls the amount of Energy stored in the Resource(s). Energy Storage Resources and Aggregations comprised entirely of Energy Storage Resources may choose to be Self-Managed or ISO-Managed in their Bid.

**Energy Limited Resource:** Capacity resources, not including BTM:NG Resources, that, due to environmental restrictions on operations, cyclical requirements, such as the need to recharge or refill, or other non-economic reasons, are unable to operate continuously on a daily basis, but are able to operate for at least four consecutive hours each day. Energy Limited Resources must register their Energy limiting characteristics with, and justify them to, the ISO consistent with ISO Procedures. Resources that meet the qualifications to be an Energy Limited Resource, and choose to participate in the wholesale market as an Energy Limited Resource, are not subject to the rules applicable to Energy Storage Resources.

**Energy Storage Resource (“ESR”):** Generators that receive Energy from the grid at a specified location, and are capable of storing that Energy, for later injection back onto the grid at the same location. Resources that cannot inject Energy onto the grid cannot be Energy Storage Resources. In order to qualify for wholesale market participation, Energy Storage Resources must be able to inject at a rate of at least 0.1 MW for a period of at least one hour, except that Energy Storage Resources operating as part of an Aggregation need only be able to inject at a rate of at least 0.01 MW for a period of at least one hour. Energy Storage Resources are Withdrawal-Eligible Generators.

**Equivalent Demand Forced Outage Rate:** The portion of time a unit is in demand, but is unavailable due to forced outages.

**Equivalency Rating:** A rating determined by the ISO, at a Customer's request, based on the ISO's financial evaluation of an Unrated Customer that shall serve as the starting point of the ISO's determination of an amount of Unsecured Credit to be granted to the Customer, if any, as provided in Table K-1 of Attachment K to this Services Tariff.

**ETA Agent:** As defined in the ISO OATT.

**ETCNL TCC:** As defined in the ISO OATT.

**Excess Amount:** The difference, if any, between the dollar amounts charged to purchasers of Unforced Capacity in an ISO-administered Unforced Capacity auction and the dollar amounts paid to sellers of Unforced Capacity in that ISO-administered Installed Capacity auction.

**Excess Congestion Rents:** As defined in the ISO OATT.

**Existing Transmission Capacity for Native Load ("ETCNL"):** As defined in the ISO OATT.

**Existing Transmission Agreement ("ETA"):** As defined in the ISO OATT.

**Expected EDRP/SCR MW:** The aggregate Load reduction (in MW) expected to be realized from EDRP and/or SCRs during the real-time intervals that the ISO has called upon EDRP and/or SCRs to provide Load reduction in a Scarcity Reserve Region, as determined based on the ISO's calculation of the historical performance of EDRP and SCRs. There will be separate values for voluntary and mandatory Load reductions. When determining the historical performance of SCRs, provision of Load reduction shall be deemed mandatory if the ISO has satisfied the notification requirements set forth in Section 5.12.11.1 of this ISO Services Tariff as it relates to the SCRs in the applicable Load Zone, otherwise provision of such Load reduction shall be deemed voluntary. When determining the historical performance of the EDRP, provision of Load reduction by EDRP shall be deemed voluntary.

**Expected Load Reduction:** For purposes of determining the Real-Time Locational Based Marginal Price, the reduction in Load expected to be realized in real-time from activation of the Emergency Demand Response Program and from Load reductions requested from Special Case Resources, as established pursuant to ISO Procedures.

**Expedited Dispute Resolution Procedures:** The dispute resolution procedures applicable to disputes arising out of the Installed Capacity provisions of this ISO Services Tariff (as set forth in Section 5.17) and the Customer settlements provisions of this ISO Services Tariff (as set forth in Section 7.4.3).

**Export:** A Bilateral Transaction or purchase from the LBMP Market where the Energy is delivered to an NYCA Interconnection with another Control Area.

**Export Credit Requirement:** A component of the External Transaction Component of the Operating Requirement, calculated in accordance with Section 26.4.2 of Attachment K to this Services Tariff.

**External:** An entity (*e.g.*, Supplier, Transmission Customer) or facility (*e.g.*, Generator, Interface) located outside the Control Area being referenced or between two or more Control Areas. Where a specific Control Area is not referenced, the NYCA is the intended reference.

**External-to-ROS Deliverability Rights (“EDRs”):** Rights, as measured in MW, associated with incremental transfer capability (i) on a new or existing Scheduled Line over an External Interface, with a terminus in Rest of State, and (ii) that has CRIS obtained pursuant to Attachment S of the OATT. When combined with qualified Unforced Capacity which is located in an External Control Area either by contract or ownership, and which is deliverable to the NYCA Interface with Rest of State over which it created the incremental transfer capability, EDRs allow such Unforced Capacity to be offered into the ISO-Administered Market.

**External Transaction Component:** A component of the Operating Requirement, calculated in accordance with Section 26.4.2 of Attachment K to this Services Tariff.

**External Transactions:** Purchases, sales or exchanges of Energy, Capacity or Ancillary Services for which either the Point of Injection (“POI”) or Point of Withdrawal (“POW”) or both are located outside the NYCA (*i.e.*, Exports, Imports or Wheels Through).

## 2.13 Definitions - M

**Major Emergency State:** An Emergency accompanied by abnormal frequency, abnormal voltage and/or equipment overloads that create a serious risk that the reliability of the NYS Power System could be adversely affected.

**Marginal Losses:** The NYS Transmission System Real Power Losses associated with each additional MWh of consumption by Load, or each additional MWh transmitted under a Bilateral Transaction as measured at the Points of Withdrawal.

**Marginal Losses Component:** The component of LBMP at a bus that accounts for the Marginal Losses, as measured between that bus and the Reference Bus.

**Market-Clearing Price:** The price determined in an Installed Capacity auction for each ISO-defined Locality, the remainder of the NYCA and each adjacent External Control Area for which all offers to sell and bids to purchase Unforced Capacity are in equilibrium.

**Market Mitigation and Analysis Department:** A department, internal to the ISO, that is responsible for participating in the ISO's administration of its Tariffs. The Market Mitigation and Analysis Department's duties are described in Section 30.3 of the Market Monitoring Plan that is set forth in Attachment O to this Services Tariff.

**Market Monitoring Unit:** "Market Monitoring Unit" shall have the same meaning in this ISO Services Tariff as it has in the Market Monitoring Plan that is set forth in Attachment O to this Services Tariff.

**Market Participant:** An entity, excluding the ISO, that produces, transmits, sells, and/or purchase for resale Unforced Capacity, Energy or Ancillary Services in the Wholesale Market. Market Participants include: Transmission Customers under the ISO OATT, Customers under the ISO Services Tariff, Power Exchanges, Transmission Owners, Primary Holders, LSEs, Suppliers and their designated agents. Market Participants also include entities buying or selling TCCs.

**Market Problem:** An issue which requires notification to Market Participants, the Commission and the Market Monitoring Unit pursuant to Section 3.5.1 of this Services Tariff. It includes market design flaws, software implementation and modeling anomalies or errors, market data anomalies or errors, and economic inefficiencies that have a material effect on the ISO-administered markets or transmission service. The term does not include erroneous Energy or Ancillary Services prices (which are managed through procedures outlined in Attachment E to the Services Tariff) or erroneous customer settlements.

**Market Services:** Services provided by the ISO under the ISO Services Tariff related to the ISO Administered Markets for Energy, Capacity and Ancillary Services.

**MCZ Import Constrained Locality:** A Mitigated Capacity Zone that is also an Import Constrained Locality.

**Member Systems:** The eight Transmission Owners that comprised the membership of the New York Power Pool, which are: (1) Central Hudson Gas & Electric Corporation, (2) Consolidated Edison Company of New York, Inc., (3) New York State Electric & Gas Corporation, (4) Niagara Mohawk Power Corporation d/b/a National Grid, (5) Orange and Rockland Utilities, Inc., (6) Rochester Gas and Electric Corporation, (7) the Power Authority of the State of New York, and (8) Long Island Lighting Company d/b/a Long Island Power Authority.

**Meter Services Entity (“MSE”):** An entity registered with the ISO and authorized to provide metering and meter data services, as applicable, to an Aggregator, Demand Reduction Provider, DSASP Provider, Responsible Interface Party, or Curtailment Service Provider.

**Minimum Generation Bid:** A two-parameter Bid that identifies the minimum operating level a Supplier requires to operate a Generator, and the payment a Supplier requires to operate its Generator at that level, or the minimum quantity of Demand Reduction a Demand Side Resource requires to provide Demand Reduction and the payment the Supplier requires to provide that level of Demand Reduction. If the Supplier is a BTM:NG Resource, LESR, Energy Storage Resource, or an Aggregation, it shall not submit a Minimum Generation Bid.

**Minimum Generation Level:** For purposes of describing the eligibility of ten minute Resources to be committed by the Real Time Dispatch for pricing purposes pursuant to the Services Tariff, Section 4.4.3.3, an upper bound, established by the ISO, on the physical minimum generation limits specified by ten minute Resources. Ten minute Resources with physical minimum generation limits that exceed this upper bound will not be committed by the Real Time Dispatch for pricing purposes. The ISO shall establish a Minimum Generation Level based on its evaluation of the extent to which it is meeting its reliability criteria including Control Performance. The Minimum Generation Level, in megawatts, and the ISO's rationale for that level, shall be made available through the ISO's website or comparable means. If the Supplier is a BTM:NG Resource, LESR, Energy Storage Resource, or Aggregation, it shall not submit a Minimum Generation Level.

**Minimum Payment Nomination:** An offer, submitted by a Responsible Interface Party, in dollars per Megawatt-hour and not to exceed \$500 per Megawatt-hour, to reduce Load equal to the Installed Capacity Equivalent of the amount of Unforced Capacity a Special Case Resource is supplying to the NYCA.

**Mitigated Capacity Zone:** New York City and any Locality added to the definition of “Locality” accepted by the Commission on or after March 31, 2013.

**Modified Wheeling Agreement (“MWA”):** A Transmission Wheeling Agreement between Transmission Owners that was in existence at the time of ISO start-up, as amended and modified as described in Attachment K. Modified Wheeling Agreements are associated with Generators or power supply contracts existing at ISO start-up. All Modified Wheeling Agreements are listed in Attachment L, Table 1A, and are designated in the “Treatment” column of Table 1A, as “MWA”.

**Monthly Auction:** An auction administered by the ISO pursuant to Section 5.13.3 of the ISO Services Tariff.

**Monthly Average Coincident Load (“Monthly ACL”):** Beginning with the Summer 2014 Capability Period, the Load value calculated for each month during a Capability Period applicable to a Special Case Resource with a reported Incremental Average Coincident Load. The Monthly ACL is an average of the SCR’s metered hourly Load that is supplied by the NYS Transmission System and/or the distribution system and reported for the Monthly SCR Load Zone Peak Hours applicable to such SCR. The calculation and verification data reporting requirements are provided in Section 5.12.11.1.5 of this Services Tariff and ISO Procedures. Any Load supported by generation produced from a Local Generator, other behind-the-meter generator, or other supply source located behind the meter operating during the Monthly SCR Zone Load Peak Hours may not be included in the metered Load values reported for the Monthly ACL.

**Monthly Net Benefit Offer Floor/Threshold:** The price, in \$/MWh, determined by the ISO pursuant to Section 4.2.1.9/4.5.7.1 of the ISO Services Tariff and ISO Procedures, below which offers submitted by Demand Reduction Providers shall not be evaluated in the ISO’s Security Constrained Unit Commitment.

**Monthly SCR Load Zone Peak Hours:** Beginning with the Summer 2014 Capability Period, the top forty (40) coincident peak hours for each month within a Capability Period that include hour beginning eleven through hour beginning nineteen as identified by the ISO for each Load Zone; provided, however, that such hours shall not include (i) hours in which Special Case Resources located in the specific Load Zone were called by the ISO to respond to a reliability event or test, (ii) hours for which the Emergency Demand Response Program resources were deployed by the ISO in each specific Load Zone and (iii) in descending rank order of NYCA Load up to a maximum of eight hours per month, a) the hour before the start time of a reliability event or performance test, in which SCRs located in the specific Load Zone were called by the ISO to respond to a reliability event or performance test, or b) the hour immediately following the end time of such reliability event or performance test.

**Mothball Outage:** The outage state in which a Market Participant’s Generator is voluntarily removed from service on or after May 1, 2015, with applicable prior notice, for reasons not related to equipment failure. A Generator in Mothball Outage is subject to the return-to-service provisions in Section 5.18.4 of this Services Tariff and is ineligible to participate in the Installed Capacity market.



## 2.19 Definitions - S

**Safe Operations:** Actions which avoid placing personnel and equipment in peril with regard to the safety of life and equipment damage.

**Scarcity Reserve Demand Curve:** A series of quantity/price points that defines the maximum Shadow Price for Operating Reserves to meet a Scarcity Reserve Requirement for which the pricing rules established in Section 15.4.6.1.1(b) of Rate Schedule 4 of this ISO Services Tariff apply corresponding to each possible quantity of Resources that the ISO's software may schedule to satisfy that requirement. A single Scarcity Reserve Demand Curve will apply to the Real-Time Market for each such Scarcity Reserve Requirement.

**Scarcity Reserve Region:** A Load Zone or group of Load Zones containing EDRP and/or SCRs that have been called by the ISO to address the same reliability need, as such reliability need is determined by the ISO.

**Scarcity Reserve Requirement:** A 30-Minute Reserve requirement established by the ISO for a Scarcity Reserve Region in accordance with Rate Schedule 4 of this ISO Services Tariff.

**Scheduled Energy Injections:** As defined in the ISO OATT.

**Scheduled Energy Withdrawals:** As defined in the ISO OATT.

**Scheduled Line:** A transmission facility or set of transmission facilities: (a) that provide a distinct scheduling path interconnecting the ISO with an adjacent control area, (b) over which Customers are permitted to schedule External Transactions, (c) for which the ISO separately posts TTC and ATC, and (d) for which there is the capability to maintain the Scheduled Line actual interchange at the DNI, or within the tolerances dictated by Good Utility Practice. Each Scheduled Line is associated with a distinct Proxy Generator Bus. Transmission facilities shall only become Scheduled Lines after the Commission accepts for filing revisions to the NYISO's tariffs that identify a specific set or group of transmission facilities as a Scheduled Line. The transmission facilities that are Scheduled Lines are identified in Section 4.4.4 of the Services Tariff.

**SCR Aggregation:** One or more Special Case Resources registered by the Responsible Interface Party at a single PTID, with the Load of each Special Case Resource electrically located within the same single Load Zone and the total of all Loads at the PTID greater than or equal to 0.1 MW.

**SCR Change of Load:** A decrease in the Load of the SCR that meets the criteria of a Qualified Change of Load Condition and the SCR Load Change Reporting Threshold in accordance with this Services Tariff and results in a total Load reduction, within the range of hours that corresponds with the Capability Period SCR Load Zone Peak Hours, and the total Load reduction persists for more than seven (7) and less than or equal to sixty (60) continuous days from the first date of the reduction of the Load.

**SCR Change of Status:** The decrease to be treated as an adjustment to the applicable Average Coincident Load of a Special Case Resource when the SCR meets the criteria of a Qualified Change of Status Condition and the SCR Load Change Reporting Threshold in accordance with this Services Tariff and results in a total Load reduction, within the range of hours that corresponds with the Capability Period SCR Load Zone Peak Hours, and the total Load reduction persists for more than sixty (60) continuous days from the first date of the reduction of the Load.

**SCR Load Change Reporting Threshold:** For a Special Case Resource with an applicable ACL greater than or equal to 500 kW, a reduction or increase in total Load not attributable to fluctuations in Load due to weather as described in ISO Procedures, that is equal to or greater than (i) thirty (30) percent of the applicable ACL for any month within the Capability Period, or (ii) five (5) MW in the NYC Locality or ten(10) MW if in any other Load Zone; whichever is less. For SCRs that elect to enroll with an Incremental ACL and do not increase the eligible Installed Capacity associated with the SCR, the RIP may enroll the SCR with a lower percentage change to its total Load increase as specified in Section 5.12.11.1.5 of this Services Tariff.

**SCUC:** Security Constrained Unit Commitment, described in Section 4.2.4 of this ISO Services Tariff.

**Secondary Holder:** As defined in the ISO OATT.

**Second Settlement:** The process of: (1) identifying differences between Energy production, Energy consumption or NYS Transmission System usage scheduled in a First Settlement and actual production, consumption, or usage during the Dispatch Day; and (2) assigning financial responsibility for those differences to the appropriate Customers and Market Participants. Charges for Energy supplied (to replace generation deficiencies or unscheduled consumption), and payments for Energy consumed (to absorb consumption deficiencies or excess Energy supply) or changes in transmission usage will be based on the Real-Time LBMPs.

**Secondary Market:** As defined in the ISO OATT.

**Security Coordinator:** An entity that provides the security assessment and Emergency operations coordination for a group of Control Areas. A Security Coordinator must not participate in the wholesale or retail merchant functions.

**Self-Committed Fixed:** A bidding mode in which a Generator or Aggregation is self-committed and opts not to be Dispatchable over any portion of its operating range.

**Self-Committed Flexible:** A bidding mode in which a Dispatchable Generator or Aggregation follows Base Point Signals within a portion of its operating range, but self-commits.

**Self-Managed Energy Level:** A Bid parameter which when selected indicates that an Energy Storage Resource's, or Aggregation comprised entirely of Energy Storage Resources, Energy Level constraints will not be directly accounted for in the optimization. *See* Sections 4.2.1.3.4 and 4.4.2.1 of this Services Tariff.

**Self-Supply:** The provision of certain Ancillary Services, or the provision of Energy to replace Marginal Losses by a Transmission Customer using either the Transmission Customer's own Generators or generation obtained from an entity other than the ISO.

**Service Agreement:** The agreement, in the form of Attachment A to the Tariff, and any amendments or supplements thereto entered into by a Customer and the ISO of service under the Tariff, or any unexecuted Service Agreement, amendments or supplements thereto, that the ISO unilaterally files with the Commission.

**Service Commencement Date:** The date that the ISO begins to provide service pursuant to the terms of a Service Agreement, or in accordance with the Tariff.

**Settlement:** The process of determining the charges to be paid to, or by, a Customer to satisfy its obligations.

**Shadow Price:** The marginal value of relieving a particular Constraint which is determined by the reduction in system cost that results from an incremental relaxation of that Constraint.

**Shift Factor ("SF"):** A ratio, calculated by the ISO, that compares the change in power flow through a transmission facility resulting from the incremental injection and withdrawal of power on the NYS Transmission System.

**Shutdown Period:** An ISO approved period of time immediately following a shutdown order, such as a zero base point, that has been designated by the Customer, during which unstable operation prevents the unit from accurately following its base points. The Shut-Down Period shall be set to zero for a BTM:NG Resource, an Energy Storage Resource, and an Aggregation.

**Sink Price Cap Bid:** A monotonically increasing Bid curve provided by an entity engaged in an Export, other than an entity submitting a CTS Interface Bid, to indicate the relevant Proxy Generator Bus LBMP at or below which that entity is willing to either purchase Energy in the LBMP Markets or, in the case of Bilateral Transactions, to accept Transmission Service, where the MW amounts on the Bid curve represent the desired increments of Energy that the entity is willing to purchase at various price points.

**Southeastern New York ("SENY"):** An electrical area comprised of Load Zones G, H, I, J, and K, as identified in the ISO Procedures.

**Special Case Resource ("SCR"):** Demand Side Resources whose Load is capable of being interrupted upon demand at the direction of the ISO, and/or Demand Side Resources that have a Local Generator, which is not visible to the ISO's Market Information System and is rated 100 kW or higher, that can be operated to reduce Load from the NYS Transmission System or the distribution system at the direction of the ISO. Special Case Resources are subject to special rules, set forth in Section 5.12.11.1 of this ISO Services Tariff and related ISO Procedures, in order to facilitate their participation in the Installed Capacity market as Installed Capacity Suppliers.

**Special Case Resource Capacity:** The Installed Capacity Equivalent of the Unforced Capacity which has been sold by a Special Case Resource in the Installed Capacity market during the current Capability Period.

**Start-Up Period:** An ISO approved period of time immediately following synchronization to the Bulk power system, which has been designated by a Customer and bid into the Real-Time Market, during which unstable operation prevents the unit from accurately following its base points. The Start-Up Period shall be set to zero for a BTM:NG Resource and Energy Storage Resource and an Aggregation.

**Station Power:** Station Power shall mean the Energy used by a Generator:

1. for operating electric equipment located on the Generator site, or portions thereof, owned by the same entity that owns the Generator, which electrical equipment is used by the Generator exclusively for the production of Energy and any useful thermal energy associated with the production of Energy; and
2. for the incidental heating, lighting, air conditioning and office equipment needs of buildings, or portions thereof, that are: owned by the same entity that owns the Generator; located on the Generator site; and
3. used by the Generator exclusively in connection with the production of Energy and any useful thermal energy associated with the production of Energy.

Station Power does not include any Energy: (i) used to power synchronous condensers; (ii) used for pumping at a pumped storage facility or for charging Limited Energy Storage Resources and Energy Storage Resources when that Energy is stored for later injection back to the grid; (iii) provided during a Black Start restoration by Generators that provide Black Start Capability Service; or (iv) used by a Resource in an Aggregation.

**Start-Up Bid:** A Bid parameter that may vary hourly and that identifies the payment a Supplier requires to bring a Generator up to its specified minimum operating level from an offline state. If the Supplier is a BTM:NG Resource, Energy Storage Resource or an Aggregation, it shall not submit a Start-Up Bid.

Start-Up Bids submitted for a Generator that is not able to complete its specified minimum run time (of up to a maximum of 24 hours) within the Dispatch Day are expected to include expected net costs related to the hour(s) that a Generator needs to run on the day following the Dispatch Day in order to complete its minimum run time. The component of the Start-Up Bid that incorporates costs that the Generator expects to incur on the day following the Dispatch Day is expected to reflect the operating costs that the Supplier does not expect to be able to recover through LBMP revenues while operating to meet the Generator's minimum run time, at the minimum operating level Bid for that Generator for the hour of the Dispatch Day in which the Generator is scheduled to start-up. Settlement rules addressing Start-Up Bids that incorporates costs related to the hours that a Generator needs to run on the day following the Dispatch Day on which the Generator is committed are set forth in Attachment C to this ISO Services Tariff.

**Storm Watch:** Actual or anticipated severe weather conditions under which region-specific portions of the NYS Transmission System are operated in a more conservative manner by reducing transmission transfer limits.

**Strandable Costs:** Prudent and verifiable expenditures and commitments made pursuant to a Transmission Owner's legal obligations that are currently recovered in the Transmission Owner's retail or wholesale rate that could become unrecoverable as a result of a restructuring of the electric utility industry and/or electricity market, or as a result of retail-turned-wholesale customers, or customers switching generation or Transmission Service suppliers.

**Stranded Investment Recovery Charge:** A charge established by a Transmission Owner to recover Strandable Costs.

**Study Month:** The calendar month for which the ISO calculates the Monthly Net Benefit Offer Floor, in accordance with Section 4.2.1.9 of the ISO Services Tariff and ISO Procedures.

**Subzone:** That portion of a Load Zone in a Transmission Owner's Transmission District.

**Supplemental Event Interval:** Any RTD interval in which there is a maximum generation pickup or a large event reserve pickup or which is one of the three RTD intervals following the termination of the maximum generation pickup or the large event reserve pickup.

**Supplemental Resource Evaluation ("SRE"):** A determination of (i) the least cost selection of additional Generators or Aggregations, which are to be committed to meet changed or local system conditions for the Dispatch Day that may cause the Day-Ahead schedules for the Dispatch Day to be inadequate to meet the reliability requirements of the Transmission Owner's local system or to meet Load or reliability requirements of the ISO; or (ii) the least cost selection of additional Generators, which are to be committed to meet forecast Load and reserve requirements over the six-day period that follows the Dispatch Day. An Aggregation or ESR is expected to be available in real-time and capable of injecting Energy at its full capability for all of the SRE commitment hours it receives.

**Supplier:** A Party that is supplying the Capacity, Demand Reduction, Energy and/or associated Ancillary Services to be made available under the ISO OATT or the ISO Services Tariff, including Generators, BTM:NG Resources, Energy Storage Resources, Demand Side Resources, and Aggregations that satisfy all applicable ISO requirements.

**System Resource:** A portfolio of Unforced Capacity provided by Resources located in a single ISO-defined Locality, the remainder of the NYCA, or any single External Control Area, that is owned by or under the control of a single entity, which is not the operator of the Control Area where such Resources are located, and that is made available, in whole or in part, to the ISO.

## 2.23 Definitions - W

**West of Central-East (“West” or “Western”):** An electrical area comprised of Load Zones A, B, C, D, and E, as identified in the ISO Procedures.

**Wheels Through:** Transmission Service, originating in another Control Area, that is wheeled through the NYCA to another Control Area.

**Wheels Through Credit Requirement:** A component of the External Transaction Component of the Operating Requirement, calculated in accordance with Section 26.4.2 of Attachment K to this Services Tariff.

**Wholesale Market:** The sum of purchases and sales of Energy and Capacity for resale along with Ancillary Services needed to maintain reliability and power quality at the transmission level coordinated together through the ISO and Power Exchanges. A party who purchases Energy, Capacity or Ancillary Services in the Wholesale Market to serve its own Load is considered to be a participant in the Wholesale Market.

**Wholesale Transmission Services Charges (“WTSC”):** Those charges calculated pursuant to Attachment H of the OATT, incurred or declared overdue by a Transmission Owner pursuant to Section 26.4.2 of Attachment K, after the effective date of these revisions; provided, however, that these provisions will not apply to pre-petition bankruptcy debts for a company that is currently in bankruptcy.

**Wind and Solar Energy Forecast:** The ISO’s forecast of Energy that is expected to be supplied over a specified interval of time by an Intermittent Power Resource that depends on wind or solar energy as its fuel and which is used in ISO’s Energy market commitment and dispatch. The Wind Energy Forecast does not include a forecast of Energy for Intermittent Power Resources depending on wind as its fuel that participate in a DER Aggregation.

**Wind and Solar Output Limit:** A Base Point Signal calculated for an Intermittent Power Resource depending on wind or solar energy as its fuel and which, when sent to the Intermittent Power Resource, shall include a separate flag directing the Intermittent Power Resource not to exceed its Base Point Signal. Intermittent Power Resources that depend on wind or solar energy as their fuel shall be eligible to receive a Wind and Solar Output Limit, except for those that depend on wind for their fuel and were in commercial operation as of January 1, 2002 with name plate capacity of 12 MWs or fewer, and Resources depending on wind or solar energy as their fuel that participate in a DER Aggregation.

**Withdrawal-Eligible Generator:** A Generator that is eligible to withdraw energy from the grid at a price for the purposes of recharging or refilling for later injection back into the grid.

**WTSC Component:** A component of the Operating Requirement, calculated in accordance with Section 26.4.2, of Attachment K to this Services Tariff.

## **4.1 Market Services - General Rules**

### **4.1.1 Overview**

Market Services include all services and functions performed by the ISO under this Tariff related to the sale and purchase of Energy, Capacity or Demand Reductions, and the payment to Suppliers who provide Ancillary Services in the ISO Administered Markets.

### **4.1.2 Independent System Operator Authority**

The ISO shall provide all Market Services in accordance with the terms of the ISO Services Tariff and the ISO Related Agreements. The ISO shall be the sole point of Application for all Market Services provided in the NYCA. Each Market Participant that sells or purchases Energy, including Demand Side Resources, Special Case Resources and Emergency Demand Response Program participants, sells or purchases Capacity, or provides Ancillary Services in the ISO Administered Markets utilizes Market Services and must take service as a Customer under this Tariff and enter into a Service Agreement under the Tariff, as set forth in Attachment A; each entity that withdraws Energy to supply Load within the NYCA or provides Installed Capacity to an LSE serving Load within the NYCA utilizes the Control Area Services provided by the ISO and benefits from the reliability achieved as a result of ISO Control Area Services, must take service as a Customer under this Tariff and enter into a Service Agreement under this Tariff, as set forth in Attachment A; and each entity that has its virtual bids accepted and thereby engages in Virtual Transactions and each entity that purchases Transmission Congestion Contracts, excluding Transmission Congestion Contracts that are created prior to January 1, 2010, utilizes Market Services and must take service as a Customer under this Tariff and enter into a Services Agreement under this Tariff, as set forth in Attachment A. Each Customer that utilizes Market Services also utilizes Transmission Service and shall obtain Transmission

Service under the ISO OATT.

#### **4.1.3 Informational and Reporting Requirements**

4.1.3.1 The ISO shall operate and maintain an OASIS, including a Bid/Post System that will facilitate the posting of Bids to supply Energy and Ancillary Services and Demand Reductions by Suppliers for use by the ISO and the posting of Locational Based Marginal Prices (“LBMP”) and schedules for accepted Bids for Energy and Ancillary Services and Demand Reductions. The Bid/Post System will be used to post schedules for Bilateral Transactions. The ISO will provide historical data regarding Energy and Capacity market clearing prices in addition to Congestion Costs on a publicly accessible portion of its OASIS.

4.1.3.2 Zonal Uplift Report. The ISO shall post on a publicly accessible portion of its website, in machine-readable format, a report on total daily uplift dollars paid to (a) Generators and Demand Side Resources located in Load Zones H, I and J collectively, (b) Generators and Demand Side Resources located in each of the other NYCA Load Zones, and (c) Suppliers scheduling Imports at a Proxy Generator Bus, no more than 20 calendar days after the conclusion of each month. The report shall be updated at the time the Resource-Specific Uplift Report is posted, and again approximately 120 days after an initial invoice was issued for a month, to incorporate updated information. The report shall provide the uplift paid for each month, by day and by billing category.

Costs that the ISO will report as uplift include: (1) Day-Ahead and real-time Bid Production Cost guarantee payments to Generators and to Demand Side Resource aggregations; (2) Day-Ahead Bid Production Cost guarantee payments



to Suppliers that schedule Imports; (3) Day-Ahead Margin Assurance Payments; (4) cost recovery for units responding to Local Reliability Rules addressing loss of Generator gas supply; (5) Import Curtailment Guarantee Payments to Suppliers that schedule Imports in real-time; and (6) Lost Opportunity Cost payments to Suppliers of Voltage Support Service.

4.1.3.3           Resource-Specific Uplift Report. The ISO shall post on a publicly accessible portion of its website, in machine-readable format, a report on total uplift paid to Generators, Aggregations, Demand Side Ancillary Service Program Resources, Day-Ahead Demand Response Program resources or aggregations, and to Special Case Resource aggregations, on a monthly basis. The report shall provide the total uplift payment across all uplift categories paid to each Generator Aggregation, or Special Case Resource or aggregations of Demand Side Resources. The report shall be posted no more than 90 calendar days after the conclusion of each month and shall be updated approximately 120 days after an initial invoice was issued for the month, to incorporate updated information.

4.1.3.4           Operator-Initiated Commitment Report. The ISO shall post on a publicly accessible portion of its website, in machine-readable format, commitments made after the Day-Ahead Market for a reason other than minimizing the total production cost of serving load.

For each reported commitment, the ISO shall provide the following information:

- (a)     commitment size: provide both the resource's UOL<sub>N</sub> and the quantity of MW committed;
- (b)     location: the Load Zone in which the resource is located;

- (c) commitment reason: (i) system-wide capacity need, or (ii) constraint management, or (iii) voltage support; and
- (d) commitment start time.

Operator-initiated commitments are ordinarily posted in real-time as they occur. All operator-initiated commitments for a calendar month will be available no more than 30 days after the conclusion of that month. Operator-initiated commitment postings may later be updated to improve accuracy.

#### **4.1.4 Scheduling Prerequisites**

Pursuant to ISO Procedures, each Transaction offered in the Energy, Installed Capacity, Ancillary Services or Transmission Congestion Contract market shall be subject to a minimum size of one (1) megawatt (“MW”); provided however, the minimum size of each Transaction offered in the Energy, Installed Capacity or Ancillary Services market on behalf of Energy Storage Resources and Aggregations shall be one tenth (0.1) of one MW. Regulation Service may be offered in tenths of a MW. Pursuant to ISO Procedures, Special Case Resources may offer a minimum of 100 kW of Unforced Capacity in the Installed Capacity Market.

Transactions that exceed one (1) megawatt may be scheduled in tenths of a megawatt provided, however, that Bilateral Transactions and External Transactions in the LBMP Market must always be bid and scheduled in increments of one (1) megawatt.

#### **4.1.5 Communication Requirements for Market Services**

Customers and Transmission Customers shall utilize Internet service providers to access the ISO’s OASIS and bid/post system. Customers shall arrange for and maintain all communications facilities for the purpose of communication of commercial data to the ISO.

Each Customer shall be the customer of record for the telecommunications facilities and services

its uses and shall assume all duties and responsibilities associated with the procurement, installation and maintenance of the subject equipment and software.

#### **4.1.6 Customer Responsibilities**

All purchasers in the Day-Ahead or Real-Time Markets who withdraw Energy within the NYCA to serve Load or at an NYCA Interconnection with another Control Area must obtain Transmission Service under the ISO OATT. All Customers requesting service under the ISO Services Tariff to engage in Virtual Transactions must obtain Transmission Service under the ISO OATT.

All LSEs serving Load in the NYCA must comply with the Installed Capacity requirements set forth in Article 5 of this ISO Services Tariff.

All Customers taking service under the ISO Services Tariff must pay the Market Administration and Control Area Services Charge, as specified in Rate Schedule 1 of this ISO Services Tariff.

A Supplier with a Generator or Demand Side Resource/Aggregation with a real time physical operating problem that makes it impossible for the Generator or Demand Side Resource (a) to operate in the bidding mode in which it was scheduled, or (b) to provide all of the Energy or Ancillary Services offered in its Bids, or (c) to achieve or comply with applicable operating parameters or other requirements, shall notify the ISO.

#### **4.1.7 Customer Compliance with Laws, Regulations and Orders**

All Customers shall comply with all applicable federal, state and local laws, regulations and orders, including orders from the ISO.

4.1.7.1 Violations of FERC's orders, rules and regulations also violate this

Section 4.1.7 of the ISO Services Tariff. In particular, if FERC or a court of

competent jurisdiction determines there has been a violation of FERC's regulations related to electric energy market manipulation (see 18 C.F.R. Section 1c.2, or any successor provision thereto), such violation is also a violation of this ISO Services Tariff if such violation affects or is related to the ISO Administered Markets.

4.1.7.2 If the ISO becomes aware that a Customer may be engaging in, or might have engaged in, electric energy market manipulation, it shall promptly inform its Market Monitoring Unit.

4.1.7.3 This Section 4.1.7 of the ISO Services Tariff does not independently empower the ISO or its Market Monitoring Unit to impose penalties for, or to provide a remedy for, violations of FERC's prohibition against electric energy market manipulation, or for other violations of the ISO's Tariffs.

#### **4.1.8 Commitment for Reliability**

Suppliers with generating units committed by the ISO for service to ensure NYCA reliability or local system reliability, that are eligible to submit start-up and minimum generation Bids, will recover startup and minimum generation costs that were not bid, that were not known before the close of the Real-Time Scheduling Window, and that were not recovered in the Dispatch Day, provided however, eligibility to recover such additional costs shall not be available for megawatts scheduled Day-Ahead. Payment for such costs shall be determined, as if bid, pursuant to the provisions of Attachment C of this Tariff. Energy Storage Resources, Aggregations that include Withdrawal-Eligible Generator(s), and Behind-the-Meter Net Generation Resources dispatched by the ISO for service to ensure NYCA reliability or local system reliability will recover incremental energy costs that were not bid, that were not known

before the close of the Real-Time Scheduling Window, and that were not recovered in the Dispatch Day, provided however, eligibility to recover such additional costs shall not be available for megawatts scheduled Day-Ahead. Payments for securing NYCA reliability and local system reliability shall be recovered by the ISO in accordance with Rate Schedule 1 of the ISO OATT.

External Installed Capacity Suppliers that respond to an SRE request are eligible to recover the ISO-verified costs they incur to respond to the SRE request to the extent such costs exceed the ISO-verified market revenues the External Installed Capacity Supplier receives. It is the obligation of the External Installed Capacity Supplier to demonstrate its costs and revenues to the ISO's satisfaction. In verifying the costs of External Installed Capacity Suppliers that respond to an SRE, the ISO will consider the incremental net costs the Market Party incurred to respond to the SRE. Recoverable costs could include, but are not limited to, incremental costs of generating to supply Energy using the requested Installed Capacity, and the incremental costs incurred by the Market Party to transmit Energy from the External Installed Capacity Supplier's resource to the NYCA, including the opportunity cost associated with lost expected revenue. However, losses resulting from the difference in External Transaction settlement prices between an External Control Area and the NYCA will only be recoverable if and to the extent the following conditions are satisfied: (a) the losses are demonstrated to be reasonably related to responding to the SRE request; and (b)(i) a counterflow Export from the NYCA offered by the Market Party at the External Interface where the Capacity delivery obligation applies is not scheduled due to NYCA reliability concerns or is curtailed to address NYCA reliability concerns, or (ii) no opportunity exists to schedule a counterflow Export from the NYCA at the External Interface where the Capacity delivery obligation applies. Payments for securing NYCA

reliability and local system reliability shall be recovered by the ISO as *DisputeResolutionCosts* in accordance with Section 6.1.13 of Rate Schedule 1 of the ISO OATT.

Re-dispatching costs incurred as a result of reductions in Transfer Capability caused by Storm Watch (“Storm Watch Costs”) shall be aggregated and recovered on a monthly basis by the ISO exclusively from Transmission Customers in Load Zone J. The ISO shall calculate Storm Watch Costs by multiplying the real-time Shadow Price of any binding constraint associated with a Storm Watch, by the higher of (a) zero; or (b) the scheduled Day-Ahead flow across the constraint minus the actual real-time flow across the constraint.

#### **4.1.9 Cost Recovery for Units Responding to Local Reliability Rules Addressing Loss of Generator Gas Supply**

##### **4.1.9.1 Eligibility for Cost Recovery**

Generating units designated pursuant to the New York State Reliability Council’s Local Reliability Rule addressing the Loss of Generator Gas Supply for Generators located in New York City or the Local Reliability Rule addressing the Loss of Generator Gas Supply for Generators located on Long Island, as being required either to burn an alternate fuel at designated minimum levels, or to activate their auto-swap capability, based on forecast Load levels in Load Zones J and K (for purposes of this Section 4.1.9, “Eligible Units”), shall be eligible to recover costs associated with burning the required alternate fuel when one of the specified Local Reliability Rules is invoked. For purposes of this Section 4.1.9, the periods of time in which the Eligible Unit burns the alternate fuel only because one of the Local Reliability Rules addressing the loss of gas supply for Generators located in New York City or on Long Island has been invoked, including that period of time required for an Eligible Unit to move into and out of compliance with a Local Reliability Rule addressing the Loss of Generator Gas Supply, shall be referred to as the “Eligibility Period.”

#### **4.1.9.1.1 Obligation to Test Automatic Fuel Swap Capability and Eligibility to Recover Costs of Performing Fuel Swap Tests**

Combined cycle Generating units designated pursuant to the New York State Reliability Council's Local Reliability Rules addressing the Loss of Generator Gas Supply for Generators located in New York City, which have the ability to automatically swap from natural gas to a liquid fuel source in the event of the sudden interruption of gas fuel supply or loss of gas pressure or the unavailability of gas supply to the Generator, shall:

- (a) develop test procedures that are consistent with the requirements of the applicable Local Reliability Rule and ISO Procedures; and
- (b) successfully test to demonstrate that the designated combined cycle units are able to automatically swap from natural gas to a liquid fuel source each Capability Period.

The requirement to perform a test each Capability Period can be met by performing a real-time automatic fuel swap, if that fuel swap was successful and occurred during the relevant Capability Period. The scheduling of a test to demonstrate that a designated combined cycle unit is able to automatically swap from natural gas to a liquid fuel source in real-time operations shall be coordinated with the ISO and with the Transmission Owner in whose subzone the Generator is located, consistent with ISO Procedures.

The period during which combined cycle Eligible Units are performing scheduled automatic fuel swap testing, including that period of time required for an Eligible Unit to move into and out of compliance with a Local Reliability Rule addressing the Loss of Generator Gas Supply, is an "Eligibility Period."

#### **4.1.9.2 Variable Operating Cost Recovery**

For Eligibility Periods, Eligible Units burning an alternate fuel that would not have been

burned but for Local Reliability Rules addressing the loss of gas supply for Generators located in New York City or on Long Island being invoked and Eligible Units burning an alternate fuel because they activated their auto-swap capability and experienced a swap to the alternate fuel that would not have occurred but for the operation of the auto-swap capability in accordance with the implementation of the Local Reliability Rules addressing the loss of gas supply for Generators located in New York City or on Long Island shall recover costs that vary with the amount of alternate fuel burned (“variable operating costs”) if: (i) such costs are not reflected in the reference level for that Eligible Unit for the hours included in the Eligibility Period, pursuant to ISO Procedures, and (ii) the hour is one for which the commodity cost of the alternate fuel including taxes and emission allowance costs is greater than the commodity cost for natural gas, including taxes and emission allowance costs, as determined by the ISO. These relative commodity cost determinations shall use the same indices used by the ISO to establish daily Reference Levels. Variable operating costs shall include the commodity cost, associated taxes and emission allowance costs, of the required alternate fuel burned during an Eligibility Period pursuant to Local Reliability Rules addressing the loss of gas supply for Generators located in New York City or on Long Island. The owner or bidder of an Eligible Unit shall notify the ISO when variable operating costs change due to a change in tax rates.

#### **4.1.9.3 Additional Cost Recovery**

An Eligible Unit that seeks to recover costs incurred in connection with its compliance with Local Reliability Rules addressing the loss of gas supply for Generators located in New York City or on Long Island, in addition to the commodity cost, associated taxes and emission allowance cost recovery specified in Section 4.1.9.2, shall negotiate an Implementation Agreement with the ISO. The Eligible Unit and the ISO shall consult with and consider the input



of the New York State Public Service Commission, and the Transmission Owner designated by the applicable Local Reliability Rule addressing the loss of gas supply for Generators located in New York City or on Long Island. Such Implementation Agreements shall specify, among other terms and conditions, the facilities (or portions of facilities) used to meet obligations under the Local Reliability Rule addressing the loss of gas supply for Generators located in New York City or on Long Island. The Implementation Agreement shall indicate the rate to be charged during the period of the Implementation Agreement to recover such additional costs.

The Implementation Agreement may also include costs in addition to commodity cost, associated taxes and emission allowance costs of the alternate fuel incurred in connection with compliance with Local Reliability Rules addressing the loss of gas supply for Generators located in New York City or on Long Island that vary with the amount of alternate fuel burned because a Local Reliability Rule addressing the loss of gas supply was invoked. These variable costs shall be paid pursuant to Section 4.1.9.2 as variable operating costs so as to not duplicate payments.

Each such Implementation Agreement shall have a duration of one or more Capability Periods and shall commence at the beginning of a Capability Period unless another date is approved by the Commission. If the Eligible Unit and the ISO reach agreement on the terms and conditions of the Implementation Agreement, the ISO shall file it with the Commission for its review and acceptance.

In the event that the Eligible Unit and the ISO have not come to an agreement six months prior to the beginning of the Capability Period that the Implementation Agreement is intended to govern, then either one of them may request the assistance of the Commission's Dispute Resolution Service. If the Dispute Resolution Service agrees to provide its assistance the Eligible Unit and the ISO shall participate in whatever dispute resolution process the Dispute

Resolution Service may recommend. The Commission's Dispute Resolution Service may include other stakeholders to the extent confidentiality protections are in place. If, however, there is no agreement four months prior to the beginning of the relevant Capability Period then the Eligible Unit and the ISO may each file an unexecuted Implementation Agreement for the Commission's review and acceptance.

In the event that any provisions of this Section 4.1.9 are modified prior to the termination date of any Commission-accepted Implementation Agreement, such Implementation Agreement will remain in full force and effect until it expires in accordance with its contractual terms and conditions.

Rules for establishing Eligibility Periods shall be specified in ISO Procedures.

#### **4.1.9.4 Billing**

Payments made by the ISO to the Eligible Unit to pay variable operating costs and to pay the rate established by the Implementation Agreement pursuant to this Section 4.1.9 shall be in addition to any LBMP, Ancillary Service or other revenues received as a result of the Eligible Unit's Day-Ahead or Real-Time dispatch for that day. Payment by the ISO of variable operating costs pursuant to Section 4.1.9.2 shall be based on the Eligibility Period, quantity of alternate fuel burned, and relative costs of alternate fuel compared to natural gas. Payment by the ISO of the rate established in the Implementation Agreement for costs incurred other than variable operating costs shall be made as part of the ISO billing cycle regardless of which Local Reliability Rule addressing the loss of gas supply an alternate fuel is burned pursuant to, and regardless of the relative cost of the alternate fuel compared to natural gas reflected in reference levels.

#### **4.1.9.5 Other Provisions**

The ISO shall make available for the Transmission Owner in whose subzone the Generator is located: (i) the identity of Generators determined by the ISO to be eligible to recover the costs associated with burning the required alternate fuel pursuant to the provisions of this Section 4.1.9; (ii) the start and stop hours for each claimed Eligibility Period and (iii) the amount of alternate fuel for which the Generator has sought to recover variable operating costs.

#### **4.1.10 Supplier Aggregations**

Suppliers may aggregate individual Resources electrically located in the NYCA to provide Energy, Capacity and Ancillary Services. Demand Side Resources participating in the Emergency Demand Response Program and Aggregations of Special Case Resources shall follow the rules set forth in Services Tariff Sections 22 (Att. G) and 5.12.11, respectively. Each Aggregation shall be offered as a single unit and all bidding and offer obligations under the ISO Tariffs apply to the Aggregation, or to the Aggregator, where appropriate, not to the individual Resources that comprise the Aggregation. An Aggregation that offers a combination of Energy injections, Energy withdrawals and/or Demand Reduction must be able to offer at least 100 kW of each.

Each Aggregation must meet the minimum eligibility and performance requirements to participate in the ISO Administered Markets. Unless otherwise noted, Resources within an Aggregation are not individually required to meet the minimum eligibility and performance requirements to participate in the ISO Administered Markets. Generators with PURPA contracts, Limited Control Run of River Resources, Behind-the-Meter Net Generation Resources, Municipally-owned Generation, System Resources and Control Area System Resources are ineligible to participate in an Aggregation. One Aggregation cannot participate in

another Aggregation, however, the individual Resources within an Aggregation may switch to a new Aggregation in accordance with Services Tariff Section 4.1.10.3.

A distribution utility shall have the opportunity to review the reliability and safety impacts of each Distributed Energy Resource or group of Distributed Energy Resources that are connected to the distribution utility's electric facilities. Such review shall take place prior to each Distributed Energy Resource's enrollment in the ISO Administered Markets, and whenever there is a material modification to a Distributed Energy Resource that changes its physical or operational characteristics that were previously evaluated by the applicable distribution utility. The ISO shall collect applicable physical and operational information for each Distributed Energy Resource and provide that information to the applicable distribution utility. An Aggregator is required to provide the physical and operational characteristics identified in the Aggregation System User Guide for each Distributed Energy Resource.

The ISO may fully or partially derate an individual Resource and/or an Aggregation if the ISO or applicable distribution utility determines that a Distributed Energy Resource or group of Distributed Energy Resources presents significant risk(s) to the safe and reliable operation of the Transmission System or distribution system. The Distributed Energy Resource or group of Distributed Energy Resources will not be permitted to resume operation until the ISO, distribution utility, and Aggregator are able to resolve the identified concerns. If an individual Resource and/or group of Resources is derated, the ISO shall notify the applicable Aggregator as soon as practicable of the derate and reason for derate. Additional detail related to notification and timing of derates is included in the ISO's Aggregation Manual.

An Aggregator may remove an individual Resource and/or Aggregation from the ISO Administered Markets upon thirty (30) days' notice to the ISO, and such removal will become

effective at the beginning of a calendar month.

#### **4.1.10.1 Aggregation Composition**

Aggregations must contain at least two Resources, except that a single Demand Side Resource may participate as a single-Resource Aggregation.

The minimum capability of each individual Resource participating in an Aggregation shall be 10 kW. For the purposes of this Services Tariff Section 4.1.10.1, (i) the capability of a Demand Side Resource is the Resource's enrolled one-hour Demand Reduction capability, and (ii) the capability of a Generator is its nameplate rating.

The maximum physical injection capability for a Resource participating in an Aggregation is 20 MW. Resources with a nameplate capability greater than 20 MW may participate in an Aggregation if the ISO determines sufficient physical protection and control schemes exist to limit the injection capability of the Resource to 20 MW or less. There is no maximum Demand Reduction capability for Demand Side Resources participating in an Aggregation.

Aggregations may be comprised of a single Resource type or multiple Resource types. Except as otherwise provided in the ISO Tariffs and the ISO Procedures, Aggregations that are comprised of a single Resource type shall follow the rules associated with that Resource type (*e.g.*, an Aggregation of Energy Storage Resources shall follow the rules applicable to Energy Storage Resources). Aggregated (i) Intermittent Power Resources, (ii) Energy Limited Resources, (iii) Capacity Limited Resources, or (iv) Limited Energy Storage Resources shall constitute a single Resource type Aggregation only when the individual Resources in the Aggregation have the same Intermittent, energy limiting, or capacity limiting characteristic (*e.g.*, an Aggregation of only solar Resources, or an Aggregation of only pumped storage Resources).

Provided, however, that Aggregations with multiple, different types of Intermittent Power Resources, Energy Limited Resources, Capacity Limited Resources, and Limited Energy Storage Resources shall follow the rules associated with DER Aggregations.

Aggregations that are comprised of more than one Resource type, and Aggregations comprised of only Demand Side Resources shall follow the rules associated with DER Aggregations.

Aggregations that include at least one Withdrawal-Eligible Generator may submit Bids to withdraw Energy. For the purpose of measuring Aggregation compliance with Base Point Signals, Aggregations that include at least one Withdrawal-Eligible Generator will be measured based on their net performance; that is, Energy injections and Demand Reductions will be reduced by Energy withdrawals. When an Aggregation contains one or more Energy Storage Resources, and the applicable Load Serving Entity requires the Energy Storage Resource to also pay a retail rate for its charging withdrawals, all Energy Storage Resources in the Aggregation shall be customers of the same Load Serving Entity and pay the Load Serving Entity's applicable retail rate. An Aggregation that includes one or more Energy Storage Resources that are required to pay a retail rate for its charging withdrawals is subject to the Services Tariff Section 7.2.8 settlement rules for Energy Storage Resources.

Aggregators shall not offer any Resource as part of an Aggregation that is participating in the ISO Administered Markets in a different Aggregation or as an individual Resource.

Aggregators shall ensure that Aggregation operating parameters submitted to the ISO are consistent with the combined operating parameters and applicable interconnection agreements of each individual Resource in the Aggregation.

#### **4.1.10.2 Aggregation Electrical Location**

The ISO shall establish a set of Transmission Nodes in the New York Control Area at

which individual Resources may aggregate. Each Transmission Node shall be identified in the ISO Procedures. The ISO shall consult with the appropriate Member System prior to identifying a Transmission Node in accordance with ISO Procedures. Aggregators shall identify, after consultation with the interconnecting utility, the Transmission Node for each Aggregation. All Resources in an Aggregation must be electrically located in the New York Control Area, and electrically connected to the same ISO-identified Transmission Node. Multiple Aggregators may each enroll one or more Aggregations at a Transmission Node.

The ISO may modify the set of Transmission Nodes from time to time due to conditions on the New York State Transmission System and the underlying distribution systems changing over time. The ISO shall also review and update (if needed) the identified Transmission Nodes on an annual basis, and will post a notice of any changes to the identified Transmission Nodes at least ninety (90) days prior to the beginning of the Capability Year. Changes to the set of Transmission Nodes shall take effect on the first day of the Capability Year. Aggregators shall certify, in accordance with ISO Procedures, that Aggregations affected by changes to Transmission Nodes meet all requirements of this Section pursuant to ISO Procedures.

#### **4.1.10.3 Resources Entering and Changing Aggregations**

Subject to the requirement that all of the Resources in an Aggregation must be electrically connected to the same ISO-identified Transmission Node, an individual Resource may enter an Aggregation for the first time or leave its current Aggregation and join a new Aggregation to be effective at the start of a calendar month, but must provide at least thirty (30) calendar days notice of its intent to enter or change Aggregations. Registration of Resources that leave or join an Aggregation shall be completed in accordance with ISO Procedures. The ISO must approve all Resource registrations before the Resource is allowed to participate in an Aggregation.

Additional rules for Resources changing Aggregations, that participate in the ICAP market are located in Services Tariff Section 5.12.13.1.

#### **4.1.10.4 Aggregation Metering**

Each Aggregation must meet the applicable metering standards identified in the ISO's Tariffs and in ISO Procedures. Aggregators may choose to have an ISO-authorized Meter Services Entity or the applicable Member System provide Aggregation metering services for wholesale market participation. *See Services Tariff § 13.*

Real-time telemetry data and revenue-quality meter data shall be submitted for each Aggregation. Real-time telemetry for DER Aggregations shall consist of four parts: (i) Energy injections, (ii) Energy withdrawals by Withdrawal Eligible Generators, (iii) Demand Reductions, and (iv) the sum of (i), (ii) and (iii). Revenue-quality meter data for each DER Aggregation shall consist of three parts: (i) Energy injections; (ii) Energy withdrawals by Withdrawal-Eligible Generators; and (iii) Demand Reductions. Aggregations of other Resource types shall submit meter data in accordance with Services Tariff Section 13 and the ISO Procedures.

#### **4.1.10.5 Qualification Requirements for Aggregators**

Aggregators must be Customers. Aggregators must (i) comply with the registration requirements set forth in Services Tariff Section 9, and the ISO Procedures; (ii) designate one or more contact persons to receive ISO communications; and (iii) comply with the metering requirements set forth in Services Tariff Section 13 and the associated ISO Procedures.

#### **4.1.11 Dual Participation**

Effective May 1, 2020, Generators, Demand Side Resources, and Distributed Energy Resources electrically located in the NYCA may simultaneously participate in the ISO-



administered wholesale markets and in programs or markets operated to meet the needs of distribution systems located in the NYCA. Generators, Demand Side Resources, and Distributed Energy Resources engaged in dual participation must meet all applicable rules and obligations set forth in the ISO Tariffs.

Generators, Demand Side Resources, and Distributed Energy Resources operating to meet an obligation outside of the ISO-administered wholesale markets must Bid in a manner that ensures they will be dispatched by the ISO for the market intervals consistent with the manner in which the Resource operates to meet such obligation(s). The ISO and Transmission Owners shall coordinate scheduling and dispatch for all Generators, Demand Side Resources, and Distributed Energy Resources engaged in Dual Participation in accordance with ISO Procedures. The ISO has the authority to determine schedules for these resources.

## **5.12 Requirements Applicable to Installed Capacity Suppliers**

### **5.12.1 Installed Capacity Supplier Qualification Requirements**

In order to qualify as an Installed Capacity Supplier or be part of an Aggregation that is qualified as an Installed Capacity Supplier, Generators, controllable transmission projects electrically located in the NYCA, transmission projects with associated incremental transfer capability, and Distributed Energy Resources that have the ability to inject Energy must have obtained Capacity Resource Interconnection Service (“CRIS”) pursuant to the applicable provisions of Attachment S to the ISO OATT and have entered service: controllable transmission projects must also have obtained Unforced Capacity Deliverability Rights and transmission projects with associated incremental transfer capability must also have obtained External-to-ROS Deliverability Rights. Generators that are Co-located Storage Resources must each, independently, obtain CRIS in order to qualify as Installed Capacity Suppliers. Even if a Resource has otherwise satisfied the requirements to participate in the ISO’s Installed Capacity market, a Resource in Inactive Reserves, an ICAP Ineligible Forced Outage, a Mothball Outage, or that is Retired is ineligible to participate in the ISO’s Installed Capacity market. A Resource that elects to participate in the ICAP Market, and is within a defined electrical boundary, electrically interconnected with, and routinely serves a Host Load (which Host Load does not consist solely of Station Power) at a single PTID may only participate in the Installed Capacity market as a Behind-the-Meter Net Generation Resource. In order to participate as part of an Aggregation or as an Energy Storage Resource, such a resource may not participate with the Behind-the-Meter Net Generation configuration. Generators that are Co-located Storage Resources must each, independently, comply with all applicable market rules contained in this

Services Tariff Section 5.12 as an Energy Storage Resource or as an Intermittent Power Resource, as appropriate.

In addition, to qualify as an Installed Capacity Supplier in the NYCA, Energy Limited Resources, Generators, Installed Capacity Marketers, Intermittent Power Resources, Behind-the-Meter Net Generation Resources, Limited Control Run-of-River Hydro Resources and System Resources rated 1 MW or greater, other than External System Resources and Control Area System Resources which have agreed to certain Curtailment conditions as set forth in the third to last paragraph of Section 5.12.1 below, Responsible Interface Parties, existing municipally-owned generation, Energy Limited Resources, and Intermittent Power Resources, to the extent those entities are subject to the requirements of Section 5.12.11 of this Tariff, Aggregations with a capacity rating of 0.1 MW or greater, and Energy Storage Resources with a nameplate capacity rating that allows a minimum injection to the NYS Transmission System or distribution system of 0.1 MW or greater shall:

- 5.12.1.1 provide information reasonably requested by the ISO including the name and location of Resources, and System Resources;
- 5.12.1.2 in accordance with the ISO Procedures, perform DMNC or DMGC tests and submit the results to the ISO, or provide to the ISO appropriate historical production data;
- 5.12.1.3 abide by the ISO Generator maintenance coordination procedures;
- 5.12.1.4 provide the expected return date from any outages (including partial outages) to the ISO;
- 5.12.1.5 in accordance with the ISO Procedures,

- 5.12.1.5.1 provide documentation demonstrating that it will not use the same  
Unforced Capacity for more than one (1) buyer at the same time, and
- 5.12.1.5.2 in the event that the Installed Capacity Supplier supplies more Unforced  
Capacity than it is qualified to supply in any specific month (*i.e.*, is short on  
Capacity), documentation that it has procured sufficient Unforced Capacity to  
cover this shortfall.
- 5.12.1.6 except for Installed Capacity Marketers and Intermittent Power Resources  
that depend upon wind or solar as their fuel or Aggregations that are comprised of  
Intermittent Power Resources that depend on the same type of fuel, with that fuel  
being wind or solar, Bid into the Day-Ahead Market, unless the Energy Limited  
Resource, Generator, Aggregation, Limited Control Run-of-River Hydro  
Resource or System Resource is unable to do so due to an outage as defined in the  
ISO Procedures or due to temperature related de-ratings. Resources may also  
enter into the MIS an upper operating limit that would define the operating limit  
under normal system conditions. The circumstances under which the ISO will  
direct a Resource to exceed its upper operating limit are described in the ISO  
Procedures;
- 5.12.1.6.1 Co-located Storage Resources must each submit a CSR injection  
Scheduling Limit and a CSR withdrawal Scheduling Limit for each hour of the  
Day-Ahead Market consistent with Section 5.12.7.1 below;
- 5.12.1.7 provide Operating Data in accordance with Section 5.12.5 of this Tariff;
- 5.12.1.8 provide notice to the ISO of any proposed transfers of deliverability rights  
to be carried out pursuant to Sections 25.9.4 - 25.9.6 of Attachment S to the ISO

OATT, on the Class Year Start Date if a request to transfer CRIS at a different location, and upon the submission of the request if it is a request to transfer CRIS at the same location.

5.12.1.9           comply with the ISO Procedures;

5.12.1.10          when the ISO issues a Supplemental Resource Evaluation request (an SRE), NYCA Resources must Bid into the in-day market unless (and only to the extent) the entity has a bid pending in the Real-Time Market when the SRE request is made or is unable to bid in response to the SRE request due to an outage as defined in the ISO Procedures, or due to other operational issues, or due to temperature related deratings.

If an External Installed Capacity Supplier is a Generator, or if an External Generator is associated with an Unforced Capacity sale using UDRs or EDRs, then except to the extent such a Generator is unable to Bid in response to the SRE request due to an outage as defined in the ISO Procedures, due to physical operating limitations affecting the Generator, or due to other operational issues that are outside the Installed Capacity Supplier's control, as determined by the ISO, it must take all of the following actions for each hour of an SRE request (a) Bid an Import to the NYCA in a MW quantity equal to the lesser of (i) the ICAP equivalent of the UCAP sold, or (ii) the maximum MW the Generator is able to produce, at the approved Proxy Generator Bus, at the applicable minimum Bid Price, and (b) ensure that the External Generator is operating and is available to provide all of the MW that were Bid to be imported into the NYCA, up to the ICAP equivalent of the UCAP sold, for the entire duration of the SRE request,

and (c) obtain all reservations and transmission service necessary to deliver all of the MW that were Bid to be imported into the NYCA or to a Locality from the Generator, up to the ICAP equivalent of the UCAP sold from the External Generator, at the approved Proxy Generator Bus.

If the External Installed Capacity Supplier that is a Generator, or the External Generator associated with an Unforced Capacity sale using UDRs or EDRs, is not able to Import the quantity of Energy equal to the ICAP equivalent of the UCAP sold from the Generator or EDR to the NYCA, or if a UDR to the Locality, for every hour of an SRE request then, except to the extent already addressed by a declared outage, the Generator shall provide to the ISO an explanation of the reasons for its failure or inability to perform, including evidence demonstrating any physical operating limitations or other operational issues that prevented the Generator from Importing the quantity of Energy equal to the ICAP equivalent of the UCAP sold from the Generator to the NYCA. To the extent the ISO determines that the information and supporting evidence provided demonstrates that the failure or inability to deliver occurred for reasons outside the control of the External Installed Capacity Supplier or the External Generator associated with an Unforced Capacity sale using UDRs or EDRs, then the deficiency charge set forth in Section 5.12.12.2 below that applies solely to violations of this Section 5.12.1.10, shall not be assessed.

If an External Installed Capacity Supplier is a Control Area System Resource then, except to the extent it is unable to Bid in response to the SRE request due to an outage as defined in the ISO Procedures or due to operational

issues that are outside the Installed Capacity Supplier's control, it must take all of the following actions for each hour of an SRE request (x) Bid an Import in a MW quantity equal to the ICAP equivalent of the UCAP sold, at the approved Proxy Generator Bus, at the applicable minimum Bid Price, and (y) obtain all reservations and transmission service necessary to deliver the ICAP equivalent of the UCAP sold from the Control Area System Resource to the NYCA at the approved Proxy Generator Bus.

If the External Installed Capacity Supplier that is a Control Area System Resource is not able to Import the quantity of Energy equal to the ICAP equivalent of the UCAP sold from the Control Area System Resource to the NYCA for every hour of an SRE request then, except to the extent already addressed by a declared outage, the External Installed Capacity Supplier shall provide to the ISO an explanation of the reasons for its failure or inability to perform, including evidence demonstrating any operational issues that prevented the External ICAP Supplier from Importing the quantity of Energy equal to the ICAP equivalent of the UCAP sold from the Control Area System Resource to the NYCA. To the extent the ISO determines that the information and supporting evidence provided demonstrates that the failure or inability to deliver occurred for reasons outside the External Installed Capacity Supplier's control, then the deficiency charge set forth in Section 5.12.12.2 below that applies solely to violations of this Section 5.12.1.10, shall not be assessed. A Control Area System Resource must demonstrate that transmission outage(s) prevented delivery of all available Resources in order for the ISO to determine that the Control Area

System Resource's failure to Import the quantity of Energy equal to the ICAP equivalent of the UCAP sold occurred for a reason that was outside the External Installed Capacity Supplier's control.

When an External Installed Capacity Supplier that is responding to an ISO SRE request Bids its Import at a Non-Competitive Proxy Generator Bus, its obligation to Bid an Import at the applicable minimum Bid Price includes the obligation to ensure that neither the External Installed Capacity Supplier nor any of its Affiliates are offering other Imports at an equivalent or greater economic priority at the Non-Competitive Proxy Generator Bus.

5.12.1.11 Installed Capacity Suppliers located East of Central-East shall Bid in the Day-Ahead and Real-Time Markets all Capacity available for supplying 10-Minute Non-Synchronized Reserve (unless the Generator or Aggregation is unable to meet its commitment because of an outage as defined in the ISO Procedures), except for the Resources described in Subsections 5.12.1.11.1, 5.12.1.11.2 and 5.12.1.11.3 below;

5.12.1.11.1 Generators providing Energy under contracts executed and effective on or before November 18, 1999 (including PURPA contracts) in which the power purchasers do not control the operation of the supply source but would be responsible for penalties for being off-schedule, with the exception of Generators under must-take PURPA contracts executed and effective on or before November 18, 1999, who have not provided telemetering to their local TO and historically have not been eligible to participate in the NYPP market, which will continue to be treated as TO Load modifiers under the ISO-administered markets;



5.12.1.11.2 Existing topping turbine Generators and extraction turbine Generators producing 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 Generators used in replacing or repowering steam supplies from such units (in accordance with good engineering and economic design) that cannot follow schedules, up to a maximum total of 533 MW of such units; and

5.12.1.11.3 Resources that have demonstrated to the ISO that they are subject to environmental, contractual or other legal or physical requirements that would otherwise preclude them from providing 10-Minute NSR;

5.12.1.12 A Resource that was determined by the ISO to be qualified as a Behind-the-Meter Net Generation Resource and for which Net Unforced Capacity was calculated by the ISO for a Capability Year can annually, by written notice received by the NYISO prior to August 1, elect not to participate in the ISO Administered Markets as a Behind-the-Meter Net Generation Resource. Such notice shall be in accordance with ISO Procedures. A Resource that makes such an election cannot participate as a Behind-the-Meter Net Generation Resource for the entire Capability Year for which it made the election, but can, however, prior to August 1 of any subsequent Capability Year, provide all required information in order to seek to re-qualify as a Behind-the-Meter Net Generation Resource.

5.12.1.13 An Energy Storage Resource, or Aggregations comprised entirely of Energy Storage Resources, may de-rate its maximum capability in order to meet the applicable Services Tariff Section 5.12.14 run-time requirement. ESRs electing to de-rate their maximum capability shall perform a DMNC test at an

output level consistent with its de-rated capability in accordance with Services Tariff Section 5.12.14 and ISO Procedures (*see*, Installed Capacity Manual § 4).

5.12.1.14 Energy Limited Resources, Energy Storage Resources, Aggregations comprised entirely of Energy Storage Resources, DER Aggregations, and Aggregations that are Energy Limited Resources must elect an Energy Duration Limitation that corresponds to a Duration Adjustment Factor, as described in Section 5.12.14 below, and validate the Energy Duration Limitation pursuant to Section 5.12.1.2 above. An Installed Capacity Supplier may elect any Energy Duration Limitation that it can demonstrate pursuant to Section 5.12.1.2.

The ISO shall inform each potential Installed Capacity Supplier that the ISO must receive and approve DMNC or DMGC data, as applicable of its approved DMNC or DMGC ratings for the Summer Capability Period and the Winter Capability Period in accordance with the ISO Procedures.

Requirements to qualify as Installed Capacity Suppliers for External System Resources and Control Area System Resources located in External Control Areas that have agreed not to Curtail the Energy associated with such Installed Capacity or to afford it the same Curtailment priority that it affords its own Control Area Load shall be established in the ISO Procedures.

External Installed Capacity not associated with UDRs, including capacity associated with External CRIS Rights, EDRs, Grandfathered External Installed Capacity Agreements listed in Attachment E of the ISO Installed Capacity Manual, the Existing Transmission Capacity for Native Load listed for New York State Electric & Gas Corporation in Table 3 of Attachment L to the ISO OATT, Import Rights, and External System Resources, is only qualified to satisfy a

NYCA Minimum Unforced Capacity Requirement and is not eligible to satisfy a Locational Minimum Installed Capacity Requirement.

Not later than 30 days prior to each ICAP Spot Market Auction, each Market Participant that may make offers to sell Unforced Capacity in such auction shall submit information to the ISO, in accordance with ISO Procedures and in the format specified by the ISO that identifies each Affiliated Entity, as that term is defined in Section 23.2.1 of Attachment H of the Services Tariff, of the Market Party or with which the Market Party is an Affiliated Entity. The names of entities that are Affiliated Entities shall not be treated as Confidential Information, but such treatment may be requested for the existence of an Affiliated Entity relationship. The information submitted to the ISO shall identify the nature of the Affiliated Entity relationship by the applicable category specified in the definition of “Affiliated Entity” in Section 23.2.1 of Attachment H of the Services Tariff.

#### **5.12.2 Additional Provisions Applicable to External Installed Capacity Suppliers**

Terms in this Section 5.12.2 not defined in the Services Tariff have the meaning set forth in the OATT.

##### **5.12.2.1 Provisions Addressing the Applicable External Control Area**

External Generators, External System Resources, and Control Area System Resources qualify as Installed Capacity Suppliers if they demonstrate to the satisfaction of the NYISO that the Installed Capacity Equivalent of their Unforced Capacity is deliverable to the NYCA; in the case of an entity using a UDR to meet a Locational Minimum Installed Capacity Requirement, to the NYCA interface associated with that UDR transmission facility and will not be recalled or curtailed by an External Control Area to satisfy its own Control Area Loads; in the case of an EDR, to the NYCA interface over which it creates increased transfer capability; and in the case

of Control Area System Resources, if they demonstrate that the External Control Area will afford the NYCA Load the same curtailment priority that they afford their own Control Area Native Load Customers. The amount of Unforced Capacity that may be supplied by such entities qualifying pursuant to the alternative criteria may be reduced by the ISO, pursuant to ISO Procedures, to reflect the possibility of curtailment. External Installed Capacity associated with Import Rights, EDRs or UDRs is subject to the same deliverability requirements applied to Internal Installed Capacity Suppliers associated with UDRs.

#### **5.12.2.2 Additional Provisions Addressing Internal Deliverability and Import Rights**

In addition to the provisions contained in Section 5.12.2.1 above, External Installed Capacity not associated with UDRs, EDRs, or External CRIS Rights will be subject to the deliverability test in Section 25.7.8 and 25.7.9 of Attachment S to the ISO OATT. The deliverability of External Installed Capacity not associated with UDRs, EDRs, or External CRIS Rights will be evaluated annually as a part of the process that sets import rights for the upcoming Capability Year, to determine the amount of External Installed Capacity that can be imported to the New York Control Area across any individual External Interface and across all of those External Interfaces, taken together. The External Installed Capacity deliverability test will be performed using the ISO's forecast, for the upcoming Capability Year, of New York Control Area CRIS resources, transmission facilities, and load. Under this process (i) Grandfathered External Installed Capacity Agreements listed in Attachment E of the ISO Installed Capacity Manual, and (ii) the Existing Transmission Capacity for Native Load listed for New York State Electric & Gas Corporation in Table 3 of Attachment L to the ISO OATT, will be considered deliverable within the Rest of State. Additionally, 1090 MW of imports made over the Quebec

(via Chateauguay) Interface will be considered to be deliverable until the end of the 2010 Summer Capability Period.

The import limit set for External Installed Capacity not associated with UDRs, EDRs or External CRIS Rights will be set no higher than the amount of imports deliverable into Rest of State that (i) would not increase the LOLE as determined in the upcoming Capability Year IRM consistent with Section 2.7 of the NYISO Installed Capacity Manual, “Limitations on Unforced Capacity Flow in External Control Areas,” (ii) are deliverable within the Rest of State Capacity Region when evaluated with the New York Control Area CRIS resources (including EDRs and UDRs) and External CRIS Rights forecast for the upcoming Capability Year, and (iii) would not degrade the transfer capability of any Other Interface by more than the threshold identified in Section 25.7.9 of Attachment S to the ISO OATT. Import limits set for External Installed Capacity will reflect the modeling of awarded External CRIS rights, but the awarded External CRIS rights will not be adjusted as part of import limit-setting process. Procedures for qualifying selling, and delivery of External Installed Capacity are detailed in the Installed Capacity Manual.

Until the grandfathered import rights over the Quebec (via Chateauguay) Interface expire at the end of the 2010 Summer Capability Period, the 1090 MW of grandfathered import rights will be made available on a first-come, first-served basis pursuant to ISO Procedures. Any of the grandfathered import rights over the Quebec (via Chateauguay) Interface not utilized for a Capability Period will be made available to other external resources for that Capability Period, pursuant to ISO Procedures, to the extent the unutilized amount is determined to be deliverable.

Additionally, any of the Existing Transmission Capacity for Native Load listed for New York State Electric & Gas Corporation not utilized by New York State Electric & Gas

Corporation for a Capability Period will be made available to other external resources for that Capability Period, pursuant to ISO procedures, to the extent the unutilized amount is determined to be deliverable within the Rest of State Capacity Region.

LSEs with External Installed Capacity as of the effective date of this Tariff will be entitled to designate External Installed Capacity at the same NYCA Interface with another Control Area, in the same amounts in effect on the effective date of this Tariff. To the extent such External Installed Capacity corresponds to Existing Transmission Capacity for Native Load as reflected in Table 3 of Attachment L to the ISO OATT, these External Installed Capacity rights will continue without term and shall be allocated to the LSE's retail access customers in accordance with the LSE's retail access program on file with the PSC and subject to any necessary filings with the Commission. External Installed Capacity rights existing as of September 17, 1999 that do not correspond to Table 3 of Attachment L to the ISO OATT shall survive for the term of the relevant External Installed Capacity contract or until the relevant External Generator is retired.

#### **5.12.2.3 One-Time Conversion of Grandfathered Quebec (via Chateauguay) Interface Rights.**

An entity can request to convert a specified number of MW, up to 1090 MW over the Quebec External Interface (via Chateauguay), into External CRIS Rights by making either a Contract Commitment or Non-Contract Commitment that satisfies the requirements of Section 25.7.11.1 of Attachment S to the ISO OATT. The converted number of MW will not be subject to further evaluation for deliverability within a Class Year Deliverability Study under Attachment S to the ISO OATT, as long as the External CRIS Rights are in effect.

5.12.2.3.1 The External CRIS Rights awarded under this conversion process will first become effective for the 2010-2011 Winter Capability Period.

5.12.2.3.2 Requests to convert these grandfathered rights must be received by the NYISO on or before 5:00 pm Eastern Time on February 1, 2010, with the following information: (a) a statement that the entity is electing to convert by satisfying the requirements of a Contract Commitment or a Non-Contract Commitment in accordance with Section 25.7.11.1 of Attachment S to the ISO OATT; (b) the length of the commitment in years; (c) for the Summer Capability Period, the requested number of MW; (d) for the Winter Capability Period, the Specified Winter Months, if any, and the requested number of MW; and (e) a minimum number of MW the entity will accept if granted (“Specified Minimum”) for the Summer Capability Period and for all Specified Winter Months, if any.

5.12.2.3.3 An entity cannot submit one or more requests to convert in the aggregate more than 1090 MW in any single month.

5.12.2.3.4 If requests to convert that satisfy all other requirements stated herein are equal to or less than the 1090 MW limit, all requesting entities will be awarded the requested number of MW of External CRIS Rights. If conversion requests exceed the 1090 MW limit, the NYISO will prorate the allocation based on the weighted average of the requested MW times the length of the contract/commitment (*i.e.*, number of Summer Capability Periods) in accordance with the following formula:

$$\begin{aligned} & \text{Rights allocated to entity } i \\ &= 1090 \\ & \quad * (MW_i * \text{contract/commitment length}_i) \\ & \quad / \sum_j (MW_j * \text{contract/commitment length}_j) \end{aligned}$$

$j = 1, \dots, \# \text{ entities requesting import rights}$

In the formula, contract/commitment length means the lesser of the requested contract/commitment length and twenty (20) years. The NYISO will perform separate calculations for the Summer and Winter Capability Periods. The NYISO will determine whether the prorated allocated number of MW for any requesting entity is less than the entity's Specified Minimum. If any allocation is less, the NYISO will remove such request(s) and recalculate the prorated allocations among the remaining requesting entities using the above formula. This process will continue until the prorated allocation meets or exceeds the specified minimum for all remaining requests.

- 5.12.2.3.5 Any portion of the previously grandfathered 1090 MW not converted through this process will no longer be grandfathered from deliverability. Previously grandfathered rights converted to External CRIS Rights but then terminated will no longer be grandfathered from deliverability.

#### **5.12.2.4 Offer Cap Applicable to Certain External CRIS Rights**

Notwithstanding any other capacity mitigation measures or obligations that may apply, the offers of External Installed Capacity submitted pursuant to a Non-Contract Commitment, as described in Section 25.7.11.1.2 of Attachment S of the ISO OATT, will be subject to an offer cap in each month of the Summer Capability Period and for all Specified Winter Months. This offer cap will be determined as the higher of:

- 5.12.2.4.1 1.1 times the price corresponding to all available Unforced Capacity determined from the NYCA ICAP Demand Curve for that Period; and
- 5.12.2.4.2 The most recent auction clearing price (a) in the External market supplying the External Installed Capacity, if any, and if none, then the most recent



auction clearing price in an External market to which the capacity may be wheeled, less (b) any transmission reservation costs in the External market associated with providing the Installed Capacity, in accordance with ISO Procedures.

### **5.12.3 Installed Capacity Supplier Outage Scheduling Requirements**

All Installed Capacity Suppliers, except for Control Area System Resources and Responsible Interface Parties, that intend to supply Unforced Capacity to the NYCA shall submit a confidential notification to the ISO of their proposed outage schedules in accordance with the ISO Procedures. Transmission Owners will be notified of these and subsequently revised outage schedules. Based upon a reliability assessment, if Operating Reserve deficiencies are projected to occur in certain weeks for the upcoming calendar year, the ISO will request voluntary rescheduling of outages. In the case of Installed Capacity Suppliers actually supplying Unforced Capacity to the NYCA, if voluntary rescheduling is ineffective, the ISO will invoke forced rescheduling of their outages to ensure that projected Operating Reserves over the upcoming year are adequate.

An Installed Capacity Supplier that refuses a forced rescheduling of its outages for any unit shall be prevented from supplying Unforced Capacity in the NYCA with that unit during any month where it undertakes such outages. The rescheduling process is described in the ISO Procedures.

An Installed Capacity Supplier that intends to supply Unforced Capacity in a given month that did not qualify as an Installed Capacity Supplier prior to the beginning of the Capability Period must notify the ISO in accordance with the ISO Procedures so that it may be subject to forced rescheduling of its proposed outages in order to qualify as an Installed Capacity

Supplier. A Resource that refuses the ISO's forced rescheduling of its proposed outages shall not qualify as an Installed Capacity Supplier for that unit for any month during which it schedules or conducts an outage.

Outage schedules for External System Resources and Control Area System Resources shall be coordinated by the External Control Area and the ISO in accordance with the ISO Procedures.

#### **5.12.4 Required Certification for Installed Capacity**

- (a) Each Installed Capacity Supplier must confirm to the ISO, in accordance with ISO Procedures that the Unforced Capacity it has certified has not been sold for use in an External Control Area.
- (b) Each Installed Capacity Supplier holding rights to UDRs or EDRs from an External Control Area must confirm to the ISO, in accordance with ISO Procedures, that it will not use as self-supply or offer, and has not sold, Installed Capacity associated with the quantity of MW for which it has not made its one time capability adjustment year election pursuant to Section 5.11.4 (if applicable.)
- (c) On and after the execution of an RMR Agreement, and for the duration of its term, an RMR Generator shall not enter into any new agreement or extend any other agreement that impairs or otherwise diminishes its ability to comply with its obligation under an RMR Agreement, or that limits its ability to provide Energy, Capacity, or Ancillary Services directly to the ISO Administered Markets. An Interim Service Provider that is required to keep its generating unit(s) in service shall not enter into any new agreement or extend any other agreement that limits its ability to provide Energy, Capacity, or Ancillary Services directly to the ISO

Administered Markets or otherwise meet its obligations as an Interim Service Provider.

#### **5.12.5 Operating Data Reporting Requirements**

To qualify as Installed Capacity Suppliers in the NYCA, Resources shall submit to the ISO Operating Data in accordance with this Section 5.12.5 and the ISO Procedures. Resources that do not submit Operating Data in accordance with the following subsections and the ISO Procedures may be subject to the sanctions provided in Section 5.12.12.1 of this Tariff.

Resources that were not in operation on January 1, 2000 shall submit Operating Data to the ISO no later than one month after such Resources commence commercial operation, and in accordance with the ISO Procedures and the following subsections as applicable.

##### **5.12.5.1 Generators, System Resources, Energy Limited Resources, Energy Storage Resources, Responsible Interface Parties, Intermittent Power Resources, Limited Control Run-of-River Hydro Resources Municipally Owned Generation and Distributed Energy Resources**

To qualify as Installed Capacity Suppliers in the NYCA, Generators, External Generators, System Resources, External System Resources, Energy Limited Resources, Responsible Interface Parties, Intermittent Power Resources, Limited Control Run-of-River Hydro Resources, Energy Storage Resources, and municipally owned generation and Distributed Energy Resources or the purchasers of Unforced Capacity associated with those Resources shall submit GADS Data, data equivalent to GADS Data, and/or other Operating Data to the ISO in accordance with the ISO Procedures. Prior to the successful implementation of a software modification that allows gas turbines to submit multiple bid points, these units shall not be considered to be forced out for any hours that the unit was available at its base load capability in accordance with the ISO Procedures. This section shall also apply to any Installed Capacity

Supplier, External or Internal, using UDRs to meet Locational Minimum Installed Capacity Requirements.

#### **5.12.5.2 Control Area System Resources**

To qualify as Installed Capacity Suppliers in the NYCA, Control Area System Resources, or the purchasers of Unforced Capacity associated with those Resources, shall submit CARL Data and actual system failure occurrences data to the ISO each month in accordance with the ISO Procedures.

#### **5.12.5.3 Transmission Projects Granted Unforced Capacity Deliverability Rights**

An owner of a transmission project that receives UDRs must, among other obligations, submit outage data or other operational information in accordance with the ISO procedures to allow the ISO to determine the number of UDRs associated with the transmission facility.

#### **5.12.5.4 Transmission Projects Granted External-to ROS Deliverability Rights**

An owner of a transmission project that receives EDRs must, among other obligations, submit outage data or other operational information when determined applicable by the ISO and in accordance with ISO Procedures.

#### **5.12.5.5 Co-located Storage Resources**

Generators that are Co-located Storage Resources must each, individually, comply with the requirements of Section 5.12.5.1 of this Services Tariff. Generators that are Co-located Storage Resources must submit outage data or other operational information in accordance with ISO Procedures that will allow the ISO to validate the CSR Scheduling Limits associated with the Co-located Storage Resources. CSR Scheduling Limits will be incorporated into each CSR Generator's UCAP calculation (*see Services Tariff Section 5.12.6.2*).

## **5.12.6 Capacity Calculations, Operating Data Default, Value and Collection**

### **5.12.6.1 ICAP Calculation for Behind-the-Meter Net Generation Resources**

The ISO shall calculate the amount of Net-ICAP for each Behind-the-Meter Net Generation Resource as the Adjusted DMGC of the Generator of the Behind-the-Meter Net Generation Resource minus the Resource's Adjusted Host Load in accordance with this Tariff and ISO Procedures.

#### **5.12.6.1.1 Adjusted DMGC**

The ISO's calculation of the Adjusted DMGC of a Behind-the-Meter Net Generation Resource shall be the least of: (i) its DMGC for the Capability Period; (ii) its Adjusted Host Load plus its applicable Injection Limit; and (iii) its Adjusted Host Load plus the number of MW of CRIS it has obtained, as determined in accordance with OATT Section 25 (OATT Attachment S) and ISO Procedures.

If the Station Power of a Behind-the-Meter Net Generation Resource is separately metered from all other Load of the Resource, such that the Station Power Load can be independently measured and verified, the Generator of a Behind-the-Meter Net Generation Resource may elect to perform a DMNC Test instead of a DMGC Test pursuant to ISO Procedures. Such election must be made in writing to the ISO prior to the start of the DMNC Test Period.

If a Behind-the-Meter Net Generation Resource elects to take a DMNC Test, the Station Power measured during such DMNC Test shall not be included in the Resource's Host Load. A Behind-the-Meter Net Generation Resource's DMNC value for the Capability Period shall be used in lieu of a DMGC value in the calculation of the Resource's Adjusted DMGC for the purposes of Sections 5.12.6.1 and 5.12.6.2 of this Services Tariff.

#### **5.12.6.1.2 Adjusted Host Load**

A Behind-the-Meter Net Generation Resource's Adjusted Host Load shall be equal to the product of the Average Coincident Host Load multiplied by one plus the Installed Reserve Margin.

The Adjusted Host Load shall be calculated by the ISO on an annual basis prior to the start of the Summer Capability Period and in accordance with ISO Procedures, based upon the Behind-the-Meter Net Generation Resource's Average Coincident Host Load for the prior Summer Capability Period and the Winter Capability Period before that.

#### **5.12.6.1.2.1 Average Coincident Host Load**

The ISO must receive the Behind-the-Meter Net Generation Resource's applicable metered Load data required to calculate an Average Coincident Host Load in accordance with ISO Procedures. The ISO shall compute the Average Coincident Host Load for each Capability Year (i) using the metered Host Load data for the applicable NYCA peak Load hours, except as provided below in this Section, and (ii) adjusted for weather normalization and Load growth as determined by the ISO in relation to developing the NYCA Minimum Installed Capacity Requirement in accordance with ISO Procedures.

For each Capability Year, the NYISO shall use the average of the highest twenty (20) one-hour peak Loads of the Host Load of the Behind-the-Meter Net Generation Resource that occur during the top forty (40) NYCA peak Load hours of the prior Summer Capability Period and the Winter Capability Period before that to calculate the Average Coincident Host Load.

If a facility meets the criteria to be, and has not previously been, a Behind-the-Meter Net Generation Resource, but does not have all of the appropriate meter data, its Average Coincident Host Load shall be a value forecasted by the Behind-the-Meter Net Generation Resource. The

Behind-the-Meter Net Generation Resource's forecast shall be based on actual meter data, or if not available, billing data or other business data of the Host Load. An estimated Average Coincident Host Load can only be applicable to a Behind-the-Meter Net Generation Resource until actual data becomes available, but in any event no longer than three (3) consecutive Capability Years beginning with the Capability Year it is first an Installed Capacity Supplier.

#### **5.12.6.1.2.2 Determination of Adjusted Host Load**

After the ISO has calculated a Behind-the-Meter Net Generation Resource's Average Coincident Host Load, it shall then apply the NYCA Installed Reserve Margin. The Behind-the-Meter Net Generation Resource's Adjusted Host Load will be established by multiplying the Resource's Average Coincident Host Load for the Capability Year by the quantity of one plus the NYCA Installed Reserve Margin.

#### **5.12.6.2 UCAP Calculations**

The ISO shall calculate for each Resource the amount of Unforced Capacity that each Installed Capacity Supplier is qualified to supply in the NYCA in accordance with formulae provided in the ISO Procedures. A Resource's Unforced Capacity will be the applicable Adjusted Installed Capacity multiplied by the quantity of 1 minus the Resource's derating factor.

The amount of Unforced Capacity that each Generator, except for the Generator of a Behind-the-Meter Net Generation Resource, System Resource, Energy Limited Resource, Special Case Resource, and municipally-owned generation is authorized to supply in the NYCA shall be based on the ISO's calculations of individual Equivalent Demand Forced Outage Rates. The amount of Unforced Capacity that each Energy Storage Resource, Aggregation that is comprised entirely of Energy Storage Resources, and DER Aggregation is authorized to supply in the NYCA shall be based on the individual availability of the Energy Storage Resource or the

availability of the Aggregation in the Real-Time Market and calculated by the ISO in accordance with ISO Procedures. Except as provided in Section 5.12.6.2.1 of this Services Tariff, this calculation shall not include hours in any month that the Energy Storage Resource or Aggregation was in an outage state that started on or after May 1, 2015 and that precluded its eligibility to participate in the Installed Capacity market. The amount of Unforced Capacity that an Energy Storage Resource that is participating as a part of a Co-located Storage Resource is authorized to supply in the NYCA shall account for reductions to the CSR Scheduling Limits, or the unavailability of the associated facilities, in accordance with ISO Procedures.

The amount of Unforced Capacity that each Control Area System Resource is authorized to supply in the NYCA shall be based on the ISO's calculation of each Control Area System Resource's availability. The amount of Unforced Capacity that each Intermittent Power Resource or an Aggregation that is entirely comprised of Intermittent Power Resources that depend on the same type of fuel is authorized to supply in the NYCA shall be based on the ISO's calculation of the amount of capacity that the Intermittent Power Resource or an Aggregation that is entirely comprised of Intermittent Power Resources that depend on the same type of fuel can reliably provide during system peak Load hours in accordance with ISO Procedures.

Starting with the Capability Year beginning May 1, 2021 and continuing until the Capability Year that begins in May 2024, this calculation will be weighted according to the respective Peak Load Window weighting factors provided in the table below. Separate Summer and Winter Peak Load Windows are applicable based on the penetration of duration limited resources in Section 5.12.14.

	Summer Peak Load Window		Winter Peak Load Window	
Hour Beginning	6 Hour	8 Hour	6 Hour	8 Hour



12		5.00%		
13	12.50%	10.00%		
14	18.75%	17.50%		5.00%
15	18.75%	17.50%		5.00%
16	18.75%	17.50%	18.75%	17.50%
17	18.75%	17.50%	18.75%	17.50%
18	12.50%	10.00%	18.75%	17.50%
19		5.00%	18.75%	17.50%
20			12.50%	10.00%
21			12.50%	10.00%

Except as provided in Section 5.12.6.2.1 of this Services Tariff, this calculation shall not include hours in any month that the Intermittent Power Resource or an Aggregation that is entirely comprised of Intermittent Power Resources that depend on the same type of fuel was in an outage state that started on or after May 1, 2015 and that precluded its eligibility to participate in the Installed Capacity market.

The amount of Unforced Capacity that an Intermittent Power Resource that is participating as part of a Co-located Storage Resource is authorized to supply in the NYCA shall account for reductions to the CSR Scheduling Limits, or the unavailability of the associated facilities, in accordance with ISO Procedures.

Until the Capability Year that begins in May 2024, the amount of Unforced Capacity that each Limited Control Run-of-River Hydro Resource is authorized to provide in the NYCA shall be determined separately for Summer and Winter Capability Periods as the rolling average of the hourly net Energy provided by each such Resource during the 20 highest NYCA integrated real-time load hours in each of the five previous Summer or Winter Capability Periods, as appropriate, stated in megawatts. Except as provided in Section 5.12.6.2.1 of this Services Tariff, for a Limited Control Run-of-River Hydro Resource in an outage state that started on or after May 1, 2015 and that precluded its eligibility to participate in the Installed Capacity market

during one of the 20 highest NYCA integrated real-time load hours in any one of the five previous Summer or Winter Capability Periods, the ISO shall replace that Winter or Summer Capability Period, as appropriate, with the next most recent Winter or Summer Capability Period such that the rolling average of the hourly net Energy provided by each such Resource shall be calculated from the 20 highest NYCA integrated real-time load hours in the five most recent prior Summer or Winter Capability Periods in which the Resource was not in an outage state that precluded its eligibility to participate in the Installed Capacity market on one of the 20 highest NYCA integrated real-time load hours in that Capability Period.

Prior to Capability Year beginning May 1, 2021, the ISO shall calculate separate Summer and Winter Capability Period Unforced Capacity values for each Generator, System Resource, Special Case Resource, Energy Limited Resource, and municipally owned generation and update them periodically using a twelve-month calculation. Starting with the Capability Year beginning May 1, 2021, the ISO shall calculate separate Summer and Winter Capability Period Unforced Capacity values for each Special Case Resource and update them periodically using a twelve-month calculation in accordance with ISO Procedures. Starting with the Capability Year beginning May 1, 2021, the calculation for each Generator, System Resource, Energy Limited Resource, and municipally owned generation will use the months comprising the two most recent like Capability Periods in accordance with formulae provided in the ISO Procedures; provided, however, except as provided in Section 5.12.6.2.1 of this Services Tariff, for a Generator in an outage state that started on or after May 1, 2015 and that precluded its eligibility to participate in the Installed Capacity market at any time during any month from which GADS or other operating data would otherwise be used to calculate an individual Equivalent Demand Forced Outage Rate, the ISO shall replace such month's GADS or other operating data with GADS or

other operating data from the most recent like month in which the Generator was not in an outage state that precluded its eligibility to participate in the Installed Capacity market.

The ISO shall calculate separate Summer and Winter Capability Period Unforced Capacity values for Energy Storage Resources and individual Distributed Energy Resources and update them seasonally as described in ISO Procedures.

The ISO shall calculate separate Summer and Winter Capability Period Unforced Capacity values for Intermittent Power Resources and update them seasonally as described in ISO Procedures.

The amount of Unforced Capacity that each Behind-the-Meter Net Generation Resource is authorized to supply in the NYCA shall be its Net-UCAP. Net-UCAP is the lesser of (i) the ISO's calculation of the Generator of the Behind-the-Meter Net Generation Resource Adjusted DMGC multiplied by one minus its Equivalent Demand Forced Outage Rate, and then decreased by its Adjusted Host Load translated into Unforced Capacity terms consistent with Section 5.11.1 of this Tariff, and (ii) the Resource's Net-ICAP.

#### **5.12.6.2.1 Exceptions**

A Resource returning to the Energy market after taking an outage that precluded its participation in the Installed Capacity market and which returns with modifications to its operating characteristics determined by the ISO to be material and which, therefore, requires the submission of a new Interconnection Request will receive, as the initial derating factor for calculation of the Resource's Unforced Capacity upon its return to service, the derating factor it would have received as a newly connecting unit in lieu of a derating factor developed from unit-specific data. A Resource returning to the Energy market after taking an outage that precluded its participation in the Installed Capacity market and which, upon its return, uses as its primary

fuel a fuel not previously used at the facility for any purpose other than for ignition purposes will receive, as the initial derating factor for calculation of the Resource's Unforced Capacity upon its return to service, the default derating factor in lieu of a derating factor developed from unit-specific data even if the modifications to allow use of a new primary fuel are not material and do not require the submission of a new Interconnection Request.

This Section 5.12.6.2.1 shall apply to a Resource returning to the Energy market after taking an outage that started on or after May 1, 2015 and that precluded its participation in the Installed Capacity market.

#### **5.12.6.3 Default Unforced Capacity**

In its calculation of Unforced Capacity, the ISO shall deem a Resource to be completely forced out for each month for which the Resource has not submitted its Operating Data in accordance with Section 5.12.5 of this Tariff and the ISO Procedures. A Resource that has been deemed completely forced out for a particular month may submit new Operating Data, for that month, to the ISO at any time. The ISO will use such new Operating Data when calculating, in a timely manner in accordance with the ISO Procedures, an Unforced Capacity value for the Resource.

Upon a showing of extraordinary circumstances, the ISO retains the discretion to accept at any time Operating Data which have not been submitted in a timely manner, or which do not fully conform with the ISO Procedures.

#### **5.12.6.4 Exception for Certain Equipment Failures**

When a Generator, Special Case Resource, Energy Limited Resource, or System Resource is forced into an outage by an equipment failure that involves equipment located on the high voltage side of the electric network beyond the step-up transformer, and including such

step-up transformer, the outage will not be counted for purposes of calculating that Resource's Equivalent Demand Forced Outage Rate.

#### **5.12.6.5    Unforced Capacity, Outage Data and Operational Information Associated with External-to-ROS Deliverability Rights**

The ISO shall calculate the availability of the External interface associated with each project granted EDRs, in accordance with ISO Procedures. The availability factor (percentage) of the interface will be used to reduce the amount of EDRs for which Unforced Capacity may be offered. This calculation is distinct from and in addition to the calculation the ISO performs for each Installed Capacity Resource qualified for use with EDRs.

#### **5.12.7      Availability Requirements**

Subsequent to qualifying, each Installed Capacity Supplier shall, except as noted in Section 5.12.11 of this Tariff, on a daily basis: (i) schedule a Bilateral Transaction; (ii) Bid Energy in each hour of the Day-Ahead Market in accordance with the applicable provisions of Section 5.12.1 of this Tariff; or (iii) notify the ISO of any outages.

Until the Capability Year that begins in May 2024, Installed Capacity Suppliers with Energy Duration Limitations corresponding to a Duration Adjustment Factor, as described in Section 5.12.14 below, must on a daily basis during the Peak Load Window and for the number of consecutive hours that correspond to its Energy Duration Limitation, or for the entirety of the Peak Load Window for an Energy Storage Resource or an Aggregation comprised entirely of Energy Storage Resources: (i) schedule a Bilateral Transaction; (ii) Bid Energy in the Day-Ahead Market in accordance with the applicable provisions of Section 5.12.1 of this Tariff; or (iii) notify the ISO of any outages.

Starting with the Capability Year that begins in May 2024, Installed Capacity Suppliers with Energy Duration Limitations less than or equal in length to the number of hours comprising the applicable Peak Load Window, must on a daily basis during the Peak Load Window and for at least the number of consecutive hours that correspond to its Energy Duration Limitation, or for the entirety of the Peak Load Window for an Energy Storage Resource: (i) schedule a Bilateral Transaction; (ii) Bid Energy in the Day-Ahead Market in accordance with the applicable provisions of Section 5.12.1 of this Tariff; or (iii) notify the ISO of any outages. Installed Capacity Suppliers with Energy Duration Limitations greater in length than the number of hours comprising the Peak Load Window, must on a daily basis during the entirety of the applicable Peak Load Window and for additional hours immediately preceding and following the Peak Load Window covering the remaining hours of the Installed Capacity Supplier's Energy Duration Limitation that are not captured in the Peak Load Window, as specified in ISO Procedures: (i) schedule a Bilateral Transaction; (ii) Bid Energy in the Day-Ahead Market in accordance with the applicable provisions of Section 5.12.1 of this Tariff; or (iii) notify the ISO of any outages.

The ISO may adjust the Peak Load Window that Installed Capacity Suppliers with Energy Duration Limitations will be responsible for scheduling, bidding, or notifying for, with scheduling or bidding in hours outside the Peak Load Window in Section 5.12.14. An RMR Generator can only schedule a Bilateral Transaction to the extent expressly authorized in its RMR Agreement.

The total amount of Energy that an Installed Capacity Supplier schedules, bids, or declares to be unavailable on a given day must equal or exceed the Installed Capacity Equivalent of the Unforced Capacity it supplies.

For Energy Storage Resources without an Energy Duration Limitation, the total amount of Energy that is scheduled, Bid, or declared to be unavailable shall also include the maximum of the Energy Storage Resource's (i) negative Installed Capacity Equivalent, or (ii) Lower Operating Limit, such that amount scheduled, Bid, or declared to be unavailable reflects the entire withdrawal to injection operating range. Until the Capability Year that begins in May 2024, Energy Storage Resources with an Energy Duration Limitation must, on a daily basis, and for each hour outside of the Peak Load Window: (i) Bid in the Day-Ahead Market in accordance with the applicable provisions of Section 5.12.1 of this Tariff; or (ii) notify the ISO of any outages, the maximum of the Energy Storage Resource's (a) negative Installed Capacity Equivalent, or (b) Lower Operating Limit. The amount scheduled, Bid, and/or declared to be unavailable must reflect the Energy Storage Resource's entire withdrawal operating range.

Starting with the Capability Year that begins in May 2024, Energy Storage Resources with an Energy Duration Limitation less than or equal in length to the number of hours comprising the applicable Peak Load Window must, on a daily basis, and for each hour beyond the Peak Load Window: (i) Bid in the Day-Ahead Market in accordance with the applicable provisions of Section 5.12.1 of this Tariff; or (ii) notify the ISO of any outages, the maximum of the Energy Storage Resource's (a) negative Installed Capacity Equivalent, or (b) Lower Operating Limit. Energy Storage Resources with an Energy Duration Limitation greater in length than the number of hours comprising the applicable Peak Load Window must, on a daily basis, and for each hour beyond the hours that the Energy Storage Resources must schedule, bid, or declare to be unavailable in accordance with paragraph three of Section 5.12.7 of this Tariff: (i) Bid in the Day-Ahead Market in accordance with the applicable provisions of Section 5.12.1 of this Tariff; or (ii) notify the ISO of any outages, the maximum of the Energy Storage Resource's

(a) negative Installed Capacity Equivalent, or (b) Lower Operating Limit. The amount scheduled, Bid, and/or declared to be unavailable must reflect the Energy Storage Resource's entire withdrawal operating range.

#### **5.12.7.1 Co-located Storage Resource Availability Requirements**

In addition to independently satisfying the requirements of Section 5.12.7 for each Generator that participates in a Co-located Storage Resource, each Installed Capacity Supplier must, on a daily basis, and for each hour of the Day-Ahead Market Day: (i) provide a CSR injection Scheduling Limit; and (ii) notify the ISO of any derate or outage to the interconnection facilities comprising the point of interconnection. The sum of the CSR injection Scheduling Limit and the derate or outage must equal or exceed the sum of the Installed Capacity Equivalent of the Unforced Capacity supplied by the Intermittent Power Resource and the applicable Section 5.12.7 hourly Bid, Schedule, or Notify obligation of the Energy Storage Resource. Each Installed Capacity Supplier must also on a daily basis, and for each hour of the Day-Ahead Market Day: (i) provide a CSR withdrawal Scheduling Limit; and (ii) notify the ISO of any derate or outage to the interconnection facilities comprising the point of interconnection. The sum of the CSR withdrawal Scheduling Limit and the derate or outage must equal or exceed the Energy Storage Resource's applicable 5.12.7 hourly Bid, Schedule, or Notify obligation.

#### **5.12.8 Unforced Capacity Sales**

Each Installed Capacity Supplier will, after satisfying the deliverability requirements set forth in the applicable provisions of Attachment X, Attachment Z and Attachment S to the ISO OATT, be authorized to supply an amount of Unforced Capacity during each Obligation Procurement Period, based on separate seasonal Unforced Capacity calculations performed by



the ISO for the Summer and Winter Capability Periods. Unforced Capacity may be sold in six-month strips, or in monthly, or multi-monthly segments.

External Unforced Capacity (except External Installed Capacity associated with UDRs) may only be offered into Capability Period Auctions or Monthly Auctions for the Rest of State, and ICAP Spot Market Auctions for the NYCA, and may not be offered into a Locality for an ICAP Auction. Bilateral Transactions which certify External Unforced Capacity using Import Rights, EDRs, or External CRIS Rights may not be used to satisfy a Locational Minimum Unforced Capacity Requirement.

UCAP from an RMR Generator may only be offered into the ICAP Spot Market Auction, except and only to the extent that the RMR Agreement expressly permits the RMR Generator's UCAP to be certified in a Bilateral Transaction.

If an Energy Limited Resource's, Generator's, System Resource's, Control Area System Resource's, or Aggregation's DMNC rating, or the DMGC rating of a Generator of a Behind-the-Meter Net Generation Resource, if applicable, is determined to have increased during an Obligation Procurement Period, pursuant to testing procedures described in the ISO Procedures, the amount of Unforced Capacity that it shall be authorized to supply in that or future Obligation Procurement Periods shall also be increased on a prospective basis in accordance with the schedule set forth in the ISO Procedures provided that it first has satisfied the deliverability requirements set forth in the applicable provisions of Attachment X, Attachment Z and Attachment S to the ISO OATT.

New Resources and Resources that have increased their Capacity since the previous Summer Capability Period due to changes in their generating equipment and/or Demand Reduction capabilities may, after satisfying the deliverability requirements set forth in the

applicable provisions of Attachment X, Attachment Z and Attachment S to the ISO OATT, qualify to supply Unforced Capacity on a foregoing basis during the Summer Capability Period based upon a DMNC test, or the DMGC test of a Resource of a Behind-the-Meter Net Generation Resource, that is performed and reported to the ISO after March 1 and prior to the beginning of the Summer Capability Period DMNC Test Period. The Resource will be required to verify the claimed DMNC or DMGC rating by performing an additional test during the Summer DMNC Test Period. Any shortfall between the amount of Unforced Capacity supplied by the Resource for the Summer Capability Period and the amount verified during the Summer DMNC Test Period will be subject to deficiency charges pursuant to Section 5.14.2 of this Tariff. The deficiency charges will be applied to no more than the difference between the Resource's previous Summer Capability Period Unforced Capacity and the amount of Unforced Capacity equivalent the Resource supplied for the Summer Capability Period.

New Resources and Resources that have increased their Capacity since the previous Winter Capability Period due to changes in their generating equipment and/or Demand Reduction capabilities may, after satisfying the deliverability requirements set forth in the applicable provisions of Attachment X, Attachment Z and Attachment S to the ISO OATT, qualify to supply Unforced Capacity on a foregoing basis during the Winter Capability Period based upon a DMNC test, or the DMGC test of a Resource of a Behind-the-Meter Net Generation Resource, that is performed and reported to the ISO after September 1 and prior to the beginning of the Winter Capability Period DMNC Test Period. The Resource will be required to verify the claimed DMNC or DMGC rating by performing an additional test during the Winter Capability Period DMNC Test Period. Any shortfall between the amount of Unforced Capacity certified by the Resource for the Winter Capability Period and the amount

verified during the Winter Capability Period DMNC Test Period will be subject to deficiency charges pursuant to Section 5.14.2 of this Tariff. The deficiency charges will be applied to no more than the difference between the Resource's previous Winter Capability Period Unforced Capacity and the amount of Unforced Capacity equivalent the Resource supplied for the Winter Capability Period.

Any Installed Capacity Supplier, except as noted in Section 5.12.11 of this ISO Services Tariff, which fails on a daily basis to schedule, Bid, or declare to be unavailable in the Day-Ahead Market an amount of Unforced Capacity, expressed in terms of Installed Capacity Equivalent, that it certified for that day, rounded down to the nearest 0.1 MW, or rounded down to the nearest whole MW for an External Installed Capacity Supplier, is subject to sanctions pursuant to Section 5.12.12.2 of this Tariff. If an entity other than the owner of an Energy Limited Resource, Generator, System Resource, Behind-the-Meter Net Generation Resource, Control Area System Resource, or Aggregation that is providing Unforced Capacity is responsible for fulfilling bidding, scheduling, and notification requirements, the owner and that entity must designate to the ISO which of them will be responsible for complying with the scheduling, bidding, and notification requirements. The designated bidding and scheduling entity shall be subject to sanctions pursuant to Section 5.12.12.2 of this ISO Services Tariff.

#### **5.12.9 Sales of Unforced Capacity by System Resources**

Installed Capacity Suppliers offering to supply Unforced Capacity associated with Internal System Resources shall submit for each of their Resources the Operating Data and DMNC testing data or historical data described in Sections 5.12.1 and 5.12.5 of this ISO Services Tariff in accordance with the ISO Procedures. Such Installed Capacity Suppliers will be allowed to supply the amount of Unforced Capacity that the ISO determines pursuant to the

ISO Procedures to reflect the appropriate Equivalent Demand Forced Outage Rate. Installed Capacity Suppliers offering to sell the Unforced Capacity associated with System Resources may only aggregate Resources in accordance with the ISO Procedures.

#### **5.12.10 Curtailment of External Transactions In-Hour**

All Unforced Capacity that is not out of service, or scheduled to serve the Internal NYCA Load in the Day-Ahead Market may be scheduled to supply Energy for use in External Transactions provided, however, that such External Transactions shall be subject to Curtailment within the hour, consistent with ISO Procedures. Such Curtailment shall not exceed the Installed Capacity Equivalent committed to the NYCA.

#### **5.12.11 Responsible Interface Parties, Municipally-Owned Generation, Energy Limited Resources, Intermittent Power Resources, and Installed Capacity Suppliers with Energy Duration Limitations**

##### **5.12.11.1 Responsible Interface Parties**

Responsible Interface Parties may qualify as Installed Capacity Suppliers, without having to comply with the daily bidding, scheduling, and notification requirements set forth in Section 5.12.7 of this Tariff, if their Special Case Resources are available to operate at the direction of the ISO in order to reduce Load from the NYS Transmission System and/or the distribution system for a minimum of four (4) consecutive hours each day, following notice of the potential need to operate twenty-one (21) hours in advance if notification is provided by 3:00 P.M. ET, or twenty-four (24) hours in advance otherwise, and a notification to operate two (2) hours ahead. Special Case Resources will be considered to have a four (4) hour Energy Duration Limitation to align with their obligation. In order for a Responsible Interface Party to enroll an SCR that uses an eligible Local Generator, any amount of generation that can reduce Load from the NYS Transmission System and/or distribution system at the direction of the ISO that was

produced by the Local Generator during the hour coincident with the NYCA or Locality peaks, upon which the LSE Unforced Capacity Obligation of the LSE that serves that SCR is based, must be accounted for when the LSE's Unforced Capacity Obligation for the upcoming Capability Year is established. Responsible Interface Parties must provide this generator data in accordance with ISO Procedures so that the ISO can adjust upwards the LSE Unforced Capacity Obligation to prevent double-counting.

Responsible Interface Parties supplying Unforced Capacity cannot offer the Demand Reduction associated with such Unforced Capacity in the Emergency Demand Response Program. A Resource with sufficient metering to distinguish MWs of Demand Reduction may participate as a Special Case Resource and in the Emergency Demand Response Program provided that the same MWs are not committed both as Unforced Capacity and to the Emergency Demand Response Program.

The ISO will have discretion, pursuant to ISO Procedures, to exempt Local Generators that are incapable of starting in two (2) hours from the requirement to operate on two (2) hours notification. Local Generators that can be operated to reduce Load from the NYS Transmission System and/or distribution system at the direction of the ISO and Loads capable of being interrupted upon demand, that are not available on certain hours or days will be derated by the ISO, pursuant to ISO Procedures, to reflect the Load serving equivalence of the hours they are actually available.

Responsible Interface Parties must submit a Minimum Payment Nomination, in accordance with ISO Procedures. The ISO may request Special Case Resource performance from less than the total number of Special Case Resources within the NYCA or a Load Zone in accordance with ISO Procedures.

Special Case Resources with Local Generators that can be operated to reduce Load from the NYS Transmission System and/or distribution system at the direction of the ISO and Special Case Resources with Loads capable of being interrupted upon demand will be required to comply with verification and validation procedures set forth in the ISO Procedures. Such procedures will not require metering other than interval billing meters on customer Load or testing other than DMNC or sustained disconnect, as appropriate, unless agreed to by the customer.

Each Special Case Resource enrolled in a Capability Period shall demonstrate its maximum enrolled megawatt value at least once in the Capability Period via performance in a mandatory event or performance test in accordance with Installed Capacity Manual Section 4.12. When a Special Case Resource is enrolled in a Capability Period and transitions to become a Distributed Energy Resource within that same Capability Period, it shall demonstrate its maximum enrolled megawatt value via performance in a mandatory event or in a performance test, provided, however, that if no such mandatory event occurs prior to the Special Case Resource becoming a Distributed Energy Resource, the Distributed Energy Resource shall participate in a performance test in accordance with the ISO's Aggregation Manual. Responsible Interface Parties are not eligible to receive Energy payments, as described in this Services Tariff Section 5.12.11.1, for Demand Reductions caused by Distributed Energy Resources performing in a performance test. When a Demand Side Resource that is participating, or has participated, in a DER Aggregation and seeks to become a Special Case Resource, the Resource's Average Coincident Load shall be calculated in accordance with the provisions of Services Tariff Section 5.12.11.1 and its subparts.

Unforced Capacity supplied in a Bilateral Transaction by a Special Case Resource pursuant to this subsection may only be resold if the purchasing entity or the Installed Capacity Marketer has agreed to become a Responsible Interface Party and comply with the ISO notification requirements for Special Case Resources. LSEs and Installed Capacity Marketers may become Responsible Interface Parties and aggregate Special Case Resources and sell the Unforced Capacity associated with them in an ISO-administered auction if they comply with ISO notification requirements for Special Case Resources.

Responsible Interface Parties that were requested to reduce Load in any month shall submit performance data to the NYISO, within 75 days of each called event or test, in accordance with ISO Procedures. Failure by a Responsible Interface Party to submit performance data for any Special Case Resources required to respond to the event or test within the 75-day limit will result in zero performance attributed to those Special Case Resources for purposes of satisfying the Special Case Resource's capacity obligation as well as for determining energy payments. All performance data are subject to audit by the NYISO and its market monitoring unit. If the ISO determines that it has made an erroneous payment to a Responsible Interface Party, the ISO shall have the right to recover it either by reducing other payments to that Responsible Interface Parties or by resolving the issue pursuant to other provisions of this Services Tariff or other lawful means.

Provided the Responsible Interface Party supplies evidence of such reductions in 75 days, the ISO shall pay the Responsible Interface Party that, through their Special Case Resources, caused a verified Load reduction in response to (i) an ISO request to perform due to a forecast reserve shortage (ii) an ISO declared Major Emergency State, (iii) an ISO request to perform made in response to a request for assistance for Load relief purposes or as a result of a Local

Reliability Rule, or (iv) a test called by the ISO, for such Load reduction, in accordance with ISO Procedures. Subject to performance evidence and verification, in the case of a response pursuant to clauses (i), (ii), of (iii) of this subsection, Suppliers that schedule Responsible Interface Parties shall be paid the zonal Real-Time LBMP for the period of requested performance or four (4) hours, whichever is greater, in accordance with ISO Procedures; provided, however, Special Case Resource Capacity shall settle Demand Reductions, in the interval and for the capacity for which Special Case Resource Capacity has been scheduled Day-Ahead to provide Operating Reserves, Regulation Service or Energy, as being provided by a Supplier of Operating Reserves, Regulation Service or Energy.

In the event that a Responsible Interface Party's Minimum Payment Nomination for a Special Case Resource, for the number of hours of requested performance or the minimum four (4) hour period, whichever is greater, exceeds the LBMP revenue received, the Special Case Resource will be eligible for a Bid Production Cost Guarantee to make up the difference, in accordance with Section 4.23 of this Services Tariff and ISO Procedures; provided, however, the ISO shall set to zero the Minimum Payment Nomination for Special Case Resource Capacity in each interval in which such Capacity was scheduled Day-Ahead to provide Operating Reserves, Regulation Service or Energy. Subject to performance evidence and verification, in the case of a response pursuant to clause (iv) of this subsection, payment for participation in tests called by the ISO shall be equal to the zonal Real Time LBMP for the MWh of Energy reduced within the test period.

Transmission Owners that require assistance from enrolled Special Case Resources with Local Generators larger than 100 kW and Special Case Resources with Loads capable of being interrupted upon demand for Load relief purposes or as a result of a Local Reliability Rule, shall



direct their requests for assistance to the ISO for implementation consistent with the terms of this section. Within Load Zone J, participation in response to an ISO request to perform made as a result of a request for assistance from a Transmission Owner for less than the total number of Special Case Resources, for Load relief purposes or as a result of a Local Reliability Rule, in accordance with ISO Procedures, shall be voluntary and the responsiveness of the Special Case Resource shall not be taken into account for performance measurement.

#### **5.12.11.1.1 Special Case Resource Average Coincident Load**

The ISO must receive from the Responsible Interface Party that enrolls a Special Case Resource, the applicable metered Load data required to calculate an ACL for that SCR as provided below and in accordance with ISO Procedures. The ACL shall be computed using the metered Load for the applicable Capability Period SCR Load Zone Peak Hours that indicates the Load consumed by each SCR that is supplied by the NYS Transmission System and/or distribution system and is exclusive of any generation produced by a Local Generator, other behind-the-meter generator, or other supply source located behind the SCR's meter, that served some of the SCR's Load.

Beginning with the Winter 2011-2012 Capability Period and thereafter, the ISO shall use the average of the highest twenty (20) one-hour peak Loads of the SCR taken from the Load data reported for the Capability Period SCR Load Zone Peak Hours during the Prior Equivalent Capability Period, and taking into account the resource's reported verified Load reduction in a Transmission Owner's demand response program in hours coincident with any of these hours, to create a SCR ACL baseline. In addition, beginning with the Summer 2014 Capability Period, the resource's verified Load reduction in either of the ISO's economic demand response programs (the Day Ahead Demand Response Program and the Demand Side Ancillary Services Program)

in hours coincident with any of the applicable Capability Period SCR Load Zone Peak Hours will be taken into account when creating the SCR ACL. For the Day Ahead Demand Response Program, the verified Load reduction that occurred in response to a DADRP schedule shall be added to the Capability Period SCR Load Zone Peak Hour for which the reduction in response to a DADRP schedule occurred. For the Demand Side Ancillary Services Program, the Load value to be used in calculating the ACL for each hour during the Capability Period SCR Load Zone Peak Hours in which a non-zero Base Point Signal the ISO provides to the resource, shall be the greater of (a) the DSASP Baseline MW value in the interval immediately preceding the first non-zero Base Point Signal in the Capability Period SCR Load Zone Peak Hour and (b) the metered Load of the resource as reported by the RIP for the Capability Period SCR Load Zone Peak Hour. When the non-zero Base Point Signal dispatch of a DSASP resource begins in one hour and continues into consecutive hours, and the consecutive hour is identified as being a Capability Period SCR Load Zone Peak Hour, the DSASP Baseline MW value in effect at the beginning of the dispatch of the non-zero Base Point Signal shall be the MW value used for purposes of determining the applicable Load value for that Capability Period SCR Load Zone Peak Hour, in accordance with the preceding sentence. The ISO will post to its website the Capability Period SCR Load Zone Peak Hours for each zone ninety (90) days prior to the beginning of the Capability Period for which the ACL will be in effect.

In the SCR enrollment file uploaded by the RIP each month within the Capability Period, among other required information, the RIP shall provide the SCR's metered Load values for the applicable Capability Period SCR Load Zone Peak Hours necessary to compute the ACL for each SCR.

The exception to this requirement to report the required metered Load data for the ACL, when enrolling a SCR prior to the Summer 2014 Capability Period, is if (i) the SCR has not previously been enrolled with the ISO and (ii) never had interval metering Load data for each month in the Prior Equivalent Capability Period needed to compute the SCR's ACL. Beginning with the Summer 2014 Capability Period, the exception to this requirement to report the required metered Load data for the ACL, is dependent upon one or more of the eligibility conditions for SCR enrollment with a Provisional ACL provided in Section 5.12.11.1.2 of this Services Tariff and ISO Procedures. For SCRs that meet the criteria to enroll with a Provisional ACL, the ISO must receive from the RIP a Provisional ACL as provided in Section 5.12.11.1.2 of this Services Tariff and in accordance with ISO Procedures.

Beginning with the Summer 2014 Capability Period, in addition to the requirement for RIPs to report each SCR's metered Load values that occurred during the Capability Period SCR Load Zone Peak Hours, in accordance with this Services Tariff and ISO Procedures during the enrollment process, any qualifying increase in a SCR's Load that will be supplied by the NYS Transmission System and/or distribution system may be reported as an Incremental ACL, subject to the limitations and verification reporting requirements provided in Section 5.12.11.1.5 of this Services Tariff and in accordance with ISO Procedures. Incremental ACL values must be reported using the required enrollment file that may be uploaded by the RIP during each month's enrollment period. RIPs may not report Incremental ACL values for any SCRs that are enrolled in the Capability Period with a Provisional ACL.

A reduction in a SCR's Load that is supplied by the NYS Transmission System and/or distribution system and meets the criteria for a SCR Change of Status must be reported as a SCR

Change of Status as provided by Section 5.12.11.1.3 of this Services Tariff and in accordance with ISO Procedures.

The ACL is the basis for the upper limit of ICAP, except in circumstances when the SCR has reported a SCR Change of Status or reported an Incremental ACL pursuant to Sections 5.12.11.1.3 and 5.12.11.1.5 of this Services Tariff. The basis for the upper limit of ICAP for a SCR that has experienced a SCR Change of Status or reported an Incremental ACL shall be the Net ACL.

#### **5.12.11.1.2 Use of a Provisional Average Coincident Load**

Prior to the Summer 2014 Capability Period, as provided in Section 5.12.11.1.1 of this Services Tariff, if a new Special Case Resource has not previously been enrolled with the ISO and never had interval billing meter data from the Prior Equivalent Capability Period, its Installed Capacity value shall be its Provisional Average Coincident Load for the Capability Period for which the new SCR is enrolled. The Provisional ACL may be applicable to a new SCR for a maximum of three (3) consecutive Capability Periods, beginning with the Capability Period in which the SCR is first enrolled.

Beginning with the Summer 2014 Capability Period, a SCR may be enrolled using a Provisional ACL in lieu of an ACL when one of the following conditions has been determined by the ISO to apply: (i) the SCR has not previously been enrolled with the ISO for the seasonal Capability Period for which the SCR enrollment with a Provisional ACL is intended, (ii) the SCR was enrolled with a Provisional ACL in the Prior Equivalent Capability Period and was required to report fewer than twenty (20) hours of metered Load verification data that correspond with the Capability Period SCR Load Zone Peak Hours based on the meter installation date of the SCR, (iii) the RIP attempting to enroll the SCR with a Provisional ACL is not the same RIP

that enrolled the SCR in the Prior Equivalent Capability Period and interval billing meter data for the SCR from the Prior Equivalent Capability Period is not obtainable by the enrolling RIP and not available to be provided to the enrolling RIP by the ISO. The Provisional ACL may be applicable to a SCR for a maximum of three (3) consecutive Capability Periods when enrolled with the same RIP, beginning with the Capability Period in which the SCR is first enrolled by the RIP.

A SCR enrolled in the Capability Period with a Provisional ACL may not be enrolled by another RIP for the remainder of the Capability Period and the Provisional ACL value shall apply to the resource for the entire Capability Period for which the value is established.

The Provisional ACL is the RIP's forecast of the SCR's ACL and shall be the basis for the upper limit of ICAP for which the RIP may enroll the SCR during the Capability Period.

Any SCR enrolled with a Provisional ACL shall be subject to actual in-period verification. A Verified ACL shall be calculated by the ISO using the top twenty (20) one-hour peak Loads reported for the SCR from the Capability Period SCR Load Zone Peak Hours that are applicable to verify the Provisional ACL in accordance with ISO Procedures and taking into account the resource's reported verified Load reductions in a Transmission Owner's demand response program that are coincident with any of the applicable Capability Period SCR Load Zone Peak Hours. In addition, beginning with the Summer 2014 Capability Period, the resource's verified Load reduction in either of the ISO's economic demand response programs (the Day Ahead Demand Response Program and the Demand Side Ancillary Services Program) in hours coincident with any of the applicable Capability Period SCR Load Zone Peak Hours will be taken into account when creating the SCR Verified ACL. For the Day Ahead Demand Response Program, the verified Load reduction that occurred in response to a DADRP schedule

shall be added to the Capability Period SCR Load Zone Peak Hour for which the reduction in response to a DADRP schedule occurred. For the Demand Side Ancillary Services Program, the Load value to be used in calculating the Verified ACL for each hour during the Capability Period SCR Load Zone Peak Hours in which a non-zero Base Point Signal the ISO provides to the resource, shall be the greater of (a) the DSASP Baseline MW value in the interval immediately preceding the first non-zero Base Point Signal in the Capability Period SCR Load Zone Peak Hour and (b) the metered Load of the resource as reported by the RIP for the Capability Period SCR Load Zone Peak Hour. When the non-zero Base Point Signal dispatch of a DSASP resource begins in one hour and continues into consecutive hours, and the consecutive hour is identified as being a Capability Period SCR Load Zone Peak Hour, the DSASP Baseline MW value in effect at the beginning of the dispatch of the non-zero Base Point Signal shall be the MW value used for purposes of determining the applicable Load value for that Capability Period SCR Load Zone Peak Hour, in accordance with the preceding sentence.

Following the Capability Period for which a resource with a Provisional ACL was enrolled, the RIP shall provide to the ISO the metered Load data required to compute the Verified ACL of the resource. The ISO shall compare the Provisional ACL to the Verified ACL to determine, after applying the applicable performance factor, whether the UCAP of the SCR had been oversold and whether a shortfall has occurred as provided under Section 5.14.2 of this Services Tariff. If the RIP fails to provide verification data required to compute the Verified ACL of the resource enrolled with a Provisional ACL by the deadline: (a) the Verified ACL of the resource shall be set to zero for each Capability Period in which the resource with a Provisional ACL was enrolled and verification data was not reported, and (b) the RIP may be subject to penalties in accordance with this Services Tariff.

### **5.12.11.1.3 Reporting a SCR Change of Load or SCR Change of Status**

#### **5.12.11.1.3.1 SCR Change of Load**

The Responsible Interface Party shall report any SCR Change of Load in accordance with ISO Procedures. The RIP is required to document the SCR Change of Load and when the total Load reduction for SCRs that have a SCR Change of Load within the same Load Zone is greater than or equal to 5 MWs, the RIP shall report the SCR Change of Load for each SCR in accordance with ISO Procedures.

#### **5.12.11.1.3.2 SCR Change of Status**

The Responsible Interface Party shall report any SCR Change of Status in accordance with ISO Procedures. The ISO shall adjust the reported ACL of the SCR for a reported SCR Change of Status to the Net ACL, for all prospective months to which the SCR Change of Status is applicable. When a SCR Change of Status is reported under clause (i), (ii) or (iii) within the definition of a Qualified Change of Status Condition and the SCR has sold capacity, the SCR shall be evaluated for a potential shortfall under Section 5.14.2 of this Services Tariff. Failure by the RIP to report a SCR Change of Status shall be evaluated as a potential shortfall under Section 5.14.2 of this Service Tariff and evaluated for failure to report under Section 5.12.12.2 of this Services Tariff.

Beginning with the Summer 2014 Capability Period, SCRs that were required to perform in the first performance test in the Capability Period in accordance with ISO Procedures and that subsequently report or change a reported SCR Change of Status value after the first performance test in the Capability Period shall be required to demonstrate the performance of the resource against the Net ACL value in the second performance test in the Capability Period. The exceptions to this provision occur when a SCR's eligible Installed Capacity is set to zero

throughout the period of the SCR Change of Status, when a SCR's eligible Installed Capacity is decreased by at least the same kW value as the reported SCR Change of Status, or if a SCR Change of Status is reported, and prior to the second performance test, the SCR returns to the full applicable ACL enrolled prior to the SCR Change of Status. Performance in both performance tests shall be used in calculation of the resource's performance factors and all associated performance factors, deficiencies and penalties. If the RIP fails to report the performance for a resource that was required to perform in the second performance test in the Capability Period: (a) the resource will be assigned a performance of zero (0) for the test hour, and (b) the RIP shall be evaluated for failure to report under Section 5.12.12.2 of this Services Tariff.

#### **5.12.11.1.4 Average Coincident Load of an SCR Aggregation**

The ISO shall compute the Average Coincident Load of an SCR Aggregation each month in accordance with ISO Procedures.

#### **5.12.11.1.5 Use of an Incremental Average Coincident Load**

Beginning with the Summer 2014 Capability Period, a Responsible Interface Party may report any qualifying increase to a Special Case Resource's Average Coincident Load as Incremental Average Coincident Load in the RIP enrollment file upload and in accordance with this Services Tariff and ISO Procedures.

For SCRs with a total Load increase equal to or greater than twenty (20) percent and less than thirty (30) percent of the applicable ACL, the RIP may enroll the SCR with an Incremental ACL provided that the eligible Installed Capacity does not increase from the prior enrollment months within the same Capability Period and prior to enrollment with an Incremental ACL. If the SCR is enrolled with an Incremental ACL and it is the first month of the SCR's enrollment in the applicable Capability Period, the enrolled eligible Installed Capacity value shall not exceed



the maximum eligible Installed Capacity of the SCR from the Prior Equivalent Capability Period. When no enrollment exists for the SCR in the Prior Equivalent Capability Period and it is the first month of the SCR's enrollment in the applicable Capability Period, the enrolled eligible Installed Capacity of the SCR shall not exceed the ACL calculated from the Capability Period SCR Load Zone Peak Hours. For SCRs with a total Load increase equal to or greater than thirty (30) percent of the applicable ACL, the RIP may enroll the SCR with an Incremental ACL and an increase to the SCR's eligible Installed Capacity and is required to test as described in this section of the Service Tariff.

The ISO shall adjust the ACL of the SCR for an Incremental ACL for all months for which the Incremental ACL is reported by the RIP. For resources reporting an Incremental ACL, the Net ACL shall equal the enrolled ACL plus the reported Incremental ACL less any applicable SCR Change of Status and shall be the basis for the upper limit of ICAP for which the RIP may enroll the SCR during the Capability Period.

An Incremental ACL is a discrete change to the SCR operations that is expected to result in an increase to the Load that the SCR will consume from the NYS Transmission System and/or distribution system. It is not available to account for random fluctuations in Load, such as those caused by weather or other seasonal Load variations. Therefore, the ACL of a SCR may only be increased once per Capability Period and the amount of the increase enrolled must remain the same for all months for which the Incremental ACL is reported. A SCR enrolled in the Capability Period with an Incremental ACL may not be enrolled by another RIP for the remainder of the Capability Period. A SCR enrolled in the Capability Period with a Provisional ACL is not eligible to enroll with an Incremental ACL.

Following the Capability Period for which a SCR has been enrolled with an Incremental ACL, the RIP shall provide the hourly metered Load verification data that corresponds to the Monthly SCR Load Zone Peak Hours identified by the ISO for all months in which an Incremental ACL value was reported for the SCR. For each month for which verification data was required to be reported, the ISO shall calculate a Monthly ACL that will be used in the calculation of a Verified ACL. The Monthly ACL shall equal the average of the SCR's top twenty (20) one-hour metered Load values that correspond with the applicable Monthly SCR Load Zone Peak Hours, and taking into account (i) the resource's reported verified Load reduction in a Transmission Owner's demand response program in hours coincident with any of these hours. and (ii) the resource's verified Load reduction in either of the ISO's economic demand response programs (the Day Ahead Demand Response Program and the Demand Side Ancillary Services Program) in hours coincident with any of these hours. For the Day Ahead Demand Response Program, the verified Load reduction that occurred in response to a DADRP schedule shall be added to the Monthly SCR Load Zone Peak Hour for which the reduction in response to a DADRP schedule occurred. For the Demand Side Ancillary Services Program, the Load value to be used in calculating the Monthly ACL for each hour during the Monthly SCR Load Zone Peak Hours in which a non-zero Base Point Signal the ISO provides to the resource, shall be the greater of (a) the DSASP Baseline MW value in the interval immediately preceding the first non-zero Base Point Signal in the Monthly SCR Load Zone Peak Hour and (b) the metered Load of the resource as reported by the RIP for the Monthly SCR Load Zone Peak Hour. When the non-zero Base Point Signal dispatch of a DSASP resource begins in one hour and continues into consecutive hours, and the consecutive hour is identified as being a Monthly SCR Load Zone Peak Hour, the DSASP Baseline MW value in effect at the beginning of the dispatch

of the non-zero Base Point Signal shall be the MW value used for purposes of determining the applicable Load value for that Monthly SCR Load Zone Peak Hour, in accordance with the preceding sentence. The Verified ACL shall be the average of the two (2) highest Monthly ACLs during the Capability Period in which the SCR was enrolled with an Incremental ACL within the same Capability Period.

For any month in which verification data for the Incremental ACL is required but not timely submitted to the ISO in accordance with ISO procedures, the ISO shall set the metered Load values to zero. When a Monthly ACL is set to zero, the Verified ACL will be calculated as the average of: a) the two (2) highest Monthly ACLs during the Capability Period in which the SCR was enrolled with an Incremental ACL within the same Capability Period; plus b) the Monthly ACLs for all months in which the SCR was enrolled within the same Capability Period with an Incremental ACL in the Capability Period in which the RIP failed to provide the minimum verification data required. In addition, a RIP may be subject to a penalty for each month for which verification data was required and not reported in accordance with this Services Tariff.

For each SCR that is enrolled with an Incremental ACL, the ISO shall compare the Net ACL calculated from the resource enrollment (ACL plus Incremental ACL less any applicable SCR Change of Status) to the Verified ACL calculated for the SCR to determine if the RIP's use of an Incremental ACL may have resulted in a shortfall pursuant to Section 5.14.2.

A Special Case Resource that was required to perform in the first performance test in the Capability Period in accordance with ISO Procedures and was subsequently enrolled using an Incremental ACL and an increase in the amount of Installed Capacity that the SCR is eligible to sell, shall be required to demonstrate performance against the maximum amount of eligible

Installed Capacity reported for the SCR in the second performance test in the Capability Period. Performance in this test shall be measured from the Net ACL. Performance in both performance tests shall be used in calculation of the resource's performance factor and all associated performance factors, deficiencies and penalties. If the RIP fails to report the performance for a resource that was required to perform in the second performance test in the Capability Period: (a) the resource will be assigned a performance of zero (0) for the test hour, and (b) the RIP shall be evaluated for failure to report under Section 5.12.12.2 of this Services Tariff.

#### **5.12.11.2 Existing Municipally-Owned Generation**

A municipal utility that owns existing generation in excess of its Unforced Capacity requirement, net of NYPA-provided Capacity may, consistent with the deliverability requirements set forth in Attachment X and Attachment S to the ISO OATT, offer the excess Capacity for sale as Installed Capacity provided that it is willing to operate the generation at the ISO's request, and provided that the Energy produced is deliverable to the New York State Power System. Such a municipal utility shall not be required to comply with the requirement of Section 5.12.7 of this Tariff that an Installed Capacity Supplier bid into the Energy market or enter into Bilateral Transactions. Municipal utilities shall, however, be required to submit their typical physical operating parameters, such as their start-up times, to the ISO. This subsection is only applicable to municipally-owned generation in service or under construction as of December 31, 1999.

#### **5.12.11.3 Energy Limited Resources**

An Energy Limited Resource or an Aggregation that is comprised entirely of a single Resource-type Energy Limited Resource may, consistent with the deliverability requirements set forth in Attachment X and Attachment S to the ISO OATT, qualify as an Installed Capacity

Supplier if it Bids its Installed Capacity Equivalent into the Day-Ahead Market each day and if it is able to provide the Energy equivalent of the Unforced Capacity for the number of consecutive hours that correspond to its Energy Duration Limitation each day. Energy Limited Resources or Aggregations that are Energy Limited Resources shall also Bid a Normal Upper Operating Limit or Emergency Upper Operating Limit, as applicable, designating their desired operating limits. Energy Limited Resources or Aggregations that are Energy Limited Resources that are not scheduled in the Day-Ahead Market to operate at a level above their bid-in upper operating limit, may be scheduled in the RTC, or may be called in real-time pursuant to a manual intervention by ISO dispatchers, who will account for the fact that Energy Limited Resource or an Aggregation that is an Energy Limited Resource may not be capable of responding.

#### **5.12.11.4 Intermittent Power Resources**

Intermittent Power Resources that depend upon wind or solar as their fuel or Aggregations that are entirely comprised of Intermittent Power Resources that depend on the same type of fuel, with that fuel being wind or solar, may qualify as Installed Capacity Suppliers, without having to comply with the daily bidding and scheduling requirements set forth in Section 5.12.7 of this Tariff, and may, consistent with the deliverability requirements set forth in Attachment X and Attachment S to the ISO OATT, claim up to their nameplate Capacity as Installed Capacity. To qualify as Installed Capacity Suppliers, such Intermittent Power Resources shall comply with the requirements of Section 5.12.1 and the outage notification requirements of 5.12.7 of this Tariff.

#### **5.12.11.5 Installed Capacity Suppliers with an Energy Duration Limitation**

A Resource with an Energy Duration Limitation may, consistent with the deliverability requirements set forth in Attachment X and Attachment S to the ISO OATT, qualify as an

Installed Capacity Supplier with an Energy Duration Limitation if it Bids its Installed Capacity Equivalent into the Day-Ahead Market each day and if it is able to provide the Energy equivalent of the Unforced Capacity for the number of consecutive hours that correspond to its Energy Duration Limitation each day. Installed Capacity Suppliers with an Energy Duration Limitation shall also Bid a Normal Upper Operating Limit or Emergency Upper Operating Limit, as applicable, designating their desired operating limits. Installed Capacity Suppliers with an Energy Duration Limitation that are not scheduled in the Day-Ahead Market to operate at a level above their bid-in upper operating limit, may be scheduled in the RTC, or may be called in real-time pursuant to a manual intervention by ISO dispatchers, who will account for the fact that Installed Capacity Suppliers with an Energy Duration Limitation may not be capable of responding.

#### **5.12.12 Sanctions Applicable to Installed Capacity Suppliers and Transmission Owners**

Pursuant to this section, the ISO may impose financial sanctions on Installed Capacity Suppliers and Transmission Owners that fail to comply with certain provisions of this Tariff. The ISO shall notify Installed Capacity Suppliers and Transmission Owners prior to imposing any sanction and shall afford them a reasonable opportunity to demonstrate that they should not be sanctioned and/or to offer mitigating reasons why they should be subject to a lesser sanction. The ISO may impose a sanction lower than the maximum amounts allowed by this section at its sole discretion. Installed Capacity Suppliers and Transmission Owners may challenge any sanction imposed by the ISO pursuant to the ISO Dispute Resolution Procedures.

Any sanctions collected by the ISO pursuant to this section will be applied to reduce the Rate Schedule 1 charge under this Tariff.

#### **5.12.12.1 Sanctions for Failing to Provide Required Information**

If (i) an Installed Capacity Supplier fails to provide the information required by Sections 5.12.1.1, 5.12.1.2, 5.12.1.3, 5.12.1.4, 5.12.1.7 or 5.12.1.8 of this Tariff in a timely fashion, or (ii) a Supplier of Unforced Capacity from External System Resources located in an External Control Area or from a Control Area System Resource that has agreed not to Curtail the Energy associated with such Installed Capacity, or to afford it the same Curtailment priority that it affords its own Control Area Load, fails to provide the information required for certification as an Installed Capacity Supplier established in the ISO Procedures, the ISO may take the following actions: On the first day that required information is late, the ISO shall notify the Installed Capacity Supplier that required information is past due and that it reserves the right to impose financial sanctions if the information is not provided by the end of the following day. Starting on the third day that the required information is late, the ISO may impose a daily financial sanction of up to the higher of \$500 or \$5 per MW of Installed Capacity that the Generator, System Resource, or Control Area System Resource in question is capable of providing. Starting on the tenth day that the required information is late, the ISO may impose a daily financial sanction of up to the higher of \$1000 or \$10 per MW of Installed Capacity that the Generator, System Resource, or Control Area System Resource in question is capable of providing.

If an Installed Capacity Supplier fails to provide the information required by Subsection 5.12.1.5 of this Tariff in a timely fashion, the ISO may take the following actions: On the first calendar day that required information is late, the ISO shall notify the Installed Capacity Supplier that required information is past due and that it reserves the right to impose financial sanctions if the information is not provided by the end of that first calendar day. Starting on the second calendar day that the required information is late, the ISO may impose a daily financial sanction

up to the higher of \$500 or \$5 per MW of Installed Capacity that the Generator, System Resource, or Control Area System Resource in question is capable of providing.

If a TO fails to provide the information required by Subsection 5.11.3 of this Tariff in a timely fashion, the ISO may take the following actions: On the first day that required information is late, the ISO shall notify the TO that required information is past due and that it reserves the right to impose financial sanctions if the information is not provided by the end of the following day. Starting on the third day that the required information is late, the ISO may impose a daily financial sanction up to \$5,000 a day. Starting on the tenth day that required information is late, the ISO may impose a daily financial sanction up to \$10,000.

#### **5.12.12.2 Sanctions for Failing to Comply with Scheduling, Bidding, and Notification Requirements**

On any day in which an Installed Capacity Supplier fails to comply with the scheduling, bidding, or notification requirements of Sections 5.12.1.6 or 5.12.1.10, or with Section 5.12.7 of this Tariff, or in which a Supplier of Installed Capacity from External System Resources or Control Area System Resources located in an External Control Area that has agreed not to Curtail the Energy associated with such Installed Capacity, or to afford it the same Curtailment priority that it affords its own Control Area Load, fails to comply with scheduling, bidding, or notification requirements for certification as an Installed Capacity Supplier established in the ISO Procedures, the ISO may impose a financial sanction up to the product of a deficiency charge (pro-rated on a daily basis for Installed Capacity Suppliers) and the maximum number of MWs that the Installed Capacity Supplier failed to schedule or Bid in any hour in that day provided, however, that no financial sanction shall apply to any Installed Capacity Supplier who demonstrates that the Energy it schedules, bids, or declares to be unavailable on any day is not less than the Installed Capacity that it supplies for that day rounded down to the nearest 0.1 MW,



or rounded down to the nearest whole MW for an External Installed Capacity Supplier. For Installed Capacity Suppliers that have an Energy Duration Limitation, the deficiency charge will be pro-rated on a daily basis only taking into account hours during the Peak Load Window corresponding with the Resource's Energy Duration Limitation obligation, excluding Energy Storage Resources which will be evaluated over all hours during the Peak Load Window, and the maximum number of MWs that the Installed Capacity Supplier with an Energy Duration Limitation failed to schedule or Bid in any hour in the Peak Load Window of that day provided, however, that no financial sanction shall apply to any Installed Capacity Supplier that demonstrates that the Energy it schedules, bids, or declares to be unavailable on any day is not less than the Installed Capacity that it supplies for that day rounded down to the nearest 0.1 MW. The deficiency charge may be up to one and one-half times the applicable Market-Clearing Price of Unforced Capacity determined in the ICAP Spot Market Auction corresponding to where the Installed Capacity Supplier's capacity cleared, and for each month in which the Installed Capacity Supplier is determined not to have complied with the foregoing requirements.

In addition to the financial sanctions described above, the Installed Capacity Supplier offering a Generator that participates as a Co-located Storage Resource may also be subject to a financial sanction for failing to comply with the requirements of Services Tariff Section 5.12.7.1. When such Installed Capacity Supplier fails to comply with Services Tariff Section 5.12.7.1, the ISO may impose a financial sanction up to the product of a deficiency charge and the difference between Installed Capacity Equivalent of the Unforced Capacity of the Generator and the CSR Scheduling Limit. If an Installed Capacity Supplier is subject to financial sanctions for its failure to comply with Services Tariff Section 5.12.7.1 is also subject to a penalty under this Section for failing to comply with the scheduling, bidding, or notification requirements of Sections 5.12.1.6

or 5.12.1.10, or with Section 5.12.7 of this Tariff for the same Day-Ahead Market hour, the NYISO shall assess only the greater of the two sanctions for that hour.

In addition, if any Installed Capacity Supplier fails to comply with the scheduling, bidding, or notification requirements of Sections 5.12.1.6 or 5.12.1.10, or with Section 5.12.7 of this Tariff, or if an Installed Capacity Supplier of Unforced Capacity from an External Control Area fails to comply with the scheduling, bidding, or notification requirements for certification as an Installed Capacity Supplier established in the ISO Procedures, during an hour in which the ISO curtails Exports associated with NYCA Installed Capacity Suppliers consistent with Section 5.12.10 of this Tariff and with ISO Procedures, then the ISO may impose an additional financial sanction equal to the product of the number of MWs the Installed Capacity Supplier failed to schedule during that hour and the corresponding Real-Time LBMP at the applicable Proxy Generator Bus.

To the extent an Installed Capacity Supplier of Unforced Capacity from an External Control Area or an External Generator associated with an Unforced Capacity sale using UDRs or EDRs fails to comply with Section 5.12.1.10 of this Tariff, the Installed Capacity Supplier or External Generator associated with an Unforced Capacity sale using UDRs or EDRs shall be subject to a deficiency charge calculated in accordance with the formula set forth below for each Obligation Procurement Period:

$$Deficiency\ charge = 1.5 * PRICE * \left( \frac{1000kW}{1MW} \right) * \left( \frac{\sum_{n=1}^N (\max (ICAP_n^{MWh} - SRE_n^{MWh}, 0))}{N} \right)$$

Where:

N = total number of hours of SRE calls during the relevant Obligation Procurement Period

PRICE = ICAP Spot Market Auction clearing price for the relevant Obligation

## Procurement Period

$ICAP_n^{MWh}$  = for each hour  $n$  of SRE calls during the relevant Obligation Procurement

Period, the ICAP equivalent of the UCAP sold from the External Installed Capacity Supplier that is a Generator, or the External Generator associated with an Unforced Capacity sale using UDRs or EDRs, or the Control Area System Resource in MWh, minus (x) any MWh that are unavailable due to an outage as defined in the ISO Procedures, or due to physical operating limitations affecting the External Installed Capacity Supplier that is a Generator, or the External Generator associated with an Unforced Capacity sale using UDRs or EDRs, or due to other operational issues that the ISO determines to be outside the Installed Capacity Supplier's control, and (y) any MWh that were Bid as Imports to the NYCA at the appropriate Proxy Generator Bus at a price that was designed to ensure the Import was scheduled to the greatest extent possible, but that were not scheduled by the ISO

$SRE_n^{MWh}$  = MWh provided to the NYCA at the appropriate Proxy Generator Bus from the External Installed Capacity Supplier that is a Generator, or the External Generator associated with an Unforced Capacity sale using UDRs or EDRs, or the Control Area System Resource, during each hour  $n$  of SRE calls during the relevant Obligation Procurement Period.

If an Installed Capacity Supplier's failure to fully comply with this Tariff would, in addition to being assessed a deficiency charge calculated in accordance with the formula set forth above, also permit the ISO to impose a different deficiency charge or a financial sanction under this Section 5.12.12.2, or to impose a deficiency charge for a shortfall under Section 5.14.2.2 of

this Tariff, then the ISO shall only impose the penalty for failure to comply with Section 5.12.1.10 of this Tariff on the Installed Capacity Supplier for the hour(s) in which the Installed Capacity Supplier failed to meet its obligations under Section 5.12.1.10 of this Tariff.

If the Installed Capacity Supplier is a Responsible Interface Party that enrolled a SCR with an Incremental ACL in accordance with this Services Tariff, and also reported an increase to the Installed Capacity the SCR has eligible to sell after the first performance test in the Capability Period, the ISO may impose an additional financial sanction due to the failure of the RIP to report the required performance of the SCR against the Net ACL value in the second performance test in the Capability Period. This sanction shall be the value of the reported increase in the eligible Installed Capacity associated with the SCR that was sold by the RIP in each month of the Capability Period, during which the reported increase was in effect, multiplied by up to one and one-half times the applicable Market-Clearing Price of Unforced Capacity determined in the ICAP Spot Market Auction for each such month.

If the Installed Capacity Supplier is a Responsible Interface Party, and the Average Coincident Load of the Special Case Resource has been decreased after the first performance test in the Capability Period, due to a SCR Change of Status in accordance with this Services Tariff and ISO Procedures, the ISO may impose an additional financial sanction resulting from the failure of the RIP to report the required performance of the SCR against the Net ACL value of the SCR when the SCR was required to perform in the second performance test in the Capability Period in accordance with Section 5.12.11.1.3.2 of this Services Tariff. This sanction shall be the value of the Unforced Capacity equivalent of the SCR Change of Status MW reported for the SCR during the months for which the SCR was enrolled with a SCR Change of Status and was required to demonstrate in the second performance test as specified in Section 5.12.11.1.3.2 of

this Services Tariff, multiplied by up to one and one-half times the applicable Market-Clearing Price of Unforced Capacity determined in the ICAP Spot Market Auction for each such month.

If a RIP fails to provide the information required by Section 5.12.11.1.3 of this Services Tariff in accordance with the ISO Procedures for reporting a Qualified Change of Status Condition, and the ISO determines that a SCR Change of Status occurred within a Capability Period, the ISO may impose a financial sanction equal to the difference, if positive, between the enrolled ACL and the maximum one hour metered Load for the month multiplied by up to one-half times the applicable Market-Clearing Price of Unforced Capacity determined in the ICAP Spot Market Auction for each month the Installed Capacity Supplier is deemed to have a shortfall in addition to the corresponding shortfall penalty as provided in Section 5.14.2.

For each month in which a RIP fails to report required verification data and the applicable ACL value is set to zero in accordance with Section 5.12.11 of this Services Tariff, the ISO shall have the right to recover any energy payments made to the RIP for performance of the SCR by reducing other payments or other lawful means.

### **5.12.13 Aggregations**

#### **5.12.13.1 Resources Entering and Changing Aggregations**

A qualified Installed Capacity Supplier, which meets the requirements to participate in an Aggregation, may enter an Aggregation pursuant to the rules set forth in Services Tariff Section 4.1.10.3.

When an Installed Capacity Supplier that is a Special Case Resource enters an Aggregation to become a Distributed Energy Resource within the same Capability Period, the maximum Installed Capacity that an Aggregator can declare for the Distributed Energy Resource shall be the upper limit of Installed Capacity calculated for the Special Case Resource in

accordance with Services Tariff Section 5.12.11.1.1. When an existing Special Case Resource enters an Aggregation and becomes a Distributed Energy Resource at the beginning of a Capability Period (*i.e.*, begins participating as a Distributed Energy Resource on May 1 or November 1), the maximum Installed Capacity that an Aggregator can declare for that Distributed Energy Resource shall be the upper limit of Installed Capacity calculated for the Special Case Resource for the immediately prior like Capability Period, calculated in accordance with Services Tariff Section 5.12.11.1.1, if such value was calculated.

When a Generator with an approved in-period DMNC rating enters an Aggregation to become a Distributed Energy Resource, the maximum Installed Capacity that an Aggregator can declare for the Distributed Energy Resource shall be the minimum of the Generator's approved in-period DMNC rating and the Generator's CRIS.

Individual Distributed Energy Resources may elect to leave their current Aggregation and join a new Aggregation pursuant to the Resources Changing Aggregation rules set forth in this Services Tariff section below and in Services Tariff section 4.1.10.3. The Installed Capacity of a Distributed Energy Resource that enters a new Aggregation will be assigned to the new Aggregation on a monthly basis beginning on the first day of the month in which the Distributed Energy Resource enters the new Aggregation. The Installed Capacity of a Distributed Energy Resource that exits an Aggregation will be removed from the Aggregation on the last day in which the Distributed Energy Resource is registered in the Aggregation. The specific processes for transferring a Distributed Energy Resource and its Installed Capacity to another Aggregation are located in the ISO Procedures.

An individual resource within an Aggregation may only change from participating in a homogenous Aggregation that is not a DER Aggregation to participating in a DER Aggregation

at the beginning of a Capability Year, provided that the Aggregation notifies the ISO by August 1 of the year prior to the beginning of the Capability Year. An individual resource within an Aggregation may only change from participating in a DER Aggregation to participating in a homogeneous Aggregation that is not a DER Aggregation at the beginning of a Capability Year, provided that the Aggregation notifies the ISO by August 1 of the year prior to the beginning of the Capability Year. If the composition of a homogeneous Aggregation that is not a DER Aggregation changes during a Capability Year such that the homogeneous Aggregation that is not a DER Aggregation would no longer qualify as a homogeneous Aggregation that is not a DER Aggregation, the homogeneous Aggregation that is not a DER Aggregation will maintain the qualifications as a homogeneous Aggregation that is not a DER Aggregation for the remainder of the Capability Year, and, it will have to elect (i) a different Aggregation by August 1, (ii) to participate in the ISO Administered Markets as a Generator, if qualified, or (iii) to leave the ISO Administered Markets for the following Capability Year. If the composition of a DER Aggregation changes during a Capability Year such that the DER Aggregation would no longer qualify as a DER Aggregation, the DER Aggregation will maintain the qualifications as a DER Aggregation for the remainder of the Capability Year, and, it will have to elect (i) a different Aggregation by August 1, (ii) to participate in the ISO Administered Markets as a Generator, if qualified, or (iii) to leave the ISO Administered Markets for the following Capability Year. An individual Distributed Energy Resource seeking to participate in the ISO-administered Installed Capacity auctions that has previously acted as a retail load modifier may only register as an Installed Capacity Supplier for the upcoming Capability Year, provided that Resource notified the ISO of its intention to become an Installed Capacity Supplier by August 1 of the year prior to the start of the Capability Year and provided the output data in accordance with ISO Procedures.

#### **5.12.13.2 Time-stacking Resources in an Aggregation**

An Aggregator may sequentially stack individual Distributed Energy Resources within an Aggregation in order to meet the Energy Duration Limitations specified in Section 5.12.14. In addition to the requirements and obligations described in this section 5.12.13, the following rules apply to an Aggregation that seeks to sequentially stack individual Distributed Energy Resources:

5.12.13.2.1 each individual Distributed Energy Resource must be able to provide

Energy for a minimum of one 1-hour block each day;

5.12.13.2.2 individual Distributed Energy Resources duration will be rounded-down to

the nearest hour and stacked in whole-hour increments;

5.12.13.2.3 Time-stacked Aggregations will be qualified for the amount of Capacity it

can sustain over the run-time requirement; and

The specific processes related to time-stacking Distributed Energy Resources in an Aggregation are located in the ISO Procedures.

#### **5.12.14 Energy Duration Limitations, Duration Adjustment Factors, and Capacity Accreditation Factors for Installed Capacity Suppliers**

Starting with the Capability Year that begins on May 1, 2021, Resources with a limited run-time that meet the Energy Duration Limitations identified in the tables below may qualify to participate as Installed Capacity Suppliers. Resources with a limited run-time must elect an Energy Duration Limitation that is less than or equal to the Resource's ability to demonstrate sustained output at its qualified MW amount. Resources that do not have an Energy Duration Limitation will have a Duration Adjustment Factor of 100%. The Adjusted Installed Capacity for an Installed Capacity Supplier shall be calculated using the applicable Energy Duration Limitations and Duration Adjustment Factors, and in accordance with ISO Procedures, starting



with the 2021/2022 Capability Year, as determined by the MW count of incremental penetration of Resources with Energy Duration Limitations as listed below:

Table 1:

Incremental Penetration of Resources with Energy Duration Limitations is less than 1000 MW	
Energy Duration Limitations (hours)	Duration Adjustment Factor (%)
8	100
6	100
4	90
2	45

Table 2:

Incremental Penetration of Resources with Energy Duration Limitations 1000 MW and above	
Energy Duration Limitations (hours)	Duration Adjustment Factor (%)
8	100
6	90
4	75
2	37.5

While Table 1 is in effect, Resources with an Energy Duration Limitation of 6 hours or less must fulfill the availability requirements given in Section 5.12.7 for a 6-hour Peak Load Window. While Table 2 is in effect, Resources with an Energy Duration Limitation of 6 hours or less must fulfill the availability requirements given in Section 5.12.7 for an 8-hour Peak Load Window. Resources with an Energy Duration Limitation of 8 hours must always fulfill the availability requirements given in Section 5.12.7 for an 8-hour Peak Load Window. The 6 hour

Peak Load Window for the Summer Capability Period is HB 13 through HB 18, and the 6 hour Peak Load Window for the Winter Capability Period is HB 16 through HB 21. The 8 hour Peak Load Window for the Summer Capability Period is HB 12 through HB 19, and the 8 hour Peak Load Window for the Winter Capability Period is HB 14 through HB 21.

Starting with the Capability Year that begins in May 2024, ICAP Suppliers will have their Adjusted ICAP calculated pursuant to Section 5.12.14.2 using the applicable Capacity Accreditation Factor. Resources with a limited run-time must elect an Energy Duration Limitation that is less than or equal to the Resource's ability to demonstrate sustained output at its qualified MW amount and will use the corresponding Capacity Accreditation Factor.

Resources with an Energy Duration Limitation must fulfill the availability requirements given in Section 5.12.7 for the duration of the Peak Load Window.

#### **5.12.14.1 Counting Incremental Penetration of Resources with Energy Duration Limitations**

The penetration levels of CRIS MW will be the sum of CRIS for Resources with Energy Duration Limitations that have elected to participate in ISO Administered Markets with less than 8 hour duration and that have entered into service after January 1, 2019 and incremental CRIS awarded after January 1, 2019 to Resources with Energy Duration Limitations that have elected to participate in ISO Administered Markets with less than 8 hour duration as specified below.

Penetration levels of CRIS MW for Resources with Energy Duration Limitations will be calculated in accordance with ISO Procedures as the sum of CRIS for Resources with Energy Duration Limitations of 2 hours, CRIS for Resources with Energy Duration Limitations of 4 hours and CRIS for Resources with Energy Duration Limitations of 6 hours that have entered into service and have participated in the ISO Markets after January 1, 2019. Penetration levels of Demand Side Resources will be calculated as the sum of the Demand Side Resource MW that

have elected to participate in the ISO Capacity markets with less than 8 hour duration as of July 1, as pursuant to ISO Procedures. The MW count of Resources with Energy Duration Limitations that were in service prior to January 1, 2019 and have Retired will include CRIS for Resources with Energy Duration Limitations of 2 hours, CRIS for Resources with Energy Duration Limitations of 4 hours and CRIS for Resources with Energy Duration Limitations of 6 hours that have Retired as of July 1 each year, pursuant to ISO Procedures. Resources that obtained CRIS and were in service prior to January 1, 2019 that qualify as Resources with Energy Duration Limitations at a later date will not be included in the penetration levels of Resources with Energy Duration Limitations.

The MW count of incremental penetration of Resources with Energy Duration Limitations used to determine the applicable Duration Adjustment Factors provided in Section 5.12.14 for the upcoming Capability Year will be calculated in accordance with ISO Procedures as the sum of the penetration levels of CRIS MW, as described above, and penetration levels of Demand Side Resources, as described above, less the sum of CRIS MW for Resources with Energy Duration Limitations that have Retired, as described above, and less 1309.1 MW of SCR MW. The MW count of incremental penetration of Resources with Energy Duration Limitations with their Energy Duration Limitation election will be counted as of July 1 and posted by July 15. Once there are 1000 MW or more incremental penetration of Resources with Energy Duration Limitations, the Duration Adjustment Factors listed in Table 2 provided above in Section 5.12.14 will be effective May 1 of the following Capability Year and Table 2 will be effective notwithstanding future MW count of incremental penetration of Resources with Energy Duration Limitations.

#### **5.12.14.2 Adjusted Installed Capacity**

Starting with the Capability Year beginning May 1, 2021 and continuing until the Capability Year that begins in May 2024, a Resource's Unforced Capacity shall reflect the applicable Duration Adjustment Factor for the Resource's elected Energy Duration Limitation. The Adjusted Installed Capacity is equal to a Resource's Installed Capacity multiplied by the Duration Adjustment Factor. If a Resource or Aggregation wants to change its duration election it must inform the ISO by August 1 preceding the upcoming Capability Year.

Starting with the Capability Year that begins in May 2024, an ICAP Supplier's Unforced Capacity shall reflect the applicable Capacity Accreditation Factor of its Capacity Accreditation Resource Class. The ICAP Supplier's Adjusted Installed Capacity is equal to its Installed Capacity multiplied by its applicable Capacity Accreditation Factor. If an existing Resource wishes to join an Aggregation, or, if a Resource or Aggregation wishes to elect a different Energy Duration Limitation than its current duration, it must inform the ISO by August 1 preceding the upcoming Capability Year.

#### **5.12.14.3 Periodic Review of Capacity Values Accreditation Factors**

Starting with the Capability Year that begins in May 2024 and occurring every year, the ISO shall review the existing Capacity Accreditation Factors established for each Capacity Accreditation Resource Class and assess for the upcoming Capability Year the marginal reliability contributions of each Capacity Accreditation Resource Class toward meeting NYSRC resource adequacy requirements. The annual review shall: (i) use the Installed Reserve Margin/Locational Minimum Installed Capacity Requirement study model that is approved by the NYSRC for the upcoming Capability Year as a starting database, (ii) be performed at the conditions that reflect the expected NYCA system that meets the resource adequacy criterion,

(iii) develop Capacity Accreditation Factors for all Capacity Accreditation Resource Classes that reflect the marginal reliability contributions toward meeting NYSRC resource adequacy requirements, and (iv) be performed for Rest of State, G-J Locality (excluding Load Zone J), NYC Locality, and Long Island Locality to the extent there exists an ICAP Supplier or projected ICAP Supplier in the given Capacity Accreditation Resource Classes in the applicable location, as specified in ISO Procedures.

In conjunction with this review, the ISO shall review the Peak Load Window associated with the bidding requirements for Resources with Energy Duration Limitations and modify the Peak Load Window accordingly, pursuant to ISO Procedures.

## **7.2 Billing and Payment Procedures**

For purposes of this Section 7.2:

- (i) the term “Complete Week Settlement Period” shall mean the seven day period between Saturday and Friday for which all of the days are in the same month; and
- (ii) the term “Stub Week Settlement Period” shall mean the six or fewer day period between Saturday and Friday for which all of the days are in the same month.

### **7.2.1 Billing and Settlement Information**

The ISO shall provide settlement and billing information to Customers. The ISO shall inform each Customer that provides or is provided services furnished under this ISO Services Tariff or the ISO OATT of the payments due for such service. Such information shall be made electronically available to the Customer.

### **7.2.2 Invoicing and Payment**

#### **7.2.2.1 Weekly Invoice**

On or about each Wednesday, as set forth in ISO Procedures, the ISO shall submit an invoice to a Customer that indicates the net amount owed by or owed to the Customer for those services furnished under this ISO Services Tariff or the ISO OATT for the previous Complete Week Settlement Period or Stub Week Settlement Period that are designated as Weekly Invoice Components in ISO Procedures; *provided, however*, that the net amount owed by or owed to the Customer for those services furnished for a Stub Week Settlement Period that concludes a month shall be included in the next monthly invoice issued in accordance with Section 7.2.2.2 of this ISO Services Tariff.

#### **7.2.2.2 Monthly Invoice**

Within five (5) business days after the first day of each month, the ISO shall submit an invoice to a Customer that indicates the net amount owed by or owed to the Customer:

- (i) for those services furnished under this ISO Services Tariff or the ISO OATT for a Stub Week Settlement Period that concludes the previous month that are designated as Weekly Invoice Components in ISO Procedures;
- (ii) for any adjustments to amounts contained in the weekly invoices issued in the previous month pursuant to Section 7.2.2.1 of this ISO Services Tariff;
- (iii) for those services furnished under this ISO Services Tariff or the ISO OATT in the previous month that are designated as Monthly Invoice Components in ISO Procedures;
- (iv) for any adjustments to amounts contained in a previously issued monthly invoice that was issued on or about one hundred twenty (120) days prior to the issuance of this invoice;  
and
- (v) for any adjustments to amounts contained in a previously issued monthly invoice as part of the Close-Out Settlement of that monthly invoice pursuant to Section 7.4.1.2 of this ISO Services Tariff.

#### **7.2.2.3 Payment by the Customer**

A Customer owing payments on net in its weekly invoice or its monthly invoice shall make those payments to the ISO through the ISO Clearing Account by the second business day after the date on which the weekly invoice or monthly invoice is rendered by the ISO unless otherwise specified in ISO Procedures. In accordance with Section 7.1.2 of this ISO Services

Tariff, the ISO may net any overpayment by the Customer for past estimated charges against current amounts due from the Customer or, if the Customer has no outstanding amounts due, the ISO may pay to the Customer an amount equal to the overpayment.

#### **7.2.2.4 Payment by the ISO**

Except as provided in Section 7.1.4 of this ISO Services Tariff, the ISO shall pay all net monies owed to a Customer in its weekly invoice or its monthly invoice from the ISO Clearing Account by the second business day after the due date for Customer payments set forth in Section 7.2.2.3 of this ISO Services Tariff unless otherwise specified in ISO Procedures.

#### **7.2.3 Use of Estimated Data and Meter Data**

The ISO may use estimates, including estimated meter data, in whole or in part to settle a weekly or monthly invoice in accordance with ISO Procedures. The ISO shall use meter data submitted to the ISO in accordance with Article 13 of this ISO Services Tariff. Any charges based on estimates shall be subject to true-up in invoices subsequently issued by the ISO after the ISO has obtained the requisite actual information, provided that the ISO shall only true-up charges based on meter data prior to the deadline for finalizing meter data established in Section 7.4 of this ISO Services Tariff. A trued-up charge shall include interest amounts calculated at the rate set forth in Section 7.3 of this ISO Services Tariff from the weekly or monthly due date for the charge until the date of payment of the trued-up amount for that charge.

#### **7.2.4 Method of Payment**

All payments by the Customer shall be made by either (i) wire transfer in immediately available funds payable to the ISO through the ISO Clearing Account or (ii) any other method set forth in ISO Procedures. All payments by the ISO shall be made either (i) by wire transfer in



immediately available funds payable to the Customer by the ISO through the ISO Clearing Account or (ii) any other method set forth in ISO Procedures.

#### **7.2.5 TCC Auction Settlements**

Notwithstanding Sections 7.2.2.1 and 7.2.2.2 of this ISO Services Tariff, the ISO shall make settlements related to the Centralized TCC Auction and the Reconfiguration Auction as set forth in this Section 7.2.5.

7.2.5.1 The ISO shall submit invoices to, and make settlements with, Transmission Owners in connection with the allocation of Net Auction Revenues in accordance with the timeline set forth in ISO Procedures.

7.2.5.2 Customers owing payments to the ISO as a result of their activity in or related to a Centralized TCC Auction or Reconfiguration Auction, pursuant to an award notice or a comparable invoice rendered by the ISO, shall make those payments to the ISO through the ISO Clearing Account in accordance with the timeline set forth in ISO Procedures.

7.2.5.3 Except as provided in Section 7.1.4 of this ISO Service Tariff, the ISO shall pay all net monies owed to Customers as a result of their activity in or related to a Centralized TCC Auction or a Reconfiguration Auction, pursuant to an award notice or a comparable invoice rendered by the ISO, from the ISO Clearing Account in accordance with ISO Procedures.

7.2.5.4 Sections 7.2.1, 7.2.3, 7.2.4, and 7.2.6 of this ISO Services Tariff and Section 19.9.6 of Attachment M of the ISO OATT shall apply to settlements calculated in accordance with this Section 7.2.5.

## **7.2.6 Verification of Payments**

The ISO shall verify that all payments owed by Customers in accordance with this ISO Services Tariff and the ISO OATT have been paid to the ISO in a timely manner. If a Customer fails to make a payment within the time period established in Sections 7.2.2.1, 7.2.2.2, and 7.2.5 of this ISO Services Tariff or pays less than the amount due, the ISO shall take measures pursuant to Section 7.5 of this ISO Services Tariff. Except as provided in Section 7.1.4 of this ISO Services Tariff, the ISO shall also ensure that monies owed to Customers in accordance with this ISO Services Tariff and the ISO OATT are paid through the ISO Clearing Account in a timely manner.

## **7.2.7 Payments for TSCs**

Bills and payments for TSCs shall be issued in accordance with the ISO OATT. Accordingly, this Section 7 shall not apply to TSCs.

## **7.2.8 Payment for Actual Energy Withdrawals by Energy Storage Resources**

A Customer that is participating in the ISO-administered Energy and Ancillary Services markets with an Energy Storage Resource, or an Aggregation containing one or more Energy Storage Resources, will be subject to Day Ahead Market settlements pursuant to Section 4.2.6 and Real Time Market settlements pursuant to 4.5.2, or in the case of a Supplier of Regulation Service pursuant to Rate Schedule 15.3.6.1 of this ISO Services Tariff. If a Load Serving Entity requires the Energy Storage Resource, including an Energy Storage Resource participating in an Aggregation, to also pay a retail rate for its charging withdrawals, then the ISO shall issue a credit to the affected Customer for the associated Actual Energy Withdrawals and assess a charge to this Load Serving Entity for the same Actual Energy Withdrawals. When an Energy Storage Resource participates as a Co-located Storage Resource, the credit issued to an affected

Customer and the corresponding charge assessed to the Load Serving Entity will not include the Energy Storage Resource's charging Energy received from the co-located Intermittent Power Resource behind the Co-located Storage Resource's shared Point of Injection/Point of Withdrawal. The credit and offsetting charge shall be calculated as the product of the Actual Energy Withdrawals of the Energy Storage Resource and the time weighted average Real-Time Market LBMP for the hour at the Energy Storage Resource's location.

## **13     Metering**

### **13.1        General Requirements**

Existing metering in the NYCA provides revenue-quality metering information among the currently designated electrical zones separated by the designated transmission Interfaces. In addition, sufficient metering information will be made available by the ISO to calculate Load for the individual Transmission Owners within each Load Zone. The ISO will require adequate metering for all Generators, Aggregations (including each individual resource within an Aggregation), Co-located Storage Resources, and Loads within the NYCA to ensure the reliable operation of the NYS Power System.

### **13.2        Requirements Pertaining to Customers**

Customers shall provide to the ISO such information and data as the ISO reasonably deems necessary in order to perform its functions and fulfill its responsibilities under the ISO Services Tariff and in accordance with the ISO Market Power Monitoring Program. Such information will be provided on a timely basis and in the formats prescribed in the ISO Procedures. The ISO shall establish metering and real-time telemetry specifications and standards for all metering and telemetry used by the ISO, which specifications and standards will be set forth in ISO Procedures. Customers shall install and maintain metering and telemetry hardware and infrastructure at their own expense, and deliver data to the ISO without charge.

A Customer taking service under the ISO Services Tariff will make available to the ISO metered data that meets ISO requirements by one of the following means: (i) direct transmission to the ISO; (ii) direct transmission to the ISO through Transmission Owner communications

equipment, or (iii) indirectly through metering provided by the Transmission Owner in whose Load Zone it is located.

Customers shall provide real-time telemetry for Generators and Co-located Storage Resources, nominally every six (6) seconds, in accordance with the specifications set forth in the ISO Procedures. Real-time telemetry data errors and transmission disruptions shall be remedied in accordance with ISO Procedures.

The Customer also shall provide its metered data to the Transmission Owner in whose Load Zone it is located, to the extent that the Transmission Owner determines that the metered data provided to the ISO is required for its system operation and planning functions, for the billing of services it provides to the Customer, or to perform calculations required as part of the ISO Settlement procedures.

#### **13.2.1 Load Serving Entities**

Any Load that is not directly metered, as described above, will have its Load determined by the Transmission Owner in whose Load Zone it is located in accordance with the Transmission Owner's retail access plan on file with the PSC or otherwise authorized.

#### **13.2.2 Ancillary Service Suppliers**

Suppliers shall ensure that adequate metering data is made available to the ISO as described above. Additionally, for operational purposes, metered data provided to the ISO must also simultaneously be provided to the Transmission Owner, which will handle such information in conformity with the OASIS standards of conduct as specified in Order No. 889.

### **13.2.3 Estimation of Metering**

In the event of a meter malfunction or inadequate metering data, the ISO may use estimates to determine Customer's rights and responsibilities under the ISO Services Tariff.

### **13.2.4 Energy Storage Resources**

In addition to the metering requirements applicable to Energy Storage Resources because they are Generators, specific metering rules apply to account for Energy injections and withdrawals.

13.2.4.1 An Energy Storage Resource, including an Energy Storage Resource that is electrically located behind the same point of interconnection as a load facility or other Resource, must separately and directly meter Energy injections and withdrawals of the Energy Storage Resource. Such metering must allow the Meter Authority and/or ISO is able to distinguish the Energy injections and withdrawals of the Energy Storage Resource from all other injections and withdrawals behind the point of interconnection.

13.2.4.2 Hourly meter data for Energy Storage Resources shall be reported as two separate components: (i) Energy injections, and (ii) Energy withdrawals. Each component shall be submitted to the NYISO by the Meter Authority in separate fields such that the ISO is able to separately determine the total Energy injections and withdrawals in each interval.

13.2.4.3 If an Energy Storage Resource is electrically located behind the same point of interconnection as a load facility, the Meter Authority shall submit to the ISO (i) directly metered Energy injection and withdrawal data (pursuant to Services Tariff § 13.2.4.2), and (ii) the Load (excluding the Energy injections and

withdrawals of the Energy Storage Resource) of the co-located facility behind the point of interconnection (pursuant to OATT § 2.7.4.2.1 (ii) & (iv)).

The ISO Procedures, including the Revenue Meter Requirements Manual (M-25), Control Center Requirements Manual (M-21), and Accounting and Billing Manual (M-14) contain additional information related to metering requirements for Generators and Energy Storage Resources.

### **13.3 Metering Requirements for DER Aggregations and Demand Side Resources**

#### **13.3.1 Responsibility for Metering and Meter Data Services for Aggregations and Demand Side Resources**

13.3.1.1 An Aggregator, Demand Reduction Provider, DSASP Provider, Responsible Interface Party, or Curtailment Service Provider shall obtain metering and meter data services, as these services are defined in ISO Procedures, from: (i) an authorized Meter Services Entity that the ISO has determined complies with the eligibility requirements pursuant to Section 13.3.2.1, and/or (ii) the municipal electric utility for the municipality in which the Demand Side Resource is electrically located, and/or (iii) the Member System in which Transmission District the Aggregation or Demand Side Resource is located. The Aggregator shall notify the ISO of the specific metering and meter data services the Meter Services Entity, municipal electric utility, or Member System has agreed to provide in accordance with the ISO Procedures. An Aggregator, Demand Reduction Provider, DSASP Provider, Responsible Interface Party, or Curtailment Service Provider that meets the eligibility requirements in Section 13.3.2.1 may serve as its own Meter Services Entity.

13.3.1.2        The Aggregator, Demand Reduction Provider, DSASP Provider, Responsible Interface Party or Curtailment Service Provider shall be responsible for ensuring that all of the metering and meter data services that are required for it to perform its functions and fulfill its responsibilities under the ISO Tariffs and ISO Procedures are provided by the Member System and/or Meter Services Entity in accordance with the requirements in this Section 13 and ISO Procedures. The Aggregator, Demand Reduction Provider, DSASP Provider, Responsible Interface Party, or Curtailment Service Provider shall be responsible for any applicable penalties issued as a result of metering or meter data services that do not comply with the ISO Tariffs and ISO Procedures, including, but not limited to, penalties issued pursuant to Services Tariff Sections 5.12 and 5.14.

13.3.1.3        An Aggregator, Demand Reduction Provider, DSASP Provider, Responsible Interface Party, or Curtailment Service Provider shall be responsible for any required compensation to the Member System and/or Meter Services Entity concerning the provision of metering and/or meter data services. In accordance with Services Tariff Section 15.10 (Rate Schedule 10), Aggregators, Demand Reduction Provider, DSASP Provider, Responsible Interface Parties and Curtailment Service Providers shall be responsible for the ISO's costs of conducting audits pursuant to Section 13.3.2.3.

13.3.1.4        All individual Resources within an Aggregation must use the same Meter Authority. A DER Aggregation may use either the applicable Member System or a qualified Meter Services Entity as its Meter Authority. Single Resource Type



Aggregations (*e.g.*, an Aggregation comprised of only Energy Storage Resources) may only use the applicable Member System.

### **13.3.2 Meter Services Entity Requirements**

#### **13.3.2.1 Eligibility Determination for Meter Services Entity**

To be authorized as a Meter Services Entity, an entity must complete, to the NYISO's satisfaction, the application requirements specified in Services Tariff Section 13.3.2.1.2 below. Once authorized, a Meter Services Entity must meet the obligations set forth in Services Tariff Sections 13.3.2.1.3 and 13.3.2.1.4. All physical metering infrastructure and meter data communications infrastructure used by a Meter Services Entity must comply with the requirements set forth in the ISO Tariffs and ISO Procedures.

13.3.2.1.1 An entity, including a Demand Reduction Provider, DSASP Provider, Responsible Interface Party, or Curtailment Service Provider, seeking to be a Meter Services Entity must submit to the ISO an application containing the eligibility information required pursuant to Section 13.3.2.1.2, accompanied by a non-refundable application fee of \$1,000. The ISO shall review the application within thirty (30) calendar days of its receipt of the application and fee, and notify the applicant whether the application is sufficient to register the applicant as a Meter Services Entity or otherwise requires additional information. Any additional information required shall be received by the ISO within the timeframe specified by the ISO in its request for additional information. The ISO shall reject the application of an entity seeking to become a Meter Services Entity if the required information is not received within the specified timeframe or an alternative, mutually agreed to timeframe.

Upon the ISO's affirmative determination of an entity's eligibility, the entity will be registered with the ISO and authorized to serve as a Meter Services Entity in order to provide metering and/or meter data services, as applicable, to a Demand Reduction Provider, DSASP Provider, Responsible Interface Party, or Curtailment Service Provider. The ISO shall post on its website a list of all authorized Meter Services Entities.

If the ISO determines an entity is not eligible to serve as a Meter Services Entity, the ISO shall provide the entity with the reasons for such determination. An entity that seeks to re-apply to be a Meter Services Entity shall also be required to pay the \$1,000 application fee.

13.3.2.1.2 An entity seeking to be a Meter Services Entity must provide, at a minimum, the following eligibility information, as detailed in ISO Procedures: (i) financial eligibility and insurance coverage information; (ii) proof of eligibility to do business in New York State; (iii) a list of the Transmission Owner(s) service territory(ies) in which it will provide services; (iv) a description of the metering and/or meter data services that it will provide; (v) its attestation of its employees' qualifications, training, and certification to perform the listed services; (vi) a description of the meter testing laboratory facilities, including its attestation that its meter testing programs comply with ISO Procedures and Good Utility Practice; (vii) its agreement that its services will be subject to audit by the ISO, the Transmission Owners, and/or their designated agents, as applicable; (viii) its agreement to comply with the metering requirements in the ISO Tariffs and ISO Procedures, as such requirements may be amended from time to time; (ix) a revenue-grade settlement meter and real-time telemetry data plan; (x) a meter data validation, editing, and estimation plan; (xi) a security plan and description of

how it will protect meter equipment and/or meter data from unauthorized physical or electronic entry or tampering; (xii) a description of how and where records of meter installations and/or meter data will be kept, and its agreement to retain these records in accordance with the ISO's recordkeeping requirements; and (xiii) any other information required by ISO Procedures or requested by the ISO.

13.3.2.1.3 A Meter Services Entity shall promptly inform the ISO, in accordance with ISO procedures, of any material change to the eligibility information it has previously submitted to the ISO pursuant to Section 13.3.2.1.2. The ISO shall review all such material changes and determine whether the Meter Services Entity complies with all eligibility requirements. If the NYISO determines that the Meter Services Entity does not comply with the eligibility requirements, it may suspend the Meter Services Entity's eligibility until such time that it complies with those eligibility requirements.

13.3.2.1.4 The ISO shall inform registered Meter Services Entities of changes related to Meter Services Entity eligibility requirements via posting to the ISO's public website and electronic mail. A Meter Services Entity has a continuing obligation to comply with the eligibility requirements in this Section 13 and ISO Procedures and the metering and meter data requirements in the ISO Tariffs and ISO Procedures, as the requirements may be amended from time to time. Each Meter Services Entity shall inform the ISO, in accordance with ISO Procedures, and received by the date specified in the ISO's posting, of its compliance with the identified changes to eligibility criteria. If the Meter Services Entity is unable to comply with the changes by the specified date, it shall provide the ISO with a

detailed plan to comply. The ISO shall review all such plans and determine whether to extend the compliance deadline, or to suspend the Meter Services Entity's eligibility until such time that it complies with all eligibility requirements.

#### **13.3.2.2 Standards of Conduct for Meter Services Entities**

A Meter Services Entity must treat all customers, Affiliated and non-Affiliated, on a non-discriminatory basis, and must not make or grant any undue preference or advantage to any person or subject any person to any undue prejudice or disadvantage with respect to the provision of metering services authorized by Services Tariff Section 13.3.

#### **13.3.2.3 ISO Audits and Corrective Actions**

13.3.2.3.1 The ISO or its designated entity may, upon reasonable notice, perform an audit, inspection, and/or test of the Meter Services Entity's metering facilities, meters, and/or meter data records to ensure they comply with the ISO Tariffs and ISO Procedures and with the Meter Services Entity's plans submitted to the ISO. Meter Services Entities must comply with, i) periodic audits of meter data records and meter data collection and retention services and protocols provided to the Market Participant by the Meter Services Entity; and ii) audits of the metering facilities, meter data records and meter data collection and retention services and protocols utilized by the Market Participant and the Meter Services Entity when the Market Participant enrolls new resources or modifies the metering scheme of existing resources.

The ISO's audit of a MSE's services may involve, but is not limited to, the ISO's review, inspection, performance testing and review of corrective actions taken in the following categories:

- A) Validation, Estimation, & Editing (VEE) methodology;
- B) Site meter configurations;
- C) Meter compliance with ISO rules and procedures;
- D) Meter Services Entity operational protocols, procedures, and record keeping, and compliance with ISO rules and procedures; and
- E) Telemetry and communication data and records.

13.3.2.3.2 If the ISO determines, at any time, that a Meter Services Entity does not comply with the eligibility requirements or does not comply with the metering or meter data requirements set forth in the ISO Tariffs and ISO Procedures, the ISO may suspend or revoke the eligibility of the Meter Services Entity.

### **13.3.3 Metering Requirements for Aggregated Resources**

Aggregators shall ensure that all measurements for metering and telemetry for the individual DER they represent, derive from either directly measured or calculated values, or a combination thereof, in accordance with the requirements set forth in ISO procedures.

**18      Attachment C -Formulas For Determining Bid Production Cost Guarantee  
Payments**

## **18.1 Introduction**

Ten Bid Production Cost Guarantee (BPCG) payments for eligible Suppliers are described in this attachment: (i) a Day-Ahead BPCG for Generators; (ii) a Day-Ahead BPCG for Imports; (iii) a real-time BPCG for Generators and Aggregations in RTD intervals other than Supplemental Event Intervals; (iv) a BPCG for Generators and Aggregations for Supplemental Event Intervals; (v) a real-time BPCG for Imports; (vi) a BPCG for long start-up time Generators (i.e., Generators that cannot be scheduled by SCUC to start up in time for the next Dispatch Day) whose start is aborted by the ISO prior to their dispatch; (vii) a BPCG for Demand Reduction in the Day-Ahead Market; (viii) a Special Case Resources BPCG; (ix) a BPCG for Demand Side Resources providing synchronized Operating Reserves and / or Regulation Service in the Day-Ahead Market; and (x) a BPCG for Demand Side Resources providing synchronized Operating Reserves and / or Regulation Service in the Real-Time Market. Suppliers shall be eligible for these payments in accordance with the eligibility requirements and formulas established in this Attachment C.

The Bid Production Cost guarantee payments described in this Attachment C are each calculated and paid independently from each other. A Customer's eligibility to receive one type of Bid Production Cost guarantee payment shall have no impact on the Customer's eligibility to be considered to receive another type of Bid Production Cost guarantee payment, in accordance with the rule set forth in this Attachment C.

## **18.2 Day-Ahead BPCG For Generators and Aggregations**

### **18.2.1 Eligibility to Receive a Day-Ahead BPCG for Generators and Aggregations**

#### **18.2.1.1 Eligibility.**

A Supplier that bids on behalf of an ISO-Committed Fixed Generator or an ISO Committed Flexible Generator or an ISO-Committed Flexible Aggregation that is committed by the ISO in the Day-Ahead Market shall be eligible to receive a Day-Ahead Bid Production Cost guarantee payment. Energy Storage Resources and Aggregations comprised entirely of Energy Storage Resources that satisfy this eligibility criteria shall be eligible to receive a Day-Ahead Bid Production Cost guarantee payment regardless of whether the Resource Self-Manages its Energy Level.

#### **18.2.1.2 Non-Eligibility (includes both partial and complete exclusions).**

Notwithstanding Section 18.2.1.1, a Supplier that bids on behalf of an ISO-Committed Fixed Generator or an ISO-Committed Flexible Generator, or an ISO-Committed Flexible Aggregation, that is committed by the ISO in the Day-Ahead Market shall not be eligible to receive a Day-Ahead Bid Production Cost guarantee payment if that Generator or Aggregation has been committed in the Day-Ahead Market for any other hour of the day as a result of a Self-Committed Fixed or Self-Committed Flexible bid.

Notwithstanding Section 18.2.1.1, Incremental Energy Bid costs and Minimum Generation Bids that exceed \$1,000/MWh are only eligible for inclusion in a Day-Ahead Bid Production Cost guarantee payment in accordance with Sections 21.4.1 and 23.7 of this ISO Services Tariff.



## 18.2.2 Formulas for Determining Day-Ahead BPCG for Generators and Aggregations

### 18.2.2.1 Applicable Formula. A Supplier's BPCG for Generator or Aggregation g, shall be as follows:

Day-Ahead Bid Production Cost Guarantee for Generator g or Aggregation g =

$$\text{Max} \left[ \sum_{h=1}^N \left( \int_{MGH_{gh}^{DA}}^{EH_{gh}^{DA}} C_{gh}^{DA} + MGC_{gh}^{DA} MGH_{gh}^{DA} + SUC_{gh}^{DA} NSUH_{gh}^{DA} - LBMP_{gh}^{DA} EH_{gh}^{DA} - NASR_{gh}^{DA} \right), 0 \right]$$

### 18.2.2.2 Variable Definitions. The terms used in this Section 18.2.2 shall be defined as follows:

$Supplier_g$  = Generator g or Aggregation g;

$N$  = number of hours in the Day-Ahead Market day;

$EH_{gh}^{DA}$  = Energy scheduled Day-Ahead to be provided by Supplier g or withdrawn by Supplier g, which is eligible to withdraw Energy, in hour h expressed in terms of MWh;

$MGH_{gh}^{DA}$  = Energy scheduled Day-Ahead to be produced by the minimum generation segment of Supplier g in hour h expressed in terms of MWh;

$C_{gh}^{DA}$  = Bid cost submitted by Supplier g, or when applicable the mitigated Bid cost curve for Supplier g, in the Day-Ahead Market for hour h expressed in terms of \$/MWh;

$MGC_{gh}^{DA}$  = Minimum Generation Bid by Supplier g, or when applicable the mitigated Minimum Generation Bid for Supplier g, for hour h in the Day-Ahead Market, expressed in terms of \$/MWh.

If Supplier g was committed in the Day-Ahead Market, or in the Real-Time Market via Supplemental Resource Evaluation ("SRE"), on the day prior to the Dispatch Day and Supplier g has not yet completed the minimum run time reflected in the accepted Bid for the hour in which it was scheduled to start on the day before the Dispatch Day (as mitigated, where appropriate), then Supplier g shall have its minimum generation cost set equal to the revenues received for energy produced at its minimum operating level for purposes of calculating a Day-Ahead Bid Production Cost guarantee until Supplier g completes the

minimum run time reflected in the accepted Bid for the hour in which it was scheduled to start on the day before the Dispatch Day;

$SUC_{gh}^{DA}$  = Start-Up Bid by Supplier  $g$  in hour  $h$ , or when applicable the mitigated Start-Up Bid for Supplier  $g$ , in hour  $h$  in the Day-Ahead Market expressed in terms of \$/start; *provided, however*, that the Start-Up Bid for Supplier  $g$  in hour  $h$  or, when applicable, the mitigated Start-Up Bid, for Supplier  $g$  in hour  $h$ , may be subject to *pro rata* reduction in accordance with the rules set forth in Section 18.12 of this Attachment C. Bases for *pro rata* reduction include, but are not limited to, failure to be scheduled, and to operate in real-time to produce, in each hour, the MWh specified in the accepted Minimum Generation Bid that was submitted for the first hour of Generator  $g$ 's Day-Ahead or SRE schedule, and failure to operate for the minimum run time specified in the Bid submitted for the first hour of Supplier  $g$ 's Day-Ahead or SRE schedule.

If Supplier  $g$  was committed in the Day-Ahead Market, or in the Real-Time Market via SRE, on the day prior to the Dispatch Day, *and* Supplier  $g$  has not yet completed the minimum run time reflected in the accepted Bid for the hour in which it was scheduled to start on the day before the Dispatch Day (as mitigated, where appropriate) plus the contiguous hour that follows the conclusion of such minimum run time, *then* Supplier  $g$  shall have its Start-Up Bid set to zero for purposes of calculating a Day-Ahead Bid Production Cost guarantee.

For a long start-up time Supplier (*i.e.*, a Supplier that cannot be scheduled by SCUC to start up in time for the next Dispatch Day) that is committed by the ISO and runs in real-time, the Start-Up Bid for Supplier  $g$  in hour  $h$  shall be the Supplier's Start-Up Bid, or when applicable the mitigated Start-Up Bid for Supplier  $g$ , for the hour (as determined at the point in time in which the ISO provided notice of the request for start-up):

$NSUH_{gh}^{DA}$  = number of times Supplier  $g$  is scheduled Day-Ahead to start up in hour  $h$ ;

$LBMP_{gh}^{DA}$  = Day-Ahead LBMP at Supplier  $g$ 's bus in hour  $h$  expressed in \$/MWh;

$NASR_{gh}^{DA}$  = Net Ancillary Services revenue, expressed in terms of \$, paid to Supplier  $g$  as a result of having been committed to produce Energy for the LBMP Market and/or Ancillary Services Day-Ahead in hour  $h$  which is computed by summing the following: (1) Voltage Support Service payments received by that Supplier for that hour, if it is not a Supplier of Installed Capacity and has been scheduled to operate in that hour; (2) Regulation Service payments made to that Supplier for all Regulation Service it is scheduled Day-Ahead to provide in that hour, less that Supplier's Day-Ahead Regulation Capacity Bid to provide that amount of Regulation Service in that hour; and (3) payments made to that Supplier for providing Spinning Reserve and synchronized 30-Minute Reserve in that hour if it is committed Day-Ahead to provide such reserves in that hour, less that Supplier's

Day-Ahead Bid to provide Spinning Reserve and synchronized 30-Minute Reserve in that hour.

### **18.3 Day-Ahead BPCG For Imports**

#### **18.3.1 Eligibility to Receive a Day-Ahead BPCG for Imports**

A Supplier that bids an Import that is committed by the ISO in the Day-Ahead Market shall be eligible to receive a Day-Ahead Bid Production Cost guarantee payment.

#### **18.3.2 BPCG Calculated by Transaction ID**

For purposes of calculating a Day-Ahead Bid Production Cost guarantee payment for an Import under this Section 18.3, the ISO shall treat the Import as being from a single Resource for all hours of the Day-Ahead Market day in which the same Transaction ID is used, and the ISO shall treat the Import as being from a different Resource for all hours of the Day-Ahead Market day in which a different Transaction ID is used.

#### **18.3.3 Formula for Determining Day-Ahead BPCG for Imports**

Day-Ahead Bid Production Cost guarantee for Import t by Supplier =

$$\max \left[ \sum_{h=1}^N (DecBid_{th}^{DA} - LBMP_{th}^{DA}) * SchImport_{th}^{DA}, 0 \right]$$

Where;

$N$  = number of hours in the Day-Ahead Market day;

$DecBid_{th}^{DA}$  = Decremental Bid, in \$/MWh, supplied for Import t for hour h;

$LBMP_{th}^{DA}$  = Day-Ahead LBMP, in \$/MWh, for hour h at the Proxy Generator Bus that is the source of the Import t and

$SchImport_{th}^{DA}$  = total Day-Ahead schedule, in MWh, for Import t in hour h.

## **18.4 Real-Time BPCG For Generators and Aggregations In RTD Intervals Other Than Supplemental Event Intervals**

### **18.4.1 Eligibility for Receiving Real-Time BPCG for Generators and Aggregations in RTD Intervals Other Than Supplemental Event Intervals**

#### **18.4.1.1 Eligibility.**

A Supplier shall be eligible to receive a real-time Bid Production Cost guarantee payment for intervals (excluding Supplemental Event Intervals) if it bids on behalf of:

18.4.1.1.1 an ISO-Committed Flexible Generator or an ISO-Committed Fixed Generator that is committed by the ISO in the Real-Time Market; or

18.4.1.1.2 a Self-Committed Flexible Generator if the Generator's minimum operating level does not exceed its Day-Ahead schedule at any point during the Dispatch Day; or

18.4.1.1.3 a Generator or Aggregation committed via SRE, or committed or dispatched by the ISO as Out-of-Merit generation to ensure NYCA or local system reliability for the hours of the day that it is committed via SRE or is committed or dispatched by the ISO as Out-of-Merit generation to meet NYCA or local system reliability without regard to the Bid mode(s) employed during the Dispatch Day, except as provided in Sections 18.4.2 and 18.12, below.

18.4.1.1.4 an ISO-Committed Flexible Aggregation comprised entirely of Energy Storage Resources that Self-Manages its Energy Level.

#### **18.4.1.2 Non-Eligibility (includes both partial and complete exclusions).**

18.4.1.2.1 Notwithstanding Section 18.4.1.1, a Supplier that bids on behalf of an ISO-Committed Fixed Generator or an ISO-Committed Fixed Aggregation or an ISO-Committed Flexible Generator that is committed by the ISO in the Real-Time Market shall not be eligible to

receive a real-time Bid Production Cost guarantee payment if that Generator or Aggregation has been committed in real-time, in any other hour of the day, as the result of a Self-Committed Fixed bid or a Self-Committed Flexible bid with a minimum operating level that exceeds its Day-Ahead schedule, *provided however*, a Generator or Aggregation that has been committed in real time as a result of a Self-Committed Fixed bid, or a Self-Committed Flexible bid with a minimum operating level that exceeds its Day-Ahead schedule will not be precluded from receiving a real-time Bid Production Cost guarantee payment for other hours of the Dispatch Day, in which it is otherwise eligible, due to these Self-Committed mode Bids if such Bid mode was used for: (i) an ISO authorized Start-Up, Shutdown or Testing Period, or (ii) for hours in which such Generator or Aggregation was committed via SRE, or committed or dispatched by the ISO as Out-of-Merit to meet NYCA or local system reliability as long as the Generator's Out-of-Merit Upper Operating Limit is equal to or greater than any Self-Committed minimum operating level.

18.4.1.2.2 Notwithstanding Section 18.4.1.1, Incremental Energy Bid costs and Minimum Generation Bids that exceed \$1,000/MWh are only eligible for inclusion in a real-time Bid Production Cost guarantee payment for intervals other than Supplemental Event Intervals, in accordance with Sections 21.4.1 and 23.7 of this ISO Services Tariff.

18.4.1.2.3 Notwithstanding Section 18.4.1.1, an Energy Storage Resource or Aggregation comprised entirely of Energy Storage Resources with a ISO-Managed Energy Level for any hour of the Real-Time Market day shall not be eligible to receive a real-time Bid Production Cost guarantee payment for that day, provided however, an Energy Storage Resource or Aggregation comprised entirely of Energy Storage Resources shall be eligible for a real-time

Bid Production Cost guarantee payment in accordance with Section 18.4.1.1.3 of this ISO Services Tariff regardless of whether the Energy Level is ISO-Managed.

18.4.1.2.4 Notwithstanding Section 18.4.1.1, Energy Storage Resources and Aggregations shall not be eligible to receive a real-time Bid Production Cost guarantee payment for a day if such Resources' Real-Time Market Bids for any hour of that day do not permit the Resource to receive a schedule of zero MW. However, such Resources shall be eligible for a real-time Bid Production Cost guarantee payment in accordance with Section 18.4.1.1.3 of this ISO Services Tariff.

#### 18.4.2 Formula for Determining Real-Time BPCG for Generators and Aggregations in RTD Intervals Other Than Supplemental Event Intervals

Real-Time Bid Production Cost Guarantee for Supplier g, which is not an Energy Storage Resource or an Aggregation that contains Energy Storage Resource(s) =

$$\text{Max} \left[ \left( \sum_{i \in M} \left( \int_{\max(EI_{gi}^{DA}, MGI_{gi}^{RT})}^{\max(EI_{gi}^{RT}, MGI_{gi}^{RT})} C_{gi}^{RT} + MGC_{gi}^{RT} * (MGI_{gi}^{RT} - MGI_{gi}^{DA}) - LBMP_{gi}^{RT} * (EI_{gi}^{RT} - EI_{gi}^{DA}) \right) * \frac{S_i}{3600} \right) - (NASR_{gi}^{TOT} - NASR_{gi}^{DA}) - RRAP_{gi} + RRAC_{gi} + \sum_{j \in L} SUC_{gj}^{RT} * (NSUI_{gj}^{RT} - NSUI_{gj}^{DA}) \right], 0$$

Real-Time Bid Production Cost Guarantee for Supplier g, which is an Energy Storage Resource or an Aggregation that contains Energy Storage Resource(s) =

$$\text{Max} \left( 0, \sum_{i \in M} (InjBPCG_{gi} + WthBPCG_{gi}) \right)$$

where, when an Energy Storage Resource or an Aggregation that contains Energy Storage Resource(s) has a real-time schedule to inject Energy:

$$InjBPCG_{gi} = \left( \left( \int_{\max(EI_{gi}^{DA}, 0)}^{EI_{gi}^{RT}} C_{gi}^{RT} - LBMP_{gi}^{RT} * (EI_{gi}^{RT} - \max(EI_{gi}^{DA}, 0)) \right) * \frac{S_i}{3600} \right) - (NASR_{gi}^{TOT} - NASR_{gi}^{DA}) - RRAP_{gi} + RRAC_{gi}$$

and, when an Energy Storage Resource or an Aggregation that contains Energy Storage Resource(s) has a real-time schedule to withdraw Energy =

$$WthBPCG_{gi} = \left( \left( \int_{\min(EI_{gi}^{DA}, 0)}^{EI_{gi}^{RT}} C_{gi}^{RT} - LBMP_{gi}^{RT} * (EI_{gi}^{RT} - \min(EI_{gi}^{DA}, 0)) \right) * \frac{S_i}{3600} \right) - (NASR_{gi}^{TOT} - NASR_{gi}^{DA}) - RRAP_{gi} + RRAC_{gi}$$

where:

$Supplier_g$  = Generator  $g$  or Aggregation  $g$ ;

$S_i$  = number of seconds in RTD interval  $i$ ;

$C_{gi}^{RT}$  = Bid cost submitted by Supplier  $g$ , or when applicable the mitigated Bid cost for Supplier  $g$ , in the RTD for the hour that includes RTD interval  $i$  expressed in terms of \$/MWh, except in intervals in which the dispatch of the Supplier is constrained by its downward ramp rate for that interval, unless that Supplier was scheduled to provide Regulation Service in that interval and its RTD basepoint was less than its AGC basepoint, and except in hours in which the NYISO has increased Supplier  $g$ 's minimum operating level, either (i) at the Supplier's request including through an adjustment to the Resource's self-commitment schedule, or (ii) in order to reconcile the ISO's dispatch with the Supplier's actual output or to address reliability concerns that arise because the Supplier is not following Base Point Signals, in which case  $C_{gi}^{RT}$  shall be deemed to be zero;

$MGI_{gi}^{RT}$  = metered Energy provided by minimum generation segment of Supplier  $g$  in RTD interval  $i$  expressed in terms of MW;



$MGI_{gi}^{DA}$  = Energy scheduled Day-Ahead to be produced by minimum generation segment of Supplier g in RTD interval i expressed in terms of MW;

$MGC_{gi}^{RT}$  = Minimum Generation Bid by Supplier g, or when applicable the mitigated Minimum Generation Bid for Supplier g, in the Real-Time Market for the hour that includes RTD interval i, expressed in terms of \$/MWh, which Bid or mitigated Bid may include costs pursuant to Section 4.1.8;

If Supplier g was committed in the Day-Ahead Market, or in the Real-Time Market via Supplemental Resource Evaluation (“SRE”), on the day prior to the Dispatch Day *and* Supplier g has not yet completed the minimum run time reflected in the accepted Bid for the hour in which it was scheduled to start on the day before the Dispatch Day (as mitigated, where appropriate), *then* Supplier g shall have its minimum generation cost set equal to the revenues received for energy produced at its minimum operating level for purposes of calculating a Real-Time Bid Production Cost guarantee until Supplier g completes the minimum run time reflected in the accepted Bid for the hour in which it was scheduled to start on the day before the Dispatch Day;

$SUC_{gj}^{RT}$  = Start-Up Bid by Supplier g, or when applicable the mitigated Start-Up Bid for Supplier g, for hour j into RTD expressed in terms of \$/start, which Bid or mitigated Bid may include costs pursuant to Section 4.1.8;

provided, however,

(i) the Start-Up Bid shall be deemed to be zero for (1) Self-Committed Fixed and Self-Committed Flexible Suppliers, (2) Suppliers that are economically committed by RTC or RTD that have 10-minute start-up times that are not synchronized and producing Energy within 20 minutes after their scheduled start time, and (3) Suppliers that are economically committed by RTC that have greater than 10-minute start-up times that are not synchronized and producing Energy within 45 minutes after their scheduled start time;

(ii) if a Supplier has been committed via SRE and its SRE schedule immediately precedes or follows a real-time commitment that did not result from a Day-Ahead commitment, the Supplier’s Start-Up Bid included in its daily real-time Bid Production Cost guarantee calculation for this contiguous real-time commitment period shall be the Start-Up Bid submitted in response to the SRE request (subject to mitigation, where appropriate);

(iii) if a Supplier has been committed via SRE and its SRE schedule immediately precedes or follows a real-time schedule that resulted from a Day-Ahead commitment, then the Supplier’s Start-Up Bid included in its

daily real-time Bid Production Cost guarantee calculation for this contiguous real-time commitment period shall be set to zero;

(iv) the real-time Start-Up Bid for Supplier g for hour j or, when applicable, the mitigated real-time Start-Up Bid, for Supplier g for hour j, may be subject to *pro rata* reduction in accordance with the rules set forth in Section 18.12 of this Attachment C. Bases for *pro rata* reduction include, but are not limited to, failure to be scheduled and operate in real-time to produce, in each hour, the MWh specified in the accepted Minimum Generation Bid that was submitted for the first hour of Supplier g's Day-Ahead or SRE schedule, and failure to operate for the minimum run time specified in the Bid submitted for the first hour of Supplier g's Day-Ahead or SRE schedule; and

(v) if Supplier g was committed in the Day-Ahead Market, or in the Real-Time Market via SRE, on the day prior to the Dispatch Day, *and* Supplier g has not yet completed the minimum run time reflected in the accepted Bid for the hour in which it was scheduled to start on the day before the Dispatch Day (as mitigated, where appropriate) plus the contiguous hour that follows the conclusion of such minimum run time, *then* Supplier g shall have its Start-Up Bid set to zero for purposes of calculating a Real-Time Bid Production Cost guarantee.

$NSUI_{gj}^{RT}$	=	number of times Supplier g started up in hour j;
$NSUI_{gj}^{DA}$	=	number of times Supplier g is scheduled Day-Ahead to start up in hour j;
$LBMP_{gi}^{RT}$	=	Real-Time LBMP at Supplier g's bus in RTD interval i expressed in terms of \$/MWh;
$M$	=	the set of eligible RTD intervals in the Dispatch Day consisting of all of the RTD intervals in the Dispatch Day except: <ul style="list-style-type: none"> <li>(i) Supplemental Event Intervals (which are addressed separately in Section 18.5 below);</li> <li>(ii) intervals during authorized Start-Up Periods, Shutdown Periods, or Testing Periods for Supplier g;</li> </ul>
$L$	=	the set of all hours in the Dispatch Day
$EI_{gi}^{RT}$	=	either, as the case may be: <ul style="list-style-type: none"> <li>(i) if <math>EOP_{ig} &gt; AE_{ig}</math> then <math>\min(\max(AE_{ig}, RTS_{enig}), EOP_{ig})</math>; or</li> <li>(ii) if otherwise, then <math>\max(\min(AE_{ig}, RTS_{enig}), EOP_{ig})</math>.</li> </ul>

$EI_{gi}^{DA}$  = Energy scheduled in the Day-Ahead Market to be provided or withdrawn by Supplier g in the hour that includes RTD interval i expressed in terms of MW;

$RTSen_{ig}$  = Real-time Energy scheduled for Supplier g in interval i, and calculated as the arithmetic average of the 6-second AGC Base Point Signals sent to Supplier g during the course of interval i expressed in terms of MW;

$AE_{ig}$  = either, (1) when scheduled to withdraw, average Energy injections plus average Demand Reductions minus average Energy withdrawals by Supplier g in interval i but not more than  $RTSen_{ig}$  plus any Compensable Overgeneration expressed in terms of MW; or (2) otherwise, average Energy injections plus average Demand Reductions minus average Energy withdrawals by Generator g in interval i expressed in terms of MW;

$EOP_{ig}$  = the Economic Operating Point of Supplier g in interval i expressed in terms of MW;

$NASR_{gi}^{TOT}$  = Net Ancillary Services revenue, expressed in terms of \$, paid to Supplier g as a result of either having been committed Day-Ahead to operate in the hour that includes RTD interval i or having operated in interval i which is computed by summing the following: (1) Voltage Support Service payments received by that Supplier for that RTD interval, if it is not a Supplier of Installed Capacity; (2) Regulation Service payments that would be made to that Supplier for that hour based on a Performance Index of 1, less the Regulation Capacity and Regulation Movement Bids placed by that Supplier to provide Regulation Service in that hour at the time it was committed to produce Energy for the LBMP Market and/or Ancillary Services to do so; (3) payments made to that Supplier for providing Spinning Reserve or synchronized 30-Minute Reserve in that hour, less the Bid placed by that Supplier to provide such reserves in that hour at the time it was scheduled to do so; and (4) Lost Opportunity Cost payments made to that Supplier in that hour as a result of reducing that Supplier's output in order for it to provide Voltage Support Service.

$NASR_{gi}^{DA}$  = The proportion of the Day-Ahead net Ancillary Services revenue, expressed in terms of \$, that is applicable to interval i calculated by multiplying the  $NASR_{gh}^{DA}$  for the hour that includes interval i by  $s_i/3600$ .

$RRAP_{gi}$  = Regulation Revenue Adjustment Payment for Supplier g in RTD interval i expressed in terms of \$.

$RRAC_{gi}$  = Regulation Revenue Adjustment Charge for Supplier g in RTD interval i expressed in terms of \$.

### **18.4.3 Bids Used For Intervals at the End of the Hour**

For RTD intervals in an hour that start 55 minutes or later after the start of that hour, a Bid used to determine real-time BPCG in Section 18.4.2 will be the Bid for the next hour in accordance with ISO Procedures. For RTD-CAM intervals in an hour that start 50 minutes or later after the start of that hour, a Bid used to determine real-time BPCG in Section 18.4.2 will be the Bid for the next hour, in accordance with ISO Procedures.

## **18.5 BPCG For Generators and Aggregations In Supplemental Event Intervals**

### **18.5.1 Eligibility for BPCG for Generators and Aggregations in Supplemental Event Intervals**

#### **18.5.1.1 Eligibility**

For intervals in which the ISO has called a large event reserve pick-up, as described in Section 4.4.4.1.1 of this ISO Services Tariff, or an emergency under Section 4.4.4.1.2 of this ISO Services Tariff, any Supplier who meets the eligibility requirements for a real-time Bid Production Cost guarantee payment described in subsection 18.4.1.1 of this Attachment C, shall be eligible to receive a BPCG under this Section 18.5.

#### **18.5.1.2 Non-Eligibility (includes both partial and complete exclusions)**

(A) Notwithstanding subsection 18.5.1.1, a Supplier shall not be eligible to receive a Bid Production Cost guarantee payment for Supplemental Event Intervals if the Supplier is not eligible for a real-time Bid Production Cost guarantee payment for the reasons described in Section 18.4.1.2 of this Attachment C.

(B) Notwithstanding subsection 18.5.1.1, Incremental Energy Bid costs and Minimum Generation Bids that exceed \$1,000/MWh are only eligible for inclusion in a real-time Bid Production Cost guarantee payment for Supplemental Event Intervals, in accordance with Sections 21.4.1 and 23.7 of this ISO Services Tariff.

#### **18.5.1.3 Additional Eligibility**

Notwithstanding Section 18.5.1.2(A), a Supplier shall be eligible to receive a Bid Production Cost guarantee payment for a Generator or Aggregation providing energy during Supplemental Event Intervals occurring as a result of an ISO emergency under Section 4.4.4.1.2 of this ISO Services Tariff regardless of bid mode used for the day.

### 18.5.2 Formula for Determining BPCG for Generators and Aggregations in Supplemental Event Intervals

Real-Time Bid Production Cost Guarantee Payment for Generator or Aggregation g, which is not an Energy Storage Resource or an Aggregation that contains Energy Storage Resource(s) =

$$\sum_{i \in P} \left( \max \left( \left( \int_{\max(EI_{gi}^{DA}, MGI_{gi}^{RT})}^{\max(EI_{gi}^{RT}, MGI_{gi}^{RT})} C_{gi}^{RT} + MGC_{gi}^{RT} * (MGI_{gi}^{RT} - MGI_{gi}^{DA}) * \frac{S_i}{3600} \right), -LBMP_{gi}^{RT} * (EI_{gi}^{RT} - EI_{gi}^{DA}) - (NASR_{gi}^{TOT} - NASR_{gi}^{DA}) - RRAP_{gi} + RRAC_{gi} \right), 0 \right)$$

Real-Time Bid Production Cost Guarantee for Supplier g, which is an Energy Storage Resource or an Aggregation that contains Energy Storage Resource(s) =

$$\text{Max} \left( 0, \sum_{i \in P} (InjBPCG_{gi} + WthBPCG_{gi}) \right)$$

where, when an Energy Storage Resource or an Aggregation that contains Energy Storage Resource(s) has a real-time schedule to inject Energy:

$$InjBPCG_{gi} = \left( \left( \int_{\max(EI_{gi}^{DA}, 0)}^{EI_{gi}^{RT}} C_{gi}^{RT} - LBMP_{gi}^{RT} * (EI_{gi}^{RT} - \max(EI_{gi}^{DA}, 0)) * \frac{S_i}{3600} \right) - (NASR_{gi}^{TOT} - NASR_{gi}^{DA}) - RRAP_{gi} + RRAC_{gi} \right)$$

and, when an Energy Storage Resource or an Aggregation that contains Energy Storage Resource(s) has a real-time schedule to withdraw Energy =

$$WthBPCG_{gi} = \left( \left( \int_{\min(EI_{gi}^{DA}, 0)}^{EI_{gi}^{RT}} C_{gi}^{RT} - LBMP_{gi}^{RT} * (EI_{gi}^{RT} - \min(EI_{gi}^{DA}, 0)) \right) * \frac{S_i}{3600} \right) - (NASR_{gi}^{TOT} - NASR_{gi}^{DA}) - RRAP_{gi} + RRAC_{gi}$$

where:

$Supplier_g$  = Generator  $g$  or Aggregation  $g$ ;

$P$  = the set of Supplemental Event Intervals in the Dispatch Day but excluding any intervals in which there are maximum generation pickups or large event reserve pickups where  $EI_{gi}^{RT}$  is less than or equal to  $EI_{gi}^{DA}$ ; and

$EI_{gi}^{RT}$  = (i) for any intervals in which there are maximum generation pickups, and the three intervals following, for Suppliers in the location for which the maximum generation pickup has been called -- the average Actual Energy Injections, expressed in MWh, for Generator  $g$  in interval  $i$ , and for all other Suppliers  $EI_{gi}^{RT}$  is as defined in Section 18.4.2 above.

(ii) for any intervals in which there are large event reserve pickups and the three intervals following,  $EI_{gi}^{RT}$  is as defined in Section 18.4.2 above.

$C_{gi}^{RT}$  = Bid cost submitted by Supplier  $g$ , or when applicable the mitigated Bid cost for Supplier  $g$ , in the RTD for the hour that includes RTD interval  $i$  expressed in terms of \$/MWh, except in hours in which the NYISO has increased Supplier  $g$ 's minimum operating level, either (i) at the Supplier's request, or (ii) in order to reconcile the ISO's dispatch with the Supplier's actual output or to address reliability concerns that arise because the Supplier is not following Base Point Signals, in which case  $C_{gi}^{RT}$  shall be deemed to be zero;

The definition of all other variables is identical to those defined in Section 18.4 above.

In the event that the ISO re-institutes penalties for poor Regulation Service performance under Section 15.3.8 of Rate Schedule 3 such penalties will not be taken into account when calculating supplemental payments under this Attachment C.

## **18.6 Real-Time BPCG For External Transactions**

External Transactions are not eligible to receive Bid Production Cost guarantee payments in the Real-Time Market.



**18.7. BPCG for Long Start-Up Time Generators Whose Starts are Aborted by the ISO Prior to their dispatch**

**18.7.1 Eligibility for BPCG for Long Start-Up Time Generators Whose Starts Are Aborted by the ISO Prior to their Dispatch**

A Supplier that bids on behalf of a long start-up time Generator (i.e., a Generator that cannot be scheduled by SCUC to start up in time for the next Dispatch Day) that is committed by the ISO for reliability purposes as a result of a Supplemental Resource Evaluation and whose start is aborted by the ISO prior to its dispatch, as described in Section 4.2.5 of the ISO Services Tariff, shall be eligible to receive a Bid Production Cost guarantee payment under this Section 18.7.

**18.7.2 Methodology for Determining BPCG for Long Start-Up Time Generators Whose Starts are Aborted by the ISO Prior to their Dispatch**

A Supplier whose long start-up time Generator's start-up is aborted shall receive a prorated portion of its Start-Up Bid submitted for the hour in which the ISO requested that the Generator begin its start-up sequence, based on the portion of the start-up sequence that it has completed prior to the signal to abort the start-up (*e.g.*, if a long start-up time Generator with a seventy-two (72) hour start-up time has its start-up sequence aborted after forty-eight (48) hours, it would receive two-thirds (2/3) of its Start-Up Bid).

## 18.8 BPCG For Demand Reduction In The Day-Ahead Market

### 18.8.1 Eligibility for BPCG for Demand Reduction in the Day-Ahead Market

A Demand Reduction Provider that bids a Demand Side Resource that is committed by the ISO in the Day-Ahead Market to provide Demand Reduction shall be eligible to receive a Bid Production Cost guarantee payment under this Section 18.8. However, incremental Curtailment Bid costs and minimum Curtailment initiation Bids that exceed \$1,000/MWh are only eligible for inclusion in a Day-Ahead Bid Production Cost guarantee payment in accordance with Sections 21.4.1 and 23.7 of this ISO Services Tariff.

### 18.8.2 Formula for Determining BPCG for Demand Reduction in the Day-Ahead Market

*Day-Ahead BPCG for Demand Reduction Provider  $d$  =*

$$\text{Max} \left( \sum_{h=1}^N (\text{MinCurCost}_d^h + \text{IncrCurCost}_d^h - \text{CurRev}_d^h) + \text{CurInitCost}_d, 0 \right)$$

where:

$$\text{CurInitCost}_d = \left( \sum_{h=1}^N (\text{Min}(\text{ActCur}_d^h, \text{SchdCur}_d^h)) / \left( \sum_{h=1}^N \text{SchdCur}_d^h \right) \right) * \text{CurCost}_d$$

$$\text{MinCurCost}_d^h = \text{Min} \left( (\text{max}(\text{ActCur}_d^h, 0), \text{MinCur}_d^h) \right) * \text{MinCurBid}_d^h$$

$$\text{IncrCurCost}_d^h = \left( \begin{array}{c} \text{max}(\text{MinCur}_d^h, \text{min}(\text{SchdCur}_d^h, \text{ActCur}_d^h)) \\ \int_{\text{MinCur}_d^h} \text{IncrCurBid}_d^h \end{array} \right)$$

$$\text{CurRev}_d^h = \text{LBMP}_{dh}^{DA} * \text{min}(\text{max}(\text{ActCur}_d^h, 0), \text{SchdCur}_d^h)$$

$N$  = number of hours in the Day-Ahead Market day.

$CurInitCost_d$	=	daily Curtailment Initiation Cost credit for Day-Ahead Demand Reduction Provider $d$ ;
$MinCurCost_d^h$	=	minimum Curtailment cost credit for Day-Ahead Demand Reduction Provider $d$ in hour $h$ ;
$IncrCurCost_d^h$	=	incremental Curtailment cost credit for Day-Ahead Demand Reduction Provider $d$ for hour $h$ ;
$CurCost_d$	=	total bid Curtailment Initiation Costs for Day-Ahead Demand Reduction Provider $d$ for the day;
$CurRev_d^h$	=	actual revenue for Day-Ahead Demand Reduction Provider $d$ in hour $h$ ;
$ActCur_d^h$	=	actual Energy curtailed by Day-Ahead Demand Reduction Provider $d$ in hour $h$ expressed in terms of MWh;
$SchdCur_d^h$	=	Energy scheduled Day-Ahead to be curtailed by Day-Ahead Demand Reduction Provider $d$ in hour $h$ expressed in terms of MWh;
$MinCurBid_d^h$	=	minimum Curtailment initiation Bid submitted by Day-Ahead Demand Reduction Provider $d$ for hour $h$ expressed in terms of \$/MWh;
$IncrCurBid_d^h$	=	Bid cost submitted by Day-Ahead Demand Reduction Provider $d$ for hour $h$ expressed in terms of \$/MWh;
$MinCur_d^h$	=	Energy scheduled Day-Ahead to be produced by the minimum Curtailment segment of Day-Ahead Demand Reduction Provider $d$ for hour $h$ expressed in terms of MWh; and
$LBMP_{dh}^{DA}$	=	Day-Ahead LBMP for Day-Ahead Demand Reduction Provider $d$ for hour $h$ expressed in \$/MWh.

## **18.9 BPCG For Special Case Resources**

### **18.9.1 Eligibility for Special Case Resources BPCG**

Any Supplier that bids a Special Case Resource that is committed by the ISO for an event in the Real-Time Market shall be eligible to receive a Bid Production Cost guarantee payment under this Section 18.9. Suppliers shall not be eligible for a Special Case Resource Bid Production Cost guarantee payment for the period over which a Special Case Resource is performing a test.

### **18.9.2 Methodology for Determining Special Case Resources BPCG**

A Special Case Resource Bid Production Cost guarantee payment shall be made when the Minimum Payment Nomination for any Special Case Resource committed by the ISO over the period of requested performance or four (4) hours, whichever is greater, exceeds the LBMP revenue received for performance by that Special Case Resource; provided, however, that the ISO shall set to zero the Minimum Payment Nomination for Special Case Resource Capacity in each interval in which such capacity was scheduled Day-Ahead to provide Operating Reserves, Regulation Service or Energy.

**18.10 BPCG For Demand Side Resources Providing Synchronized Operating Reserves and / or Regulation Service In The Day-Ahead Market**

**18.10.1 Eligibility for BPCG for Demand Side Resources Providing Synchronized Operating Reserves and / or Regulation Service in the Day-Ahead Market**

Any Supplier that bids a Demand Side Resource that is committed by the ISO to provide synchronized Operating Reserves and/or Regulation Service in the Day-Ahead Market shall be eligible to receive a Bid Production Cost guarantee payment under this Section 18.10.

**18.10.2 Formula for Determining BPCG for Demand Side Resources Providing Synchronized Operating Reserves and / or Regulation Service in the Day-Ahead Market**

A Bid Production Cost guarantee payment to a Demand Side Resource with a synchronized Operating Reserves and/or Regulation Service schedule in the Day-Ahead Market shall be calculated as follows:

BPCG for Demand Side Resource d Providing synchronized Operating Reserves and/or Regulation Service Day-Ahead =

$$\max\left(\left(-\sum_{h=1}^N NASR_{dh}^{DA}\right), 0\right)$$

where:

$N$  = number of hours in the Day-Ahead Market day.

$NASR_{dh}^{DA}$  = Net Ancillary Services revenue, in \$, paid to Demand Side Resource d as a result of having been committed to provide Ancillary Services Day-Ahead in hour h which is computed by summing the following: (1) Regulation Service payments made to that Demand Side Resource for all Regulation Service it is scheduled Day-Ahead to provide in that hour, less Demand Side Resource d's Day-Ahead Regulation Capacity Bid to provide that amount of Regulation Service in that hour; and (2) payments made to Demand Side Resource d for providing Spinning Reserve and synchronized 30-Minute Reserve in that hour if it is committed Day-Ahead to provide such reserves in that hour, less Demand Side Resource d's Day-Ahead Bid to provide Spinning Reserve and synchronized 30-Minute Reserve in that hour.

**18.11 BPCG For Demand Side Resources Providing Synchronized Operating Reserves and / or Regulation Service In The Real-Time Market**

**18.11.1 Eligibility for BPCG for Demand Side Resources Providing Synchronized Operating Reserves and / or Regulation Service in the Real-Time Market**

Any Supplier that bids a Demand Side Resource that is committed by the ISO to provide synchronized Operating Reserves and/or Regulation Service in the Real-Time Market shall be eligible to receive a Bid Production Cost guarantee payment under this Section 18.11.

**18.11.2 Formula for Determining BPCG for Demand Side Resources Providing Synchronized Operating Reserves and / or Regulation Service in the Real-Time Market**

A Bid Production Cost guarantee payment to a Demand Side Resource with a synchronized Operating Reserves and/or Regulation Service schedule in the real-time Market shall be calculated as follows:

BPCG for Demand Side Resource  $d$  Providing synchronized Operating Reserves and/or Regulation Service in Real-Time =

$$\max \left( - \sum_{i \in L} (NASR_{di}^{TOT} - NASR_{di}^{DA}), 0 \right)$$

where:

$L$  = set of RTD intervals in the Dispatch Day;

$NASR_{di}^{TOT}$  = Net Ancillary Services revenue, in \$, paid to Demand Side Resource  $d$  as a result of either having been scheduled Day-Ahead in the hour that includes RTD interval  $i$  or having been scheduled in real-time interval  $i$  which is computed by summing the following: (1) Regulation Service payments that would be made to Demand Side Resource  $d$  for that hour based on a Performance Index of 1, less the Regulation Capacity and Regulation Movement Bids placed by Demand Side Resource  $d$  to provide Regulation Service in that hour at the time it was committed to provide Ancillary Services; and (2) payments made to Demand Side Resource  $d$  for providing Spinning Reserve or synchronized 30-Minute Reserve in that hour, less the Bid placed by Demand Side Resource  $d$  to provide such reserves in that hour at the time it was scheduled to do so; and

$NASR_{di}^{DA}$  = The proportion of the Day-Ahead net Ancillary Services revenue, in \$, that is applicable to interval i calculated by multiplying the  $NASR_{dh}^{DA}$  for the hour that includes interval i by the quotient of the number of seconds in RTD interval i divided by 3600.

## **18.12 Proration Of Start-Up Bid For Generators That Are Committed In The Day-Ahead Market, Or Via Supplemental Resource Evaluation**

### **18.12.1 Eligibility to Recover Operating Costs and Resulting Obligations**

Generators committed in the Day-Ahead Market or via SRE that are not able to complete their minimum run time within the Dispatch Day in which they are committed are eligible to include in their Start-Up Bid expected net costs of operating on the day following the dispatch day at the minimum operating level specified for the hour in which the Generator is committed, for the hours necessary to complete the Generator's minimum run time.

Generators that receive Day-Ahead or SRE schedules that are not scheduled to operate in real-time, or that do not operate in real-time, at the MW level included in the Minimum Generation Bid for the first hour of the Generator's Day-Ahead or SRE schedule, for the longer of (a) the duration of the Generator's Day-Ahead or SRE schedule, or (b) the minimum run time specified in the Bid that was accepted for the first hour of the Generator's Day-Ahead or SRE schedule, will have the start-up cost component of the Bid Production Cost guarantee calculation prorated in accordance with the formula specified in Section 18.12.2, below. The rules for prorating the start-up cost component of the Bid Production Cost guarantee calculation apply both to operation within the Dispatch Day and to operation on the day following the Dispatch Day to satisfy the minimum run time specified for the hour in which the Generator was scheduled to start-up on the Dispatch Day.

Rules for calculating the reference level that the NYISO uses to test Start-Up Bids for possible mitigation are included in the Market Power Mitigation Measures that are set forth in Attachment H to the ISO Services Tariff. Proration of the start-up cost component of a Generator's Bid Production Cost guarantee based on the Generator's operation in real-time is different/distinct from the mitigation of a Start-Up Bid.



### 18.12.2 Proration of Eligible Start-Up Cost when a Generator Is Not Scheduled, or Does Not Operate to Meet the Schedule Specified in the Accepted Day-Ahead or SRE Start-Up Bid.

The start-up costs included in the Bid Production Cost guarantee calculation may be reduced *pro rata* based on a comparison of the actual MWs delivered in real-time to an hourly minimum MW requirement. The hourly MWh requirement is determined based on the MW component of the Minimum Generation Bid submitted for the Generator's accepted start hour (as mitigated, where appropriate).

#### 18.12.2.1 Total Energy Required to be Provided in Order to Avoid Proration of a Generator's Start-Up Costs

$$TotMWReq_{g,s} = MinOpMW_{g,s} * n_{g,s}$$

Where:

$TotMWReq_{g,s}$  = Total amount of Energy that Generator g, when started in hour s, must provide for its start-up costs not to be prorated

$MinOpMW_{g,s}$  = Minimum operating level (in MW) specified by Generator g in its hour s Bid

$n_{g,s}$  = The last hour that Generator g must operate when started in hour s to complete both its minimum run time and its Day-Ahead schedule. The variable  $n_{g,s}$  is calculated as follows:

$$n_{g,s} = \max(LastHrDASched_{g,s}, LastMinRunHr_{g,s})$$

Where:

$LastHrDASched_{g,s}$  = The last date/hour in a contiguous set of hours in the Dispatch Day, beginning with hour s, in which Generator g is scheduled to operate in the Day-Ahead Market

$LastMinRunHr_{g,s}$  = The last date/hour in a contiguous set of hours in which Generator g would need to operate to complete its minimum run time if it starts in hour s

### 18.12.2.2 Calculation of Prorated Start-Up Cost

$$ProratedSUC_{g,s} = SubmittedSUC_{g,s} * \frac{\sum_{h=s}^{n_{g,s}} MinOpEnergy_{g,h,s}}{TotalMWReq_{g,s}}$$

Where:

$ProratedSUC_{g,s}$  = the prorated start-up cost used to calculate the Bid Production Cost guarantee for Generator g that is scheduled to start in hour s

$SubmittedSUC_{g,s}$  = the Start-Up Bid submitted (as mitigated, where appropriate) for Generator g that is scheduled to start in hour s

$MinOpEnergy_{g,h,s}$  = the amount of Energy produced during hour h by Generator g during the time required to complete both its minimum run time and its Day-Ahead schedule, if that generator is started in hour s.  $MinOpEnergy_{g,h,s}$  is calculated as follows:

$$MinOpEnergy_{g,h,s} = \min(MetActEnergy_{g,h}, MinOpMW_{g,s})$$

Where:

$MetActEnergy_{g,h}$  = the metered amount of Energy produced by Generator g during hour h

### 18.12.2.3 Additional Rules/Clarifications that Apply to the Calculation of Prorated Start-Up Cost

- a. For any hour that a Generator is derated below the minimum operating level specified in its accepted Start-Up Bid for reliability, either by the ISO or at the request of a Transmission Owner, the Generator will receive credit for that hour as if the Generator had produced metered actual MWh equal to its  $MinOpMW_{g,s}$ .
- b. A Generator must be scheduled and operate in real-time to produce Energy consistent with the  $MinOpMW_{g,s}$  specified in the accepted Start-Up Bid for each hour that it is expected to run. See Section 18.12.2.1, above. These rules do not specify or require any particular bidding construct that must be used to achieve the desired commitment. However, submitting a self-committed Bid may preclude a Generator from receiving a BPCG. See, e.g., Sections 18.2.1.2.2 and 18.4.1.2.3 of this Attachment C.

## **23.3 Criteria for Imposing Mitigation Measures**

### **23.3.1 Identification of Conduct Inconsistent with Competition**

Conduct that may potentially warrant the imposition of a mitigation measure includes the categories described in Section 23.2.4 above, which shall be detected through the use of indices and screens developed, adopted and made available as specified in Attachment O. The thresholds listed in Sections 23.3.1.1 to 23.3.1.3 below shall be used to identify substantial departures from competitive conduct indicative of an absence of workable competition.

#### **23.3.1.1 Thresholds for Identifying Physical Withholding**

23.3.1.1.1 The following initial thresholds will be employed by the ISO to identify physical withholding of a Generator or generation or an Aggregation or a CSR Scheduling Limit by a Market Party and its Affiliates:

23.3.1.1.1.1 Except for conduct addressed in Section 23.3.1.1.1.2: Withholding that exceeds (i) 10 percent of a Generator's or an Aggregation's capability or 10 percent of a CSR Scheduling Limit, or (ii) 100 MW of a Generator's or an Aggregation's capability or 100 MW of a CSR Scheduling Limit, or (iii) 5 percent of the total capability of a Market Party and its Affiliates, or (iv) 200 MW of the total capability of a Market Party and its Affiliates.

For a Generator or an Aggregation or a Market Party in a Constrained Area for intervals in which an interface or facility into the area in which the Generator or generation or Aggregation is located has a Shadow Price greater than \$0.04/MWh, indicating an active constraint, withholding that exceeds (i) 10 percent of a Generator's or an Aggregation's capability or 10 percent of a CSR Scheduling Limit, or (ii) 50 MW of a Generator's or an Aggregation's capability

or 50 MW of a CSR Scheduling Limit, or (iii) 5 percent of the total capability of a Market Party and its Affiliates, or (iv) 100 MW of the total capability of a Market Party and its Affiliates.

23.3.1.1.1.2 Operating a Generator or generation or an Aggregation in real-time at a lower output level than would have been expected had the Market Party's and its Affiliate's Generator or generation or Aggregation followed the ISO's dispatch instructions, resulting in a difference in output that exceeds (i) 15 minutes times a Generator's or Aggregation's stated response rate per minute at the output level that would have been expected had the Generator or Aggregation followed the ISO's dispatch instructions, or (ii) 100 MW for a Generator or Aggregation, or (iii) 200 MW of the total capability of a Market Party and its Affiliates. For a Generator or an Aggregation or a Market Party in a Constrained Area for intervals in which an interface or facility into the area in which the generation or Aggregation is located has a Shadow Price greater than \$0.04/MWh, indicating an active constraint, operating a Generator or generation or an Aggregation in real-time at a lower output level than would have been expected had the Market Party's and its Affiliate's Generator or generation or Aggregation followed the ISO's dispatch instructions, resulting in a difference in output that exceeds (i) 15 minutes times a Generator's or an Aggregation's stated response rate per minute at the output level that would have been expected had the Generator or Aggregation followed the ISO's dispatch instructions, or (ii) 50 MW of a Generator's or an Aggregation's capability, or (iii) 100 MW of the total capability of a Market Party and its Affiliates.

23.3.1.1.2 The amounts of generating capacity considered withheld for purposes of applying the thresholds in this Section 23.3.1.1 shall include unjustified deratings, and the portions of a Generator's or an Aggregation's output that is not Bid or subject to economic withholding. The amounts deemed withheld shall not include (i) generating output that is subject to a forced outage, subject to verification by the ISO as may be appropriate that an outage was forced, (ii) capacity that is out of service for maintenance in accordance with an ISO maintenance schedule, or (iii) generating capacity that is not Bid in the Real-Time Market, because and to the extent it would have to use unauthorized natural gas to operate, subject to verification by the ISO as may be appropriate that operation would require the use of unauthorized natural gas. See Section 23.3.1.4.6.2.1.1 below.

23.3.1.1.3 A transmission facility shall be deemed physically withheld if it is not operated in accordance with ISO instructions and such failure to conform to ISO instructions causes or contributes to transmission congestion. A transmission facility shall not be deemed withheld if it is subject to a forced outage or is out of service for maintenance in accordance with an ISO maintenance schedule.

### **23.3.1.2 Thresholds for Identifying Economic Withholding**

23.3.1.2.1 The following thresholds shall be employed by the ISO to identify economic withholding that may warrant the mitigation of a Generator or an Aggregation in an area that is not a Constrained Area, or in a Constrained Area during periods not subject to transmission constraints affecting the Constrained Area, and shall be determined with respect to a reference level determined as specified in Section 23.3.1.4:

23.3.1.2.1.1 Incremental Energy and Minimum Generation Bids: An increase exceeding 300 percent or \$100 per MWh, whichever is lower; provided, however, that Incremental Energy or Minimum Generation Bids below \$25 per MWh shall be deemed not to constitute economic withholding when evaluating Bids to provide Energy.

23.3.1.2.1.1.1 Threshold for Bids to withdraw Incremental Energy: an increase exceeding 300 percent or \$100 per MWh, whichever is lower. However, the threshold for Bids to withdraw Incremental Energy that have an associated reference level that is between -\$25 and \$25 per MWh (inclusive) is, instead, \$75 per MWh.

23.3.1.2.1.1.2 Additional Thresholds used to assess Bids for Generators and Aggregations that the ISO evaluates as a price spread for purposes of scheduling and dispatch.

The following hourly and daily thresholds will be employed to evaluate the spread between the minimum and maximum dollar values included in an Energy Storage Resource's or an Aggregation that consists solely of Energy Storage Resources' multi-step incremental Energy Bid. The time periods over which the comparisons are performed are specified below.

(a) Hourly Threshold (applies to both the Day-Ahead and Real-Time Markets)—the Incremental Energy Bid spread is compared to the Incremental Energy reference level spread for the same market hour. The Bid spread is determined by subtracting the least Incremental Energy Bid price from the greatest Incremental Energy Bid price. This value is compared to the reference

level spread, which is determined by subtracting the Incremental Energy reference level price that corresponds to the least Incremental Energy Bid price from the Incremental Energy reference level price that corresponds to the greatest Incremental Energy Bid price. A Bid spread that exceeds the reference level spread by more than 300 percent or by more than \$100 per MWh, whichever is lower, exceeds the conduct threshold. However, if the reference level spread is less than \$25 per MWh, then the Hourly Threshold shall be \$75 per MWh.

(b) Daily Threshold (only applies to the Day-Ahead Market)—the Incremental Energy Bid spread across the Day-Ahead market day is compared to the Incremental Energy reference level spread. The Bid spread is determined by subtracting the least Incremental Energy Bid price submitted for any hour of the Day-Ahead market day (“Hour X”) from the greatest Incremental Energy Bid price submitted for any hour of the same market-day (“Hour Y”). Hour X and Hour Y can be the same market hour. This value is compared to the reference level spread, which is determined by subtracting the Incremental Energy reference level price Bid that corresponds to the least Incremental Energy Bid price in Hour X from the Incremental Energy reference level price that corresponds to the greatest Incremental Energy Bid price in Hour Y. A Bid spread that exceeds the reference level spread by more than 300 percent or by more than \$100 per MWh, whichever is lower, exceeds the conduct threshold. However, if the reference level spread is less than \$25 per MWh, then the Hourly Threshold shall be \$75 per MWh.

#### 23.3.1.2.1.2 Operating Reserves and Regulation Service Bids:

23.3.1.2.1.2.1 Operating Reserves and Regulation Capacity Bids: A 300 percent increase or an increase of \$50 per MW, whichever is lower; provided, however, that such Bids below \$5 per MW shall be deemed not to constitute economic withholding.

23.3.1.2.1.2.2 Regulation Movement Bids: A 300 percent increase.

23.3.1.2.1.3 Start-Up Bids: A 200 percent increase.

23.3.1.2.1.4 Time-based Bid parameters: An increase of 3 hours, or an increase of 6 hours in total for multiple time-based Bid parameters. Time-based Bid parameters include, but are not limited to, start-up times, minimum run times, minimum down times, and temporal minimum and maximum parameters related to the withdrawal and injection of Energy by Withdrawal-Eligible Generators or Aggregations containing Withdrawal-Eligible Generators.

23.3.1.2.1.5 Bid parameters expressed in units other than time or dollars, including the MW component of a Minimum Generation Bid (also referred to as the “minimum operating level”): A 100 percent increase for parameters that are minimum values, or a 50 percent decrease for parameters that are maximum values (including but not limited to ramp rates, maximum stops, and operating parameters related to the withdrawal and injection of Energy by Withdrawal-Eligible Generators or Aggregations containing Withdrawal-Eligible Generator(s)).

23.3.1.2.2 The following thresholds shall be employed by the ISO to identify economic withholding that may warrant the mitigation of a Generator or an Aggregation in an area that is a Constrained Area, and shall be determined with respect to a reference level determined as specified in Section 23.3.1.4:



23.3.1.2.2.1 For Energy and Minimum Generation Bids for the Real-Time Market: for intervals in which an interface or facility into the area in which a Generator or an Aggregation is located has a Shadow Price greater than \$0.04/MWh, indicating an active constraint, the lower of the thresholds specified for areas that are not Constrained Areas or a threshold determined in accordance with the following formula:

$$\text{Threshold} = \frac{2\% * \text{Average Price} * 8760}{\text{Constrained Hours}}$$

where:

*Average Price* = the average price in the Real-Time Market in the Constrained Area over the past 12 months, adjusted for fuel price changes, and adjusted for Out-of-Merit Generation dispatch as feasible and appropriate; and

*Constrained Hours* = the total number of minutes over the prior 12 months, converted to hours (retaining fractions of hours), in which the real-time Shadow Price has been greater than \$0.04/MWh, indicating an active constraint, on any interface or facility leading into the Constrained Area in which the Generator is located. For the In-City area, “Constrained Hours” shall also include the number of minutes that a Storm Watch is in effect. Determination of the number of Constrained Hours shall be subject to adjustment by the ISO to account for significant changes in system conditions.

23.3.1.2.2.2 For so long as the In-City area is a Constrained Area, the thresholds specified in subsection 23.3.1.2.2.1 shall also apply: (a) in intervals in which the transmission capacity serving the In-City area is subject to Storm Watch limitations; (b) to an In-City Generator or Aggregation that is operating as Out-of-Merit Generation; and (c) to a Generator or an Aggregation dispatched as a result of a Supplemental Resource Evaluation.

23.3.1.2.2.3 For Energy and Minimum Generation Bids for the Day-Ahead Market: for all Constrained Hours for the Generator or Aggregation being Bid, a threshold

determined in accordance with the formula specified in subsection 23.3.1.2.2.1 above, but where Average Price shall mean the average price in the Day-Ahead Market in the Constrained Area over the past twelve months, adjusted for fuel price changes, and where Constrained Hours shall mean the total number of hours over the prior 12 months in which the Shadow Price in the Day-Ahead Market has been greater than \$0.04/MWh, indicating an active constraint, on any interface or facility leading into the Constrained Area in which the Generator or Aggregation is located. Determination of the number of Constrained Hours shall be subject to adjustment by the ISO to account for significant changes in system conditions.

23.3.1.2.2.4 For Start-Up Bids; a 50% increase.

23.3.1.2.2.5 The thresholds listed in Sections 23.3.1.2.1.2 and 23.3.1.2.1.4 through 23.3.1.2.1.5.

23.3.1.2.2.6 For intervals in which an interface or facility into the area in which a Generator is located has a Shadow Price greater than \$0.04/MWh, indicating an active constraint in the Day-Ahead Market or in the Real-Time Market, the additional thresholds used to assess Bids for Generators and Aggregations that the ISO evaluates as a price spread for purposes of scheduling and dispatch are set forth below. The evaluation method is described in Section 23.3.1.2.1.1.2 of these Mitigation Measures.

(a) Hourly Threshold (applies to both the Day-Ahead and Real-Time Markets)—the Incremental Energy Bid spread is compared to the Incremental Energy reference level spread for the same market hour. The Bid spread is determined by subtracting the least Incremental Energy Bid price from the

greatest Incremental Energy Bid price. This value is compared to the reference level spread, which is determined by subtracting the Incremental Energy reference level price that corresponds to the least Incremental Energy Bid price from the Incremental Energy reference level price that corresponds to the greatest Incremental Energy Bid price. A Bid spread that exceeds the reference level spread by more than the lower of the threshold specified for areas that are not Constrained Areas, or a threshold determined in accordance with the formulae set forth in Section 23.3.1.2.2.1 (real-time) or Section 23.3.1.2.2.3 (Day-Ahead) of these Mitigation Measures, exceeds the conduct threshold.

(b) Daily Threshold (only applies to the Day-Ahead Market)—the Incremental Energy Bid spread across the Day-Ahead market day is compared to the Incremental Energy reference level spread. The Bid spread is determined by subtracting the least Incremental Energy Bid price submitted for any hour of the Day-Ahead market day (“Hour X”) from the greatest Incremental Energy Bid price submitted for any hour of the same market-day (“Hour Y”). Hour X and Hour Y can be the same market hour. This value is compared to the reference level spread, which is determined by subtracting the Incremental Energy reference level price Bid that corresponds to the least Incremental Energy Bid price in Hour X from the Incremental Energy reference level price that corresponds to the greatest Incremental Energy Bid price in Hour Y. A Bid spread that exceeds the reference level spread by more than the lower of the threshold specified for areas that are not Constrained Areas, or a threshold determined in accordance with the

formula set forth in Section 23.3.1.2.2.3 (Day-Ahead) of these Mitigation Measures, exceeds the conduct threshold.

23.3.1.2.3 The following thresholds shall be employed by the ISO to identify economic withholding that requires the mitigation of a Generator or Aggregation that is committed outside the ISO's economic evaluation process to protect NYCA or local area reliability in an area that is not a designated Constrained Area. Whether the thresholds specified in Sections 23.3.1.2.3.3(i) through 23.3.1.2.3.3(vi) below have been exceeded shall be determined with respect to a reference level determined as specified in Section 23.3.1.4 of these Mitigation Measures.

If provisions 23.3.1.2.3.1 and 23.3.1.2.3.2 below are met for a Generator or Aggregation in the New York Control Area that is not located in a designated Constrained Area, the ISO shall substitute a reference level for each Bid, or component of a Bid, for which the applicable threshold specified in provisions 23.3.1.2.3.3(i) through 23.3.1.2.3.3(vi) below is exceeded. Where mitigation is determined to be appropriate, the mitigated results will be used in all aspects of the NYISO's settlement process.

23.3.1.2.3.1 The Generator or Aggregation was committed outside the ISO's economic merit order selection process to protect or maintain New York Control Area or local system reliability as a Day-Ahead Reliability Unit ("DARU") or via a Supplemental Resource Evaluation ("SRE"), or was committed as a DARU or via SRE and was also dispatched Out-of-Merit above its minimum generation level to protect or maintain New York Control Area or local system reliability; and

23.3.1.2.3.2 One of the following three (i) – (iii) conditions in this Section 23.3.1.2.3.2 must be satisfied in order for mitigation to be applied:

- i the Market Party (including its Affiliates) that owns or offers the Generator or Aggregation is the only Market Party that could effectively solve the reliability need for which the Generator or Aggregation was committed or dispatched, or
- ii when evaluating an SRE that was issued to address a reliability need that multiple Market Parties' Generators or Aggregations are capable of solving, the NYISO only received Bids from one Market Party (including its Affiliates), or
- iii when evaluating a DARU, if the Market Party was notified of the need for the reliability commitment of its Generator or Aggregation prior to the close of the Day-Ahead Market.

23.3.1.2.3.3 The Bids or Bid components submitted for the Generator or Aggregation that were accepted outside the economic evaluation process to protect or maintain New York Control Area or local system reliability:

- i exceeded the Generator's Minimum Generation Bid reference level by the greater of 10% or \$10/MWh, or
- ii. exceeded the Generator's or Aggregation's Incremental Energy Bid reference level by the greater of 10% or \$10/MWh, or
- iii. exceeded the Generator's Start-Up Bid reference level by 10%, or
- iv. exceeded the Generator's minimum run time, start-up time, and minimum down time reference levels by more than one hour in aggregate, or
- v. exceeded the Generator's minimum generation MW reference level by more than 10%, or

- vi. decreased the Generator's maximum number of stops per day below the Generator's reference level by more than one stop per day, or to one stop per day.

23.3.1.2.4 For In-City Generators or Aggregations committed in the Day-Ahead Market for local reliability, additional Mitigation Measures are specified in Section 23.5.2.1.

### **23.3.1.3 Thresholds for Identifying Uneconomic Production and Uneconomic Withdrawal of Energy**

23.3.1.3.1 The following thresholds will be employed by the ISO to identify uneconomic production that may warrant the imposition of a mitigation measure:

23.3.1.3.1.1 Energy scheduled at an LBMP that is less than the applicable reference level minus the greater of \$25 per MWh or 80% of the applicable reference level (*i.e.*,  $LBMP < (Applicable\ Reference\ Level - \max(\$25, 80\% \times Applicable\ Reference\ Level))$ ); provided, however, the ISO shall not evaluate Generators to identify uneconomic production when the applicable LBMP is greater than \$25 per MWh; or

23.3.1.3.1.2 Real-time output from a Generator or generation or an Aggregation resulting in real-time operation at a higher output level than would have been expected had the Market Party's and the Affiliate's Generator or generation or Aggregation followed the ISO's dispatch instructions, if such failure to follow ISO dispatch instructions in real-time causes or contributes to transmission congestion, and it results in an output difference that exceeds (i) 15 minutes times a Generator's or an Aggregation's stated response rate per minute at the output level that would have been expected had the Generator or Aggregation followed the ISO's dispatch instructions, or (ii) 100 MW for a Generator or an

Aggregation, or (iii) 200 MW of the total capability of a Market Party and its Affiliates.

23.3.1.3.2 The following thresholds will be employed by the ISO to identify uneconomic withdrawals of Energy by Withdrawal-Eligible Generators or Aggregations containing Withdrawal-Eligible Generator(s) that may warrant the imposition of a mitigation measure:

23.3.1.3.2.1 Energy withdrawn at an LBMP that is at least 300 percent or \$75/MWh, whichever is greater, more than the applicable reference level of a Withdrawal-Eligible Generator or of an Aggregation that contains Withdrawal-Eligible Generator(s); provided, however, that schedules to withdraw Energy that are determined by the ISO based on the economics of an offer to withdraw Energy, including the Incremental Energy Bid spread of a Withdrawal-Eligible Generator or of an Aggregation that contains Withdrawal-Eligible Generator(s), shall not be considered uneconomic withdrawals under this Section 23.3.1.3.2.1; or

23.3.1.3.2.2 Real-time withdrawals by a Withdrawal-Eligible Generator or an Aggregation containing Withdrawal-Eligible Generator(s) resulting in different real-time operation than would have been expected had the Market Party's and the Affiliate's Generator or generation or Aggregation followed the ISO's dispatch instructions, if such failure to follow ISO dispatch instructions in real-time causes or contributes to transmission congestion, and it results in an output difference that exceeds (i) 15 minutes times a Generator's or an Aggregation's stated response rate per minute at the output level that would have been expected had the Generator followed the ISO's dispatch instructions, or (ii) 100 MW for a

Generator or an Aggregation, or (iii) 200 MW of the total capability of a Market Party and its Affiliates.

#### **23.3.1.4 Reference Levels**

23.3.1.4.1 Except as provided in Sections 23.3.1.4.3 – 23.3.1.4.6 below, a reference level for each component of a Generator's or an Aggregation's Bid to provide Energy shall be calculated on the basis of the following methods, listed in the order of preference subject to the existence of sufficient data.

A reference level for an Energy Storage Resource's or an Aggregation's Incremental Energy Bid to provide or withdraw Energy shall be calculated consistent with Sections 23.3.1.4.1.3 or 23.3.1.4.2 below, subject to the existence of sufficient data.

23.3.1.4.1.1 The lower of the mean or the median of a Generator's accepted Bids or Bid components, in hour beginning 6 to hour beginning 21 but excluding weekend and designated holiday hours, in competitive periods over the most recent 90 day period for which the necessary input data are available to the ISO's reference level calculation systems, adjusted for changes in fuel prices consistent with Section 23.3.1.4.6, below. To maintain appropriate reference levels (i) the ISO shall exclude all Incremental Energy and Minimum Generation Bids below \$15/MWh from its development of Bid-based reference levels, (ii) the ISO shall exclude Minimum Generation Bids submitted for a Generator that was committed on the day prior to the Dispatch Day for the hours during the Dispatch Day that the Generator needs to operate in order to complete the minimum run time specified in the Bid it submitted for the hour in which it was committed, and (iii)



the ISO may exclude other Bids that would cause a reference level to deviate substantially from a Generator's marginal cost when developing Bid-based reference levels;

23.3.1.4.1.2 Calculate incremental energy and minimum generation reference levels for a Generator using the mean of the LBMP at the Generator's location during the lowest-priced 50 percent of the hours that the Generator was dispatched over the most recent 90 day period for which the necessary LBMP data are available to the ISO's reference level calculation systems, adjusted for changes in fuel prices consistent with Section 23.3.1.4.6, below. To maintain appropriate reference levels (i) the ISO shall exclude all LBMPs below \$15/MWh from its development of LBMP-based reference levels, (ii) the ISO shall exclude LBMPs during hours when a Generator was scheduled as a Day-Ahead Reliability Unit or via a Supplemental Resource Evaluation or was Out-of-Merit Generation, from its development of that Generator's LBMP-based reference levels, (iii) for a Generator that was committed on the day prior to the Dispatch Day, the ISO shall exclude LBMPs for the hours during the Dispatch Day that the Generator needs to operate in order to complete the minimum run time specified in the Bid it submitted for the hour in which the Generator was committed from the ISO's development of that Generator's LBMP-based reference levels, and (iv) the ISO may exclude LBMPs that would cause a reference level to deviate substantially below a Generator's marginal cost when developing LBMP-based reference levels; or

23.3.1.4.1.3 A level determined in consultation with the Market Party submitting the Bid or Bids at issue, provided such consultation has occurred prior to the occurrence of the conduct being examined by the ISO, and provided the Market Party has provided data on a Generator's or an Aggregation's operating costs in accordance with specifications provided by the ISO.

The reference level for a Generator's or an Aggregation's Energy and Ancillary Service Bids are intended to reflect the Generator's or Aggregation's marginal costs. The ISO's determination of a Generator's or Aggregation's Energy marginal costs shall include an assessment of the Generator's or Aggregation's incremental operating costs in accordance with the following formula:

$$\begin{aligned} & (\text{heat rate} * \text{fuel costs}) + (\text{emissions rate} * \text{emissions allowance price}) \\ & \quad + (\text{other variable operating and maintenance costs}) \\ & \quad + \text{opportunity costs} \end{aligned}$$

Opportunity cost is the cost, in dollars, representing (a) the total net revenue in the future time periods that is expected to be forgone by being dispatched by the ISO in the current time period, or (b) the total net cost in future time periods that is expected to be avoided by being dispatched by the ISO in the current time period.

Opportunity costs are limited to costs that the ISO reasonably determines to be appropriate based on such data as may be furnished by the Market Party or otherwise available to the ISO. Reference levels shall also include such other factors or adjustments as the ISO shall reasonably determine to be appropriate based on such data as may be furnished by the Market Party or otherwise available to the ISO.

23.3.1.4.2 If sufficient data do not exist to calculate a reference level on the basis of either of the first two methods, or if the ISO determines that none of the three methods are applicable to a particular type of Bid component, or an attempt to determine a reference level in consultation with a Market Party has not been successful, or if the reference level produced does not reasonably approximate a Generator's or Aggregation's marginal cost, the ISO shall determine a reference level on the basis of:

23.3.1.4.2.1 the ISO's estimate of the costs or physical parameters of an Electric Facility, taking into account available operating costs data, appropriate input from the Market Party, and the best information available to the ISO; or

23.3.1.4.2.2 an appropriate average of competitive bids of one or more similar Electric Facilities.

23.3.1.4.3 Notwithstanding the foregoing provisions, the reference level for Incremental Energy Bids for New Capacity, excluding Energy Storage Resources and Aggregations, for the three year and six month period following the New Capacity's first production of Energy while synchronously interconnected to the New York State Transmission System shall be the higher of (i) the amount determined in accordance with the provision of Section 23.3.1.4.1 or 23.3.1.4.2, or (ii) the average of the fuel price-adjusted peak LBMPs over the twelve months prior to the New Capacity's first production of Energy while synchronously interconnected to the New York State Transmission System of the New Capacity in the Load Zone in which the New Capacity is located during hours when Generators with operating characteristics similar to the New Capacity would be

expected to run. For entities owning or otherwise controlling the output of capacity in the New York Control Area other than New Capacity, the provisions of this Section 23.3.1.4.3 shall apply only to net additions of capacity during the applicable three year and six month period.

23.3.1.4.4 Notwithstanding the foregoing provisions, a reference level for a Generator's start-up costs Bid shall be calculated on the basis of the following methods, listed in the order of preference subject to the existence of sufficient data:

23.3.1.4.4.1 If sufficient bidding histories under the applicable bidding rules for a given Generator's start-up costs Bids have been accumulated, the lower of the mean or the median of the Generator's accepted start-up costs Bids in competitive periods over the previous 90 days for similar down times, adjusted for changes in fuel prices consistent with Section 23.3.1.4.6 below. However, accepted Start-Up Bids that incorporate anticipated costs of operating on the day after the Dispatch Day in which the Generator is committed in order to permit the Generator to satisfy its minimum run time shall not be used to develop Bid-based start-up reference levels;

23.3.1.4.4.2 A level determined in consultation with the Market Party submitting the Bid or Bids at issue and intended to reflect the costs incurred for a Generator to achieve its specified minimum operating level from an offline state, provided such consultation has occurred prior to the occurrence of the conduct being examined by the ISO, and provided the Market Party has provided data on the Generator's operating costs in accordance with specifications provided by the ISO; or

#### 23.3.1.4.4.3 Generators committed in the Day-Ahead Market or via Supplemental

Resource Evaluation that are not able to complete their minimum run time within the Dispatch Day in which they are committed are eligible to include in their Start-Up Bid expected net costs of operating on the day following the dispatch day at the minimum operating level (in MW) specified in the Generator's Bid for the commitment hour, for the hours necessary to complete the Generator's minimum run time. The NYISO will calculate a start-up reference level that incorporates the net costs the Generator is expected to incur on the day following the Dispatch Day as follows:

##### 23.3.1.4.4.3.1 Calculation of a start-up reference level that includes expected net costs of operating on the day following the Dispatch Day

The NYISO will use the following calculation to develop a reference level that incorporates the costs that a Generator is expected to incur on the day following the Dispatch Day.

$$LateDayAdjusted_{g,i} = StrtUpRef_g + \max \left( 0, MinGenRef_{g,i} * BidMinGen_{g,i} * \sum_{h=0}^{Z_{g,i}-1} SR_{g,h,i} \right)$$

Where:

$LateDayAdjusted_{g,i}$  = calculated start-up reference level for Generator g for hour i in \$ (reflects the applicable start-up reference level ( $StrtUpRef_g$ ), plus the expected net cost of operating on the day following the Dispatch Day)

$StrtUpRef_g$  = the start-up reference level for Generator g in \$ that is in effect at the time the calculation is performed (does not include the expected net cost of operating on the day following the Dispatch Day)

$MinGenRef_{g,i}$  = the minimum generation cost reference level for Generator g for hour i in \$/MW that is in effect at the time the calculation is performed

$BidMinGen_{g,i}$  = Generator g's Day-Ahead minimum operating level for hour i, in MW

$Z_{g,i}$  = the number of hours the Generator must operate during the day following the Dispatch Day in order to complete its minimum run time if it starts in hour i

$SR_{g,h,i}$  = shortfall ratio for Generator g that is bidding to start in hour i which must run during hour h in order to complete its minimum run time, calculated in accordance with Section 23.3.3.4.4.3.2, below

23.3.1.4.4.3.2 Calculation of the shortfall ratio for use in Section 23.3.1.4.4.3.1, above

$SR_{g,h,i}$  = the shortfall ratio calculated for Generator g that is bidding to start in hour i, and that must run during hour h to complete its minimum run time.

In all cases in which Generator g's Day-Ahead minimum operating level deviates from the average of the previous seven days' Day-Ahead minimum operating levels for the same hour by less than 5 MW (i.e., if  $|AvgBidMinGen_{g,h,i} - BidMinGen_{g,i}| < 5MW$ ) or by less than 10% (i.e., if both  $BidMinGen_{g,i} < 1.1 * AvgBidMinGen_{g,h,i}$  and  $BidMinGen_{g,i} > 0.9 * AvgBidMinGen_{g,h,i}$ ),

Where:

$AvgBidMinGen_{g,h,i}$  = The average minimum operating level submitted in the Day-Ahead Market for hour h on the seven days preceding the day containing hour i, in MW, excluding any days for which a minimum operating level was not submitted in the Day-Ahead Market for Generator g, for hour h; and

$BidMinGen_{g,i}$  = The minimum operating level submitted in the Day-Ahead Market for Generator g for hour i, in MW

and in all cases in which  $AvgBidMinGen_{g,h,i}$  cannot be calculated because minimum operating levels were not submitted for Generator g in the Day-Ahead Market for hour h on any of the seven days preceding the day containing hour i, the  $SR_{g,h,i}$  value will be calculated using the primary method. Otherwise, the  $SR_{g,h,i}$  value will be calculated using the alternative method.

#### ***Primary Method of Calculating the Shortfall Ratio***

$$SR_{g,h,i} = 1 - \frac{1}{7} * \sum_{d=1}^7 \frac{LBMP_{g,h,i,d}}{MinGenRef_{g,h,i,d}}$$

Where:

$LBMP_{g,h,i,d}$  = Day ahead LBMP at the location of Generator  $g$  in hour  $h$  of the Day-Ahead Market for the Dispatch Day that precedes the day containing hour  $i$  by  $d$  days, and

$MinGenRef_{g,h,i,d}$  = minimum generation cost reference level for Generator  $g$  in hour  $h$  of the Day-Ahead Market for the Dispatch Day that precedes the day containing hour  $i$  by  $d$  days

***Alternative Method of Calculating the Shortfall Ratio***

$$SR_{g,h,i} = 1 - \frac{AvgLBMP_{g,h,i}}{\left( AvgRefRate_{g,h,i} * \frac{RefRate2_{g,i}}{RefRate1_{g,h,i}} \right)}$$

Where:

$AvgLBMP_{g,h,i}$  = The average of the Day-Ahead LBMPs at the location of Generator  $g$  for hour  $h$  on the seven days preceding the day containing hour  $i$ , in \$/MWh, excluding any days for which a minimum operating level was not submitted in the Day-Ahead Market for Generator  $g$  for hour  $h$

$AvgRefRate_{g,h,i}$  = The average of the minimum generation reference levels for Generator  $g$  in hour  $h$  on the seven days preceding the day containing hour  $i$ , in \$/MWh, excluding any days for which a minimum operating level was not submitted in the Day-Ahead Market for Generator  $g$  for hour  $h$

$RefRate1_{g,h,i}$  = The minimum generation cost reference level in \$/MWh for Generator  $g$  for hour  $i$ , calculated using the most current reference data, and assuming that the minimum operating level submitted in the Day-Ahead Market for Generator  $g$  in hour  $i$  corresponds to the MWs reflected in the  $AvgBidMinGen_{g,h,i}$

$RefRate2_{g,i}$  = The minimum generation cost reference level in \$/MWh for Generator  $g$  for hour  $i$ , calculated using the most current reference data, and incorporating the minimum operating level submitted in the Day-Ahead Market for Generator  $g$  in hour  $i$  that corresponds to the MWs reflected in the  $BidMinGen_{g,i}$

Notwithstanding the above, in all cases where the denominator of the equation for calculating  $SR_{g,h,i}$  is not greater than zero,  $SR_{g,h,i}$  shall be set to zero, under both the primary and alternative methods.

23.3.1.4.4.4 The methods specified in Section 23.3.1.4.2.

23.3.1.4.5 The ISO is not required to calculate real-time reference levels for the three Operating Reserve products (Spinning Reserve, 10-Minute Non-Synchronized Reserves and 30-Minute Reserves) because Generators or Aggregations that are

capable of providing these products and that are submitting Bids into the Real-Time Market are automatically assigned a real-time Operating Reserves Availability Bid of zero for the amount of Operating Reserves they are capable of providing.

The ISO shall calculate real-time reference levels for Regulation Capacity in accordance with Sections 23.3.1.4.1.1, 23.3.1.4.1.3 or 23.3.1.4.2 of these Mitigation Measures. The ISO shall calculate real-time reference levels for Regulation Movement in accordance with Sections 23.3.1.4.1.3 or 23.3.1.4.2.1 of these Mitigation Measures and shall not calculate real-time Reference levels for Regulation Movement in accordance with Section 23.3.1.4.1.1.

The ISO shall calculate Day-Ahead reference levels for the three Operating Reserves products in accordance with Sections 23.3.1.4.1.1, 23.3.1.4.1.3 or 23.3.1.4.2 of these Mitigation Measures. The ISO shall calculate Day-Ahead reference levels for Regulation Capacity in accordance with Sections 23.3.1.4.1.1, 23.3.1.4.1.3 or 23.3.1.4.2 of these Mitigation Measures. The ISO shall calculate Day-Ahead reference levels for Regulation Movement in accordance with Sections 23.3.1.4.1.3 or 23.3.1.4.2.1 of these Mitigation Measures and shall not calculate Day-Ahead Reference levels for Regulation Movement in accordance with Section 23.3.1.4.1.1.

23.3.1.4.6      Reflecting Fuel Costs in Reference Levels. The ISO shall use the best fuel cost information available to it to adjust reference levels to reflect appropriate fuel costs.



23.3.1.4.6.1 ISO Reporting Obligation. If the ISO did not utilize the best fuel cost information available to it when it adjusted reference levels to reflect appropriate fuel costs, and the ISO's failure to utilize the best fuel cost information available to it affected market clearing prices or had an impact on guarantee payments that cannot be corrected, then the ISO shall report any market clearing price and uncorrected guarantee payment impacts to FERC staff and to its Market Participants. The ISO is not required to report, or to otherwise act, if no market impact is identified.

23.3.1.4.6.2 Market Parties shall monitor Generator or Aggregations reference levels and shall endeavor to timely (as that term is defined in Section 23.3.1.4.6.8 below) contact the ISO to request an adjustment to a Generator's or an Aggregation's reference level(s) when the Generator's or Aggregation's fuel type or fuel price change.

23.3.1.4.6.2.1 Subject to the exceptions set forth in Section 23.3.1.4.6.2.1.2 below, the ISO shall not permit charges for unauthorized natural gas use to be included as a component in the development of a Generator's or an Aggregation's reference levels and Market Parties shall not be eligible to recover costs associated with unauthorized natural gas use.

23.3.1.4.6.2.1.1 What constitutes "unauthorized" natural gas use is specified in each natural gas pipeline's or local distribution company's ("LDC's") applicable tariff, rate schedule or customer contract. Unauthorized natural gas use may result from, but is not limited to, the following circumstances: (i) consumption of natural gas in violation of the terms of an Operational Flow Order ("OFO") issued

by the relevant natural gas LDC or pipeline; (ii) violation of instructions issued by the relevant natural gas LDC or pipeline restricting consumption of natural gas or use of natural gas imbalance service, when such instructions are issued consistent with the LDC's or pipeline's authority under a tariff, rate schedule or contract; (iii) consumption of natural gas during a period of authorized interruption of service by the relevant natural gas LDC or pipeline, determined in accordance with the terms of the applicable tariff, rate schedule or contract; or (iv) use of natural gas balancing services that are explicitly identified in the relevant natural gas LDC's or pipeline's applicable tariff, rate schedule or contract as unauthorized use or penalty gas.

23.3.1.4.6.2.1.2 If and to the extent a Market Party has obtained specific authorization from the relevant natural gas LDC or pipeline to use gas that would otherwise be unauthorized, such use shall not be considered unauthorized use by the ISO. Market Parties shall make every effort to clearly document authorization they obtain from the LDC or pipeline. Documentation obtained after the fact will be considered.

23.3.1.4.6.3 Screening of fuel type and fuel price information. The ISO may use automated processes and/or require manual review of fuel type and fuel price information submitted by Market Parties to test the accuracy of the information submitted in order to prevent market clearing prices and guarantee payments from being incorrectly calculated.

23.3.1.4.6.4 Consistent with the rules specified in this Section 23.3.1.4.6 of the Mitigation Measures and the procedures that the ISO develops to implement these

rules, Market Parties shall notify the ISO of changes in fuel type or fuel price by (i) submitting revised fuel type or fuel price information to the ISO's Market Information System along with the Generator's or Aggregation's Bid(s), or (ii) by directly contacting the ISO to request a reference level update consistent with ISO procedures, or (iii) by utilizing both of the available notification methods.

Revised fuel type or fuel price information that exceeds, or is rejected based upon, the thresholds that the ISO uses to automatically screen fuel type or fuel price information that is submitted to the ISO's Market Information System along with a Generator's or an Aggregation's Bid(s) shall be submitted by directly contacting the ISO to request a reference level update, consistent with ISO procedures.

23.3.1.4.6.4.1 Exception—changes in fuel price or fuel type that are offered to support Incremental Energy or Minimum Generation Bids that exceed \$1,000/MWh must be submitted in accordance with Section 23.7.3 (for a Generator) or Section 23.7.4 (for a Demand Side Resource) of these Mitigation Measures.

23.3.1.4.6.5 Following the completion of the ISO's automated and/or manual screening processes, the ISO shall use fuel type and fuel price information that Market Parties or their representatives submit to develop Generator or Aggregation reference levels unless (i) the information submitted is inaccurate, or (ii) the information was not timely submitted, and the Market Party's failure to timely submit the information is not excused by the ISO in accordance with Section 23.3.1.4.6.8 below, or (iii) consistent with Section 23.3.1.4.6.9 below.

23.3.1.4.6.6 The ISO may not always have sufficient time to complete its screening of proposed fuel type or fuel price changes prior to the relevant Day-Ahead Market

day or Real-Time Market hour. *If* fuel type or fuel price information (i) is timely submitted or, where untimely, the submission of fuel type or fuel price information is excused in accordance with Section 23.3.1.4.6.8 below, and (ii) the fuel type or fuel price information that the Market Party submitted is proven to have been accurate or to have understated the actual cost incurred for that component, and (iii) the Bid(s) were tested using reference levels that reflected outdated fuel type and/or fuel price information and the Bid(s) were mitigated or a sanction was imposed pursuant to Section 23.4.3 of these Mitigation Measures, *then* the ISO shall (a) re-perform any test(s) that resulted in a sanction being imposed pursuant to Section 23.4.3 of these Mitigation Measures, using the accurate fuel type and/or fuel price information and use the revised results to calculate the appropriate sanction (if any), and (b) determine if the Bids for the Generator or Aggregation would have failed the relevant conduct test(s) if accurate fuel type and/or fuel price information had been used to develop reference levels. The ISO shall then restore any original (as-submitted) Bid(s) that would not have failed the relevant conduct test(s) if accurate fuel type and/or fuel price information had been used to develop the Generator's or Aggregation's reference levels, and use the restored Bid(s) to determine a settlement. Otherwise the ISO shall use the Generator's or Aggregation's correct or corrected reference level(s) to determine a settlement.

23.3.1.4.6.7 The ISO shall publicly post the thresholds it employs to automatically screen fuel type and fuel price information that is submitted to the ISO's Market Information System for potentially inaccurate fuel type and fuel price data inputs.

23.3.1.4.6.8 For purposes of this Section 23.3.1.4.6, “timely” notice or submission to the Real-Time Market shall mean the submission of fuel type and/or fuel price information using the methods specified in Section 23.3.1.4.6.4 of these Mitigation Measures prior to market close for the relevant Real-Time Market hour. For purposes of this Section 23.3.1.4.6, “timely” notice or submission to the Day-Ahead Market shall mean the submission of fuel type and/or fuel price information using the methods specified in Section 23.3.1.4.6.4 of these Mitigation Measures at least 15 minutes prior to the close of the Day-Ahead Market (*i.e.*, by 4:45 a.m.). Market Parties are not expected to submit invoices or other supporting data with their Day-Ahead Market or Real-Time Market fuel type and fuel price information, but are expected to retain invoices and other supporting data consistent with the data retention requirements set forth in the Plan, and to be able to produce such information within a reasonable timeframe when asked to do so by the ISO or by its Market Monitoring Unit.

It may not always be possible for a Market Party to timely update a Generator’s or Aggregation’s fuel type or fuel price to reflect unexpected real-time changes or events in advance of the first affected market-hour. Upon a showing of extraordinary circumstances, the ISO may retroactively reflect in Real-Time Market reference levels fuel type or fuel price information that was not timely submitted by a Market Party. While it should ordinarily be possible for a Market Party to timely submit updated fuel type and fuel price information for use in developing a Generator’s or an Aggregation’s Day-Ahead Market reference levels, the ISO may retroactively accept and utilize late-submitted Day-Ahead

Market fuel type or fuel price information upon a showing of extraordinary circumstances.

23.3.1.4.6.8.1 Exception—changes in fuel price or fuel type that are offered to support Incremental Energy or Minimum Generation Bids that exceed \$1,000/MWh must be submitted in accordance with the submission deadlines specified in Section 23.7.3 (for a Generator) or Section 23.7.4 (for a Demand Side Resource) of these Mitigation Measures.

23.3.1.4.6.9 If (i) the ISO determines, following consultation with the Market Party and review by the Market Monitoring Unit, that the Market Party or its representative has submitted inaccurate fuel type or fuel price information that was biased in the Market Party's favor, or (ii) if a Market Party is subject to a penalty or sanction under Section 23.4.3.3.3 of these Mitigation Measures for submitting inaccurate fuel price or fuel type information, *then* the ISO shall cease using the fuel type and fuel price information submitted to the ISO's Market Information System along with the Generator's or Aggregation's Bid(s) to develop reference levels for the affected Generator(s) or Aggregation(s) in the relevant (Day-Ahead or real-time) market for the duration(s) set forth below, unless the Market Party demonstrates to the ISO that the questioned conduct is consistent with competitive behavior.

23.3.1.4.6.9.1 The first time the ISO ceases using the fuel type and fuel price information submitted to the ISO's Market Information System along with the Bid(s) for a Generator or an Aggregation to develop Day-Ahead or real-time reference levels for that Generator or Aggregation, it shall do so for 30 days. The 30-day period

shall start two business days after the date that the ISO provides written notice of its determination that the application of mitigation is required.

23.3.1.4.6.9.2 Subject to Section 23.3.1.4.6.9.3 below, the second time the ISO ceases using the fuel type and fuel price information submitted to the ISO's Market Information System along with the Bid(s) for a Generator or an Aggregation to develop Day-Ahead or real-time reference levels for that Generator or an Aggregation, it shall do so for 60 days. The 60-day period shall start two business days after the date that the ISO provides written notice of its determination that the application of mitigation is required. Subject to Section 23.3.1.4.6.9.3 below, any subsequent time the ISO ceases using the fuel type and fuel price information submitted to the ISO's Market Information System along with the Bid(s) for a Generator or an Aggregation to develop Day-Ahead or real-time reference levels for that Generator or Aggregation, it shall do so for 120 days. The 120-day period shall start two business days after the date that the ISO provides written notice of its determination that the application of mitigation is required.

23.3.1.4.6.9.3 If the bidders of a Generator or an Aggregation that has previously been mitigated under this Section 23.3.1.4.6.9 becomes and remains continuously eligible to submit fuel type and fuel price information in the Day-Ahead or Real-Time Market (as appropriate) for a period of one year or more, then the ISO shall apply the mitigation measure set forth in Section 23.3.1.4.6.9 of the Mitigation Measures as if the Generator or Aggregation had not previously been subject to the mitigation measure.

23.3.1.4.6.9.4 Market Parties that transfer, sell, assign, or grant to another Market Party the right or ability to Bid a Generator or an Aggregation that is subject to the mitigation measure described in this Section 23.3.1.4.6.9 are required to inform the new Market Party that the Generator or Aggregation has been mitigated under this measure, and to inform the new Market Party of the expected duration of such mitigation.

23.3.1.4.6.9.5 For purposes of this Section 23.3.1.4.6.9, submitted fuel type information shall be considered biased in a Market Party's favor if (a) the Market Party submitted revised fuel type information for a Generator or an Aggregation for at least 100 hours during the previous 90 days, and (b) for at least one hour the fuel type that a Market Party submits for the Generator or Aggregation is not the most economic fuel type available to the Generator or the relevant component(s) of the Aggregation, taking into consideration fuel availability, operating conditions, and relevant regulatory or reliability requirements, and (c) as a result of the change(s) in fuel type, the fuel prices that the ISO uses to develop reference levels for a Generator or an Aggregation exceeded the fuel price that the ISO would have used to develop reference levels for that Generator or Aggregation by greater than the higher of 10% or \$0.50/MMBtu, on average, over the previous 90 days. For purposes of calculating the average, only hours in which the Market Party changed the Generator's or Aggregation's fuel type to a more expensive fuel type will be considered. The Day-Ahead and Real-Time Markets shall be considered separately for purposes of this analysis.



23.3.1.4.6.9.6 For purposes of this Section 23.3.1.4.6.9, submitted fuel price information shall be considered biased in a Market Party's favor if (a) the Market Party submitted revised fuel price information for a Generator or an Aggregation for at least 100 hours during the previous 90 days, and (b) the fuel price that the Market Party submitted to the ISO's Market Information System for use in developing reference levels for a Generator or an Aggregation exceeded the greater of the actual fuel price (as substantiated by supplier quotes or invoices) or the ISO's indexed fuel price, by greater than the higher of 10% or \$0.50/MMBtu, on average, over the previous 90 days. For purposes of calculating the average, only hours in which the fuel price submitted exceeds the ISO's indexed fuel price will be considered. The Day-Ahead and Real-Time Markets shall be considered separately for purposes of this analysis.

23.3.1.4.6.9.7 The responsibilities of the Market Monitoring Unit that are addressed in Section 23.3.1.4.6.9 of the Mitigation Measures are also addressed in Section 30.4.6.2.3 of the Plan.

23.3.1.4.6.10 In order to adjust (i) Bid-based incremental energy, minimum generation and start-up reference levels, and (ii) LBMP-based incremental energy and minimum generation reference levels to more accurately reflect fuel costs, the ISO may calculate distinct Bid- and LBMP-based reference levels for each fuel type or blend of fuel types that a Generator or an Aggregation is capable of burning, and shall fuel index each of the distinct Bid- or LBMP-based reference levels that it calculates for fuel types that are amenable to fuel indexing. Where a Generator or an Aggregation can draw on multiple natural gas sources that each

have distinct, posted, market clearing prices, the ISO may calculate distinct Bid-Based or LBMP-based reference levels for each such available supply source.

23.3.1.4.7 Except as otherwise authorized in accordance with Section 23.3.1.4.6.8

above, Market Parties shall timely report significant changes to the cost components used to develop their Generator's or Aggregation's reference levels to the ISO in order to permit the revised costs to be timely reflected in the Generator or Aggregation reference levels. However, if the ISO uses published index prices to fuel index a Generator's reference level when that Generator or Aggregation is burning a fuel type that is amenable to fuel indexing (which may include a blend of two indexed fuel types), the Market Party is not required to report fuel prices that are less than the published index price that the ISO relies on.

23.3.1.4.8 Reflecting opportunity costs in Reference Levels. The ISO shall use the information available to it to adjust reference levels to reflect appropriate opportunity costs.

23.3.1.4.8.1 Prohibition of duplicative and evasive cost submissions and Bids. Costs that are submitted or Bid as fuel costs shall not also be submitted or Bid as opportunity costs. A cost shall not be submitted or Bid in two parts, as both a fuel costs and an opportunity cost, in order to evade applicable screening thresholds. Fossil generators shall not submit or Bid fuel costs, including but not limited to balancing costs, as opportunity costs. Withdrawal-Eligible Generators and Aggregations containing Withdrawal Eligible Generators shall not submit or Bid the cost they expect to incur to withdraw Energy as a fuel cost.

If the ISO identifies a potentially duplicative or evasive Bid or cost submission that appears to violate this prohibition, it shall inform the Market Monitoring Unit of the potential Market Violation.

23.3.1.4.8.2 ISO Reporting Obligation. If the ISO did not adjust reference levels to reflect timely (as that term is defined in Section 23.3.1.4.8.9 below) submitted, appropriate opportunity costs, and the ISO's failure to adjust reference levels to reflect such opportunity costs affected market clearing prices or had an impact on guarantee payments that cannot be corrected, then the ISO shall report any market clearing price and uncorrected guarantee payment impacts to FERC staff and to its Market Participants. The ISO is not required to report, or to otherwise act, if no market impact is identified.

23.3.1.4.8.3 Market Parties shall monitor Generator or Aggregation reference levels and shall endeavor to timely (as that term is defined in Section 23.3.1.4.8.9 below) contact the ISO to request an adjustment to a Generator's or an Aggregation's reference level(s) when changes in opportunity costs are expected to impact the Generator's or Aggregation's reference levels.

23.3.1.4.8.4 Screening of opportunity cost submissions. The ISO may use automated processes and/or require manual review of opportunity cost submissions by Market Parties in order to prevent market clearing prices and guarantee payments from being incorrectly calculated.

23.3.1.4.8.5 Consistent with the rules specified in this Section 23.3.1.4.8 of the Mitigation Measures and the procedures that the ISO develops to implement these rules, Market Parties shall notify the ISO of changes in opportunity costs by

(i) submitting revised opportunity cost information to the ISO's Market Information System along with the Generator's or Aggregation's Bid(s), or (ii) by directly contacting the ISO to request a reference level update consistent with ISO procedures, or (iii) by utilizing both of the available notification methods. Revised opportunity cost information that exceeds, or is rejected based upon, the thresholds that the ISO uses to automatically screen opportunity cost information that is submitted to the ISO's Market Information System along with a Generator's or an Aggregation's Bid(s) shall be submitted by directly contacting the ISO to request a reference level update, consistent with ISO procedures.

23.3.1.4.8.6 Following the completion of the ISO's automated and/or manual screening processes, the ISO shall use opportunity cost information that Market Parties or their representatives submit to develop Generator or Aggregation reference levels unless (i) the information submitted is inaccurate, or (ii) the information was not timely submitted, and the Market Party's failure to timely submit the information is not excused by the ISO in accordance with Section 23.3.1.4.8.9 below.

23.3.1.4.8.7 The ISO may not always have sufficient time to complete its screening of proposed opportunity cost changes prior to the relevant Day-Ahead Market day or Real-Time Market hour. *If* opportunity cost information (i) is timely submitted or, where untimely, the submission is excused in accordance with Section 23.3.1.4.8.9 below, and (ii) the opportunity cost information that the Market Party submitted is proven to have been accurate or to have understated the actual cost incurred for that component, and (iii) the Bid(s) were tested using reference levels that reflected outdated opportunity cost information and the Bid(s) were mitigated

or a sanction was imposed pursuant to Section 23.4.3 of these Mitigation Measures, *then* the ISO shall (a) re-perform any test(s) that resulted in a sanction being imposed pursuant to Section 23.4.3 of these Mitigation Measures, using the accurate opportunity cost information and use the revised results to calculate the appropriate sanction (if any), and (b) determine if the Bids for the Generator or Aggregation would have failed the relevant conduct test(s) if accurate opportunity cost information had been used to develop reference levels. The ISO shall then restore any original (as-submitted) Bid(s) that would not have failed the relevant conduct test(s) if accurate opportunity cost information had been used to develop the Generator's or Aggregation's reference levels, and use the restored Bid(s) to determine a settlement. Otherwise the ISO shall use the Generator's or Aggregation's correct or corrected reference level(s) to determine a settlement.

23.3.1.4.8.8 The ISO shall publicly post the thresholds it employs to automatically screen opportunity cost information that is submitted to the ISO's Market Information System for inputs that require manual review before they can be permitted to take effect.

23.3.1.4.8.9 For purposes of this Section 23.3.1.4.8, "timely" notice or submission to the Real-Time Market shall mean the submission of opportunity cost information using the methods specified in Section 23.3.1.4.8.5 of these Mitigation Measures prior to market close for the relevant Real-Time Market hour. For purposes of this Section 23.3.1.4.8, "timely" notice or submission to the Day-Ahead Market shall mean the submission of opportunity cost information using the methods specified in Section 23.3.1.4.8.5 of these Mitigation Measures prior to the close of

the Day-Ahead Market. Market Parties are not expected to submit supporting data with their Bids that include revised opportunity cost information, but are expected to retain a record of how the submitted opportunity cost was determined and other supporting data consistent with the data retention requirements set forth in the Plan, and to be able to produce such information within a reasonable timeframe when asked to do so by the ISO or by its Market Monitoring Unit.

It may not always be possible for a Market Party to timely update a Generator's or an Aggregation's opportunity cost to reflect unexpected real-time changes or events in advance of the first affected market-hour. Upon a showing of extraordinary circumstances, the ISO may retroactively reflect in Real-Time Market reference levels opportunity cost information that was not timely submitted by a Market Party. While it should ordinarily be possible for a Market Party to timely submit updated opportunity cost information for use in developing a Generator's or an Aggregation's Day-Ahead Market reference levels, the ISO may retroactively accept and utilize late-submitted Day-Ahead Market opportunity cost information upon a showing of extraordinary circumstances.

### **23.3.2 Material Price Effects or Changes in Guarantee Payments**

#### **23.3.2.1 Market Impact Thresholds**

In order to avoid unnecessary intervention in the ISO Administered Markets, Mitigation Measures shall not be imposed unless conduct identified as specified above (i) causes or contributes to a material change in one or more prices in an ISO Administered Market, or (ii) substantially increases guarantee payments to participants in the New York Electric Market.

Initially, the thresholds to be used by the ISO to determine a material price effect or change in guarantee payments shall be:

23.3.2.1.1 an increase of 200 percent or \$100 per MWh, whichever is lower, in the hourly Day-Ahead or Real-Time Energy LBMP at any location, or of any other price in an ISO Administered Market; or

23.3.2.1.1.1 for uneconomic production or uneconomic withdrawal, a change (*i.e.*, the absolute value of the difference) of 200 percent or \$100 per MWh, whichever is lower, in the hourly Day-Ahead Energy LBMP, Real-Time Energy LBMP, or the Congestion Component of the Day-Ahead LBMP or the Real-Time LBMP at any location. Provided, however, the ISO shall not consider a price change of less than \$25 per MWh a material price effect for uneconomic production or uneconomic withdrawal; or

23.3.2.1.2 an increase of 200 percent, or 50 percent for Generators or Aggregations in a Constrained Area in Bid Production Cost guarantee payments to a Market Party for a Generator or an Aggregation for a day; or

23.3.2.1.2.1 for uneconomic production or uneconomic withdrawal, an increase of 200 percent, or 50 percent for Generators in a Constrained Area, in Bid Production Cost guarantee payments or Day-Ahead Margin Assurance Payments to a Market Party or to an Affiliate for a Generator for a day; or

23.3.2.1.3 for a Constrained Area Generator or Aggregation subject to either a Real-Time Market or Day-Ahead Market conduct threshold, as specified above in Sections 23.3.1.1.1, 23.3.1.2.2.1, or 23.3.1.2.2.3: for all Constrained Hours (as defined in Section 23.3.1.2.2.1 for the Real-Time Market and in

Section 23.3.1.2.2.3 for the Day-Ahead Market) for the unit being Bid, a threshold determined in accordance with the formula specified in Section 23.3.1.2.2.1 for the Real-Time Market or Section 23.3.1.2.2.3 for the Day-Ahead Market.

#### **23.3.2.2 Price Impact Analysis**

23.3.2.2.1 When it has the capability to do so, the ISO shall determine the effect on prices or guarantee payments of questioned conduct through the use of sensitivity analyses performed using the ISO's SCUC, RTC and RTD computer models, and such other computer modeling or analytic methods as the ISO shall deem appropriate following consultation with its Market Monitoring Unit. The responsibilities of the Market Monitoring Unit that are addressed in this section of the Mitigation Measures are also addressed in Section 30.4.6.2.4 of Attachment O.

23.3.2.2.2 Pending development of the capability to use automated market models, the ISO, following consultation with its Market Monitoring Unit, shall determine the effect on prices or guarantee payments of questioned conduct using the best available data and such models and methods as they shall deem appropriate. The responsibilities of the Market Monitoring Unit that are addressed in this section of the Mitigation Measures are also addressed in Section 30.4.6.2.5 of Attachment O.

23.3.2.2.3 The ISO shall implement automated procedures within the SCUC for Constrained Areas, and within RTC for Constrained Areas. Such automated procedures will: (i) determine whether any Day-Ahead or Real-Time Energy Bids, including start-up costs Bids and Minimum Generation Bids but excluding



Ancillary Services Bids and Bids that only violate the conduct thresholds specified in Sections 23.3.1.2.1.1.2(b) or 23.3.1.2.2.6(b) of these Mitigation Measures, that have not been adequately justified to the ISO exceed the thresholds for economic withholding specified in Section 23.3.1.2 above; and, if so, (ii) determine whether such Bids would cause material price effects or changes in guarantee payments as specified in Section 23.3.2.1.

23.3.2.2.4 The ISO shall forgo performance of the additional SCUC and RTC passes necessary for automated mitigation of Bids in a given Day-Ahead Market or Real-Time Market if evaluation of unmitigated Bids results in prices at levels at which it is unlikely that the thresholds for Bid mitigation will be triggered.

#### **23.3.2.3 Section 205 Filings**

The ISO shall make a filing under § 205 with the Commission seeking authorization to apply an appropriate mitigation measure to conduct that departs significantly from the conduct that would be expected under competitive market conditions but does not rise to the thresholds specified in Sections 23.3.1.1 through 23.3.1.3 above if that conduct has a significant effect on market prices or guarantee payments as specified below, unless the ISO determines, from information provided by the Market Party or Parties (which may include a Demand Side Resource participating in the Operating Reserves or Regulation Service Markets) that would be subject to mitigation, or from other information available to the ISO that the conduct and associated price or guarantee payment effect(s) are attributable to legitimate competitive market forces or incentives. For purposes of this section, conduct shall be deemed to have an effect on market prices or guarantee payments that is significant if it exceeds one of the following thresholds:

23.3.2.3.1 an increase of 100 percent in the hourly day-ahead or real-time energy

LBMP at any location, or of any other price in an ISO Administered Market; or

23.3.2.3.2 an increase of 100 percent in Bid Production Cost guarantee payments to a

Market Party for a Generator or an Aggregation for a day, or an increase of 100

percent in any other guarantee payment over the time period used by the ISO to

calculate the guarantee payment.

### **23.3.3 Consultation with a Market Party**

#### **23.3.3.1 Consultation Process**

23.3.3.1.1 *Consultation initiated by the ISO to determine if mitigation is appropriate:*

Applies to Market-Party-specific, Aggregation-specific and/or Generator-specific mitigation, but not to mitigation that is applied pursuant to Sections 23.3.1.2.3, 23.3.2.2.3, or 23.5.2 of these mitigation measures. If through the application of an appropriate index or screen or other monitoring of market conditions, conduct is identified that (i) exceeds an applicable threshold, and (ii) has a material effect, as specified above, on one or more prices or guarantee payments in an ISO Administered Market, the ISO shall, as and to the extent specified in Attachment O or in Section 23.3.3.2 of these Mitigation Measures, contact the Market Party engaging in the identified conduct to request an explanation of the conduct.

23.3.3.1.2 *Consultation initiated by a Market Party when it anticipates that its Generator's or Aggregation's marginal costs or other Bid parameters may exceed the applicable reference level(s) by more than the relevant threshold(s).* If a Market Party anticipates submitting Bids in a market administered by the ISO that will exceed the thresholds specified in Section 23.3.1 above for identifying conduct inconsistent with competition, the Market Party

may contact the ISO to provide an explanation of any legitimate basis for any such changes in the Market Party's Bids.

23.3.3.1.3 *Results of consultation process addressing Bids.* If a Market Party's explanation of the reasons for its bidding indicates to the satisfaction of the ISO that the questioned conduct is consistent with competitive behavior, no further action will be taken. A preliminary determination by the ISO shall be provided to the Market Monitoring Unit for its review and comment.

23.3.3.1.4 *Consultation initiated by a Market Party regarding reference levels.* Upon request, the ISO shall consult with a Market Party or its representative with respect to the information and analysis used to determine reference levels under Section 23.3.1.4 for that Market Party's Generator(s) or Aggregation(s). If cost data or other information submitted by a Market Party's Generator(s) or Aggregation(s) indicates to the satisfaction of the ISO that the reference levels for that Market Party should be changed, revised reference levels shall be proposed by the ISO, communicated to the Market Monitoring Unit for its review and comment and, following the ISO's consideration of any recommendations that the Market Monitoring Unit is able to timely provide, communicated to the Market Party, and implemented by the ISO as soon as practicable. Changes to the reference levels addressed pursuant to the terms of this Section 23.3.3.1.4 shall be implemented on a going-forward basis commencing no earlier than the date that the Market Party's consultation request is received. The responsibilities of the Market Monitoring Unit that are addressed in this section of the Mitigation Measures are also addressed in Section 30.4.6.2.6 of Attachment O.

23.3.3.1.5 *Information required to support consultation regarding Bids and reference levels.* Market Parties shall ensure that the information they submit to the ISO,

including but not limited to fuel price and fuel type information, is accurate. Except as set forth in Section 23.3.1.4.6.8, the ISO may not retroactively revise a reference level to reflect additional fuel costs if a Market Party or its representative did not timely submit accurate fuel cost information. Unsupported speculation by a Market Party does not present a valid basis for the ISO to determine that Bids that a Market Party submitted are consistent with competitive behavior, or to determine that submitted costs are appropriate for inclusion in the ISO's development of reference levels. Consistent with Sections 30.6.2.2 and 30.6.3.2 of the Plan, the Market Party shall retain the documents and information supporting its Bids and the costs it proposes to include in reference levels.

#### **23.3.3.2 Consultation Requirements**

23.3.3.2.1 The ISO shall make a reasonable attempt to contact and consult with the relevant Market Party about the Market Party's reference level(s) before imposing conduct and impact mitigation, other than conduct and impact mitigation imposed through the automated procedures described in Section 23.3.2.2.3 of these Mitigation Measures. The ISO shall keep records documenting its efforts to contact and consult with the Market Party.

23.3.3.2.2 Consultation regarding both real-time guarantee payment mitigation and mitigation of Generators and Aggregations committed outside the economic evaluation process in the Day-Ahead or Real-Time Markets to protect or preserve system reliability in accordance with Section 23.3.1.2.3 of these Mitigation Measures is addressed in Section 23.3.3.3, below. Consultation regarding Day-Ahead guarantee payment mitigation of Generators and Aggregations, other than mitigation imposed through the automated procedures described in

Section 23.3.2.2.3 of these Mitigation Measures, shall be conducted in accordance with Sections 23.3.3.1 and 23.3.3.2 of these Mitigation Measures.

### **23.3.3.3 Consultation Rules for Real-Time Guarantee Payment Mitigation**

#### **23.3.3.3.1 Real-Time Guarantee Payment Consultation Process**

23.3.3.3.1.1 For real-time guarantee payment mitigation determined pursuant to

Sections 23.3.1.2.1 or 23.3.1.2.2, and 23.3.2.1.2 of these Mitigation Measures, the ISO shall electronically post settlement results informing Market Parties of Bid(s) that failed the real-time guarantee payment impact test. The settlement results posting shall include the adjustment to the guarantee payment and the mitigated Bid(s). The initial posting of settlement results ordinarily occurs two days after the relevant real-time market day.

23.3.3.3.1.2 For real-time guarantee payment mitigation determined pursuant to

Sections 23.3.1.2.1 or 23.3.1.2.2, and 23.3.2.1.2 of these Mitigation Measures, no more than two business days after new or revised real-time guarantee payment impact test settlement results are posted, the ISO will send an e-mail or other notification to all potentially impacted Market Parties that comply with Section 23.3.3.3.1.2.2 of these Mitigation Measures.

23.3.3.3.1.2.1 Although the ISO is authorized to take up to two business days to

provide notification to all potentially impacted Market Parties that comply with Section 23.3.3.3.1.2.2 of these Mitigation Measures, the ISO shall undertake reasonable efforts to provide notification to such Market Parties within one business day after new or revised real-time guarantee payment impact test settlement results are posted.

23.3.3.3.1.2.2 A Market Party that desires to receive notification from the ISO must provide one e-mail address to the ISO for real-time guarantee payment mitigation notices. Each Market Party is responsible for maintaining and monitoring the e-mail address it provides, and informing the ISO of any change(s) to that e-mail address in order to continue to receive e-mail notification. E-mail will be the ISOs primary method of providing notice to Market Parties.

23.3.3.3.1.2.3 Regardless of whether a Market Party chooses to receive notification from the ISO, each Market Party is responsible for reviewing its posted real-time guarantee payment impact test settlement results and for contacting the ISO to request a consultation if and when appropriate.

23.3.3.3.1.3 The following notice rules apply to guarantee payment mitigation determined pursuant to Section 23.3.1.2.3 of these Mitigation Measures.

23.3.3.3.1.3.1 For mitigation of a Generator's or an Aggregation's Minimum Generation Bid, Start-Up Bid or Incremental Energy Bid resulting from its DARU or SRE commitment, the ISO shall send an e-mail or other notification to potentially impacted Market Parties that comply with Section 23.3.3.3.1.2.2 of these Mitigation Measures within ten business days after the relevant market day, and shall undertake reasonable efforts to provide notification to such Market Parties within two business days after the relevant market day. The e-mail shall identify the date of the proposed mitigation and the Bid(s) or Bid components that the NYISO proposes to mitigate for all or part of the relevant market day. As soon as it is able to do so, the NYISO will commence electronically posting settlement results informing Market Parties of Bid(s) that failed the Section

23.3.1.2.3 test and sending an e-mail or other notification to potentially impacted Market Parties that comply with Section 23.3.3.3.1.2.2 of these Mitigation Measures. The settlement results posting shall include the mitigated bid(s). The posting of settlement results ordinarily occurs two days after the relevant real-time market day.

23.3.3.3.1.3.2 For mitigation of a Generator's or an Aggregation's Minimum Generation Bid, Start-Up Bid or Incremental Energy Bid resulting from an Out-of-Merit dispatch above the Generator's DARU or SRE commitment, the ISO shall send an e-mail or other notification to potentially impacted Market Parties that comply with Section 23.3.3.3.1.2.2 of these Mitigation Measures within 10 business days after the relevant market day. The e-mail shall identify the date of the proposed mitigation and the bid(s) or bid components that the NYISO proposes to mitigate for all or part of the relevant market day.

23.3.3.3.1.3.3 For mitigation based on a Generator's minimum run time, start-up time, minimum down time, minimum generation MWs, or maximum number of stops per day, or for mitigation based on temporal or operating parameters related to the withdrawal and injection of Energy by Withdrawal-Eligible Generators or Aggregations containing Withdrawal-Eligible Generator(s), the ISO shall send an e-mail or other notification to potentially impacted Market Parties that comply with Section 23.3.3.3.1.2.2 of these Mitigation Measures within 10 business days after the relevant market day. The e-mail shall identify the date of the proposed mitigation and the conduct failing Bid(s) or Bid components.

23.3.3.3.1.4 Market Parties that want to consult with the ISO regarding real-time guarantee payment impact test results, or regarding mitigation applied in accordance with Section 23.3.1.2.3 of these Mitigation Measures, for a particular market day must submit a written request to initiate the consultation process that specifies the market day and Bid(s) for which consultation is being requested (for purposes of this Section 23.3.3.3.1, a “Consultation Request”).

23.3.3.3.1.4.1 Consultation Requests must be received by the ISO’s customer relations department within 15 business days after the ISO (i) posts new or revised real-time guarantee payment impact test settlement results, or (ii) either posts new or revised real-time guarantee payment impact test settlement results or sends an e-mail informing a Market Party of the results of a test performed pursuant to Section 23.3.1.2.3 of these Mitigation Measures for the relevant market day. Consultation Requests received outside the 15 business day period shall be rejected by the ISO.

23.3.3.3.1.4.2 The ISO may send more than one notice informing a Market Party of the same instance of mitigation. Notices that identify real-time guarantee payment impact test or Section 23.3.1.2.3 mitigation settlement results that are not new (for which the Market Party has already received a notice from the ISO) and that do not reflect revised mitigation (for which the dollar impact of the real-time guarantee payment mitigation has not changed) shall not present an additional opportunity, or temporally extend the opportunity, for the Market Party to initiate consultation.



23.3.3.3.1.4.3 If consultation was timely requested and completed addressing a particular set of real-time guarantee payment impact test results, or addressing a particular instance of mitigation applied in accordance with Section 23.3.1.2.3 of these Mitigation Measures, a Market Party may not again request consultation regarding the same real-time guarantee payment impact test results, or the same application of Section 23.3.1.2.3 mitigation, unless revised settlement results, that are not due to the previously completed consultation and that change the dollar impact of the relevant instance of mitigation, are posted.

23.3.3.3.1.5 The Consultation Request may include: (i) an explanation of the reason(s) why the Market Party believes some or all of the reference levels used by the ISO for the market day(s) in question are inappropriate, or why some or all of the Market Party's Bids on the market day(s) in question were otherwise consistent with competitive behavior; and (ii) supporting documents, data and other relevant information (collectively, for purposes of this Section 23.3.3.3.1, "Data"), including proof of any cost(s) claimed.

23.3.3.3.1.5.1 Market Parties shall ensure that the information they submit to the ISO, including but not limited to fuel price and fuel type information, is accurate. Except as set forth in Section 23.3.1.4.6.8, the ISO may not retroactively revise a reference level to reflect additional fuel costs if a Market Party or its representative did not timely submit accurate fuel cost information. Except as set forth in Section 23.3.1.4.8.9, the ISO may not retroactively revise a reference level to reflect additional opportunity costs if a Market Party or its representative did not timely submit accurate opportunity cost information.

23.3.3.3.1.6 If the Market Party is not able to provide (i) an explanation of the reason(s) why the Market Party believes some or all of the reference levels used by the ISO for the market day(s) in question are inappropriate, or why some or all of the Market Party's Bids on the market day(s) in question were otherwise consistent with competitive behavior, or (ii) all supporting Data, at the time a Consultation Request is submitted, the Market Party should specifically identify any additional explanation or Data it intends to submit in support of its Consultation Request and provide an estimate of the date by which it will provide the additional explanation or Data to the ISO.

23.3.3.3.1.7 Following the submission of a Consultation Request that satisfies the timing and Bid identification requirements of Section 23.3.3.3.1.4, above, consultation shall be performed in accordance with Section 23.3.3.1 of these Mitigation Measures, as supplemented by the following rules:

23.3.3.3.1.7.1 The ISO shall consult with the Market Party to determine whether the information available to the ISO presents an appropriate basis for (i) modifying the reference levels used to perform real-time guarantee payment mitigation for the market day in question, or (ii) determining that the Market Party's Bid(s) on the market day in question were consistent with competitive behavior. The ISO shall only modify the reference levels used to perform mitigation, or determine that the Market Party's Bid(s) on the market day that is the subject of the Consultation Request were consistent with competitive behavior, if the ISO has in its possession Data that is sufficient to support such a decision.

23.3.3.3.1.7.2 A preliminary determination by the ISO shall be provided to the Market Monitoring Unit for its review and comment, and the ISO shall consider the Market Monitoring Unit's recommendations in reaching its decision. The ISO shall inform the Market Party of its decision, in writing, as soon as reasonably practicable, but in no event later than (i) 50 business days after the new or revised real-time guarantee payment impact test settlement results for the relevant market day were posted, or (ii) 50 business days after the earlier of the posting of new or revised Section 23.3.1.2.3 mitigation settlement results for the relevant market day, or the issuance of an e-mail in accordance with Section 23.3.3.3.1.3, above. If the ISO does not affirmatively determine that it is appropriate to modify the Bid(s) that are the subject of the Consultation Request within 50 business days, the Bid(s) shall remain mitigated. The responsibilities of the Market Monitoring Unit that are addressed in this section of the Mitigation Measures are also addressed in Section 30.4.6.2.7 of Attachment O.

23.3.3.3.1.7.3 The ISO may, as soon as practicable, but at any time within the consultation period, request Data from the Market Party. The Market Party is expected to undertake all reasonable efforts to provide the requested Data as promptly as possible, to inform the ISO of the date by which it expects to provide requested Data, and to promptly inform the ISO if the Market Party does not intend to, or cannot, provide Data that has been requested by the ISO.

23.3.3.3.1.8 This Section 23.3.3.3.1 addresses Consultation Requests. It is not intended to limit, alter or modify a Market Party's ability to submit or proceed

with a billing dispute pursuant to Section 7.4 of the ISO Services Tariff or Section 2.7.4.1 of the ISO OATT.

**23.3.3.3.2 Revising Reference Levels of Certain Generators and Aggregations Committed Out-of-Merit or via Supplemental Resource Evaluation for Conducting Real-Time Guarantee Payment Conduct and Impact Tests and Applying Mitigation in Accordance with Section 23.3.1.2.3 of these Mitigation Measures**

23.3.3.3.2.1 Consistent with and subject to all of the requirements of Section 23.3.3.3.1 of these Mitigation Measures, Generators and Aggregations that (i) are committed Out-of-Merit or via a Supplemental Resource Evaluation after the DAM has posted, and (ii) for which the NYISO has posted real-time guarantee payment impact test settlement results, or identified possible mitigation under Section 23.3.1.2.3 of these Mitigation Measures may contact the ISO within 15 business days after new or revised impact test settlement results are posted, or possible mitigation under Section 23.3.1.2.3 of these Mitigation Measures is identified, to request that the reference levels used to perform the testing and mitigation be adjusted to include any of the following verifiable costs:

23.3.3.3.2.1.1 procuring fuel at prices that exceed the index prices used to calculate the Generator's or Aggregation's reference level;

23.3.3.3.2.1.2 burning a type of fuel or blend of fuels that is not reflected in the Generator's or Aggregation's reference level;

23.3.3.3.2.1.3 permitted gas balancing charges;

23.3.3.3.2.1.4 compliance with operational flow orders;

23.3.3.3.2.1.5 purchasing additional emissions allowances that are necessary to satisfy the Generator's or Aggregation's Supplemental Resource Evaluation or Out-of-Merit schedule; and

23.3.3.3.2.1.6 demonstrated opportunity costs that differ from the opportunity cost used in calculating the Generator's or Aggregation's reference level.

23.3.3.3.2.2 The six categories of verifiable costs specified above shall be used to modify the requesting Generator's or Aggregation's reference level(s) subject to the following prerequisites:

23.3.3.3.2.2.1 the Generator or Aggregation must specifically and accurately identify and document the extraordinary costs it has incurred to operate during the hours of its Supplemental Resource Evaluation or Out-of-Merit commitment; and

23.3.3.3.2.2.2 the costs must not already be reflected in the Generator's or Aggregation's reference levels or be recovered from the ISO through other means.

As soon as practicable after the Market Party demonstrates to the ISO's reasonable satisfaction that one or more of the five categories of extraordinary costs have been incurred, but in no event later than the deadline set forth in Section 23.3.3.3.1.7.2 of these Mitigation Measures, the ISO shall adjust the affected Generator's or Aggregation's reference levels and re-perform the real-time guarantee payment conduct and impact tests, or the Section 23.3.1.2.3 test, as appropriate, for the affected day. Only the reference levels used to perform real-time guarantee payment mitigation and/or mitigation pursuant to Section 23.3.1.2.3 of these Mitigation Measures, will be adjusted.

23.3.3.3.2.3 If, at some point prior to the issuance of a Close-Out Settlement for the relevant service month, the ISO or the Commission determine that some or all of

the costs claimed by the Market Party during the consultation process described above were not, in fact, incurred over the course of the Out-of-Merit or Supplemental Resource Evaluation commitment, or were recovered from the ISO through other means, the ISO shall re-perform the appropriate test(s) using reference levels that reflect the verifiable costs that the Generator or Aggregation incurred and shall apply mitigation if the Generator's or Aggregation's Bids fail conduct and impact, or the Section 23.3.1.2.3 test, at the corrected reference levels.

23.3.3.3.2.4 Generators and Aggregations may contact the ISO to request the inclusion of costs other than the six types identified above in their reference levels. The ISO shall consider such requests in accordance with Sections 23.3.1.4, or 23.3.3.3.1 of these Mitigation Measures, as appropriate.

**25      Attachment J – Determination of Day-Ahead Margin Assurance Payments and  
Import Curtailment Guarantee Payments**

## **25.1 Introduction**

If a Supplier that is eligible pursuant to Section 25.2 of this Attachment J buys out of a Day-Ahead Energy, Regulation Service or Operating Reserve schedule in a manner that reduces its Day-Ahead Margin it shall receive a Day-Ahead Margin Assurance Payment, except as noted in Sections 25.2, 25.3, 25.4, and 25.5 of this Attachment J. The purpose of such payments is to protect Suppliers' Day-Ahead Margins associated with real-time reductions after accounting for: (i) any real-time profits associated with offsetting increases in real-time Energy, Regulation Service, or Operating Reserve schedules; and (ii) any Supplier-requested real-time de-rate granted by the ISO.

In addition, a Supplier may be eligible to receive an Import Curtailment Guarantee Payment if its Import is curtailed at the request of the ISO as determined pursuant to Section 25.6 of this Attachment J.



## **25.2 Eligibility for Receiving Day-Ahead Margin Assurance Payments**

### **25.2.1 General Eligibility Requirements for Suppliers to Receive Day-Ahead Margin Assurance Payments**

Subject to Section 25.2.2 of this Attachment J, the following categories of Resources bid by Suppliers shall be eligible to receive Day-Ahead Margin Assurance Payments:

- (i) all Self-Committed Flexible and ISO-Committed Flexible Generators, other than Energy Storage Resources and Aggregations, that are either online and dispatched by RTD or available for commitment by RTC;
- (ii) Demand Side Resources committed to provide Operating Reserves or Regulation Service;
- (iii) any Resource, including an Energy Storage Resource or an Aggregation, that is scheduled out of economic merit order by the ISO in response to an ISO or Transmission Owner system security need or to permit the ISO to procure additional Operating Reserves;
- (iv) any Resource, including an Energy Storage Resource or an Aggregation, internal to the NYCA that is derated or decommitted by the ISO in response to an ISO or Transmission Owner system security need or to permit the ISO to procure additional Operating Reserves;
- (v) Energy Limited Resources or an Aggregation comprised entirely of Energy Limited Resources with an ISO-approved real-time reduction in scheduled output from its Day-Ahead schedule; and
- (vi) Limited Energy Storage Resources and Aggregations comprised entirely of Limited Energy Storage Resources scheduled to provide Regulation Service, as described in Section 25.3.2 of this ISO Services Tariff.

## **25.2.2 Exceptions**

Notwithstanding Section 25.2.1 of this Attachment J, no Day-Ahead Margin Assurance Payment shall be paid to:

25.2.2.1 a Resource, otherwise eligible for a Day-Ahead Margin Assurance

Payment, in hours in which the NYISO has increased the Resource's real-time minimum operating level above the Resource's Day-Ahead Market Energy schedule either: (i) at the Resource's request including through an adjustment to the Resource's self-commitment schedule; or (ii) in order to reconcile the ISO's dispatch with the Resource's actual output or to address reliability concerns that arise because the Resource is not following Base Point Signals; or (iii) an Intermittent Power Resource that depends on wind or solar energy as its fuel.

25.2.2.2 a Resource, otherwise eligible for Day-Ahead Margin Assurance

Payments, in hours in which the NYISO has increased the Resource's real-time minimum operating level at the Resource's request, including through an adjustment to the Resource's self-commitment schedule, above the MW level determined by subtracting the Resource's Day-Ahead Market Regulation Service schedule from its Day-Ahead Market Energy schedule.

25.2.2.3 a Resource, otherwise eligible for Day-Ahead Margin Assurance

Payments, in hours in which the Resource reduces the MW quantity specified in its real-time Regulation Capacity Bid below its Day-Ahead Market Regulation Service schedule.

25.2.2.4 a Generator, otherwise eligible for Day-Ahead Margin Assurance

Payments, for (i) any hour in which the Incremental Energy Bids submitted in the Real-Time Market for that Generator exceed the Incremental Energy Bids

submitted in the Day-Ahead Market, or the mitigated Day-Ahead Incremental Energy Bids where appropriate, for the portion of that Generator's Capacity that was scheduled in the Day-Ahead Market; and (ii) the two hours immediately preceding and the two hours immediately following the hour(s) in which the Incremental Energy Bids submitted in the Real-Time Market for that Generator exceed the Incremental Energy Bids submitted in the Day-Ahead Market, or the mitigated Day-Ahead Incremental Energy Bids where appropriate, for the portion of that Generator's Capacity that was scheduled in the Day-Ahead Market.

25.2.2.5        A Generator that is available for commitment by RTC and otherwise eligible for Day-Ahead Margin Assurance Payments, for (i) any hour in which the Start-Up Bids submitted in the Real-Time Market for that Generator exceed the Start-Up Bids submitted in the Day-Ahead Market, or the mitigated Day-Ahead Start-Up Bids where appropriate, and that Generator was scheduled for Energy in that hour in the Day-Ahead Market; and (ii) the two hours immediately preceding and the two hours immediately following the hour(s) in which the Start-Up Bids submitted in the Real-Time Market for that Generator exceed the Start-Up Bids submitted in the Day-Ahead Market, or the mitigated Day-Ahead Start-Up Bids where appropriate, and that Generator was scheduled for Energy or Regulation Service in that hour in the Day-Ahead Market.

25.2.2.6        A Generator that is available for commitment by RTC and otherwise eligible for Day-Ahead Margin Assurance Payments, for (i) any hour in which the dollar component of the Minimum Generation Bids submitted in the Real-Time Market for that Generator exceed the dollar component of the Minimum

Generation Bids submitted in the Day-Ahead Market, or the dollar component of the mitigated Day-Ahead Minimum Generation Bids where appropriate, and that Generator was scheduled for Energy in that hour in the Day-Ahead Market; and (ii) the two hours immediately preceding and the two hours immediately following the hour(s) in which the dollar component of the Minimum Generation Bids submitted in the Real-Time Market for that Generator exceed the dollar component of the Minimum Generation Bids submitted in the Day-Ahead Market, or the dollar component of the mitigated Day-Ahead Minimum Generation Bids where appropriate, and that Generator was scheduled for Energy in that hour in the Day-Ahead Market.

### **25.3 Calculation of Day-Ahead Margin Assurance Payments**

#### **25.3.1 Formula for Day-Ahead Margin Assurance Payments for Generators and Aggregations, Except for Limited Energy Storage Resources and Aggregations comprised entirely of Limited Energy Storage Resources**

Subject to Sections 25.4 and 25.5 of this Attachment J, Day-Ahead Margin Assurance Payments for Generators and Aggregations, except for Limited Energy Storage Resources and Aggregations comprised entirely of Limited Energy Storage Resources, shall be determined by applying the following equations to each individual Generator or Aggregation using the terms as defined in Section 25.3.4:

$$DMAP_{hu} = \max\left(0, \sum_{i \in h} CDMAP_{iu}\right)$$

where:

$$CDMAP_{iu} = CDMAPen_{iu} + \sum_P CDMAPres_{iup} + CDMAPreg_{iu}$$

##### **25.3.1.1 Energy Contribution for Day-Ahead Margin Assurance Payments**

If the Generator's or Aggregation's (i) Day-Ahead schedule is to inject Energy (*i.e.*, greater than zero MW) and its real-time Energy schedule is lower than its Day-Ahead Energy schedule; or (ii) Day-Ahead schedule is to withdraw Energy (*i.e.*, less than zero MW) and its real-time Energy schedule is greater than its Day-Ahead Energy schedule, then:

$$CDMAPen_{iu} = \left( (DASen_{hu} - LL_{iu}) * RTPen_{iu} - \int_{LL_{iu}}^{DASen_{hu}} DABen_{hu} \right) * \frac{Seconds_i}{3600}$$

If the Generator's or Aggregation's (i) Day-Ahead Energy schedule is to inject Energy (*i.e.*, greater than zero MW) and its real-time Energy schedule is greater than or equal to its Day-Ahead Energy schedule; or (ii) Day-Ahead Energy schedule is to withdraw Energy (*i.e.*, less than zero MW), and its real-time Energy schedule is less than or equal to its Day-Ahead Energy schedule; or (iii) Day-Ahead Energy schedule is for zero MW, then:

$$CDMAPen_{iu} = \min \left[ \left( (DASen_{hu} - UL_{iu}) * RTPen_{iu} + \int_{DASen_{hu}}^{UL_{iu}} RTBen_{iu} \right) * \frac{Seconds_i}{3600}, 0 \right]$$

#### 25.3.1.2 Operating Reserve Contribution for Day-Ahead Margin Assurance Payments

If the Generator's or Aggregation's real-time schedule for a given Operating Reserve product, p, is lower than its Day-Ahead Operating Reserve schedule for that product then:

$$CDMAPres_{iup} = [(DASres_{hup} - RTSres_{iup}) * (RTPres_{iup} - DABres_{hup})] * \frac{Seconds_i}{3600}$$

If the Generator's or Aggregation's real-time schedule for a given Operating Reserve product, p, is greater than or equal to its Day-Ahead Operating Reserve schedule for that product then:

$$CDMAPres_{iup} = [(DASres_{hup} - RTSres_{iup}) * (RTPres_{iup})] * \frac{Seconds_i}{3600}$$

### 25.3.1.3 Regulation Service Contribution for Day-Ahead Margin Assurance Payments

If the Generator's or Aggregation's real-time Regulation Service schedule is less than its Day-Ahead Regulation Service schedule then:

$$CDMAPreg_{iu} = [(DASreg_{hu} - RTSreg_{iu}) * (RTPreg_{iu} - DABreg_{hu})] * \frac{Seconds_i}{3600} + [(-1 * RTMreg_{iu}) * \max(0, RTPreg_{iu} - RTBreg_{iu})]$$

If the Generator's or Aggregation's real-time Regulation Schedule is greater than or equal to the Day-Ahead Regulation Service schedule then:

$$CDMAPreg_{iu} = [(DASreg_{hu} - RTSreg_{iu}) * \max((RTPreg_{iu} - RTBreg_{iu}), 0)] * \frac{Seconds_i}{3600} + [(-1 * RTMreg_{iu}) * \max(0, RTPreg_{iu} - RTBreg_{iu})]$$

## 25.3.2 Formula for Day-Ahead Margin Assurance Payments for Demand Side Resources

### 25.3.2.1 Formula for Day-Ahead Margin Assurance Payment for Demand Side Resources

Subject to Section 25.5 of this Attachment J, Day-Ahead Margin Assurance Payments for Demand Side resources scheduled to provide Operating Reserves or Regulation Service shall be determined by applying the following equations to each individual Demand Side Resource using the terms as defined in Section 25.3.4, except for  $RPI_{iu}$ , which is defined in Section 25.3.2.2:

$$DMAP_{hu} = \max\left(0, \sum_{i \in h} CDMAP_{iu}\right)$$

where:

$$CDMAP_{iu} = \sum_p CDMAPres_{iup} + CDMAPreg_{iu}$$

If the Demand Side Resource's real-time schedule for a given Operating Reserve product, p, is lower than its Day-Ahead Operating Reserve schedule for that product then:

$$CDMAPres_{iup} = [(DASres_{hup} - RTSres_{iup}) * (RTPres_{iup} - DABres_{hup})] * RPI_{iu} * \frac{Seconds_i}{3600}$$

If the Demand Side Resource's real-time schedule for a given Operating Reserve product, p, is greater than or equal to its Day-Ahead Operating Reserve schedule for that product then:

$$CDMAPres_{iup} = [(DASres_{hup} - RTSres_{iup}) * (RTSPres_{iup})] * RPI_{iu} * \frac{Seconds_i}{3600}$$

If the Demand Side Resource's real-time Regulation Service schedule is less than its Day-Ahead Regulation Service schedule then:

$$CDMAPreg_{iu} = [(DASreg_{hu} - RTSreg_{iu}) * (RTPreg_{iu} - DABreg_{hu})] * \frac{Seconds_i}{3600} + [(-1 * RTMreg_{iu}) * \max(0, RTPreg_{iu} - RTBreg_{iu})]$$

If the Demand Side Resource's real-time Regulation Schedule is greater than or equal to the Day-Ahead Regulation Service schedule then:

$$CDMAPreg_{iu} = [(DASreg_{hu} - RTSreg_{iu}) * \max((RTPreg_{iu} - RTBreg_{iu}), 0)] * \frac{Seconds_i}{3600} + [(-1 * RTMreg_{iu}) * \max(0, RTPreg_{iu} - RTBreg_{iu})]$$

### **25.3.2.2 Reserve Performance Index for Demand Side Resource Suppliers of Operating Reserves**

The ISO shall produce a Reserve Performance Index for purposes of calculating a Day Ahead Margin Assurance Payment for a Demand Side Resource providing Operating Reserves. The Reserve Performance Index shall take account of the actual Demand Reduction achieved by the Supplier of Operating Reserves following the ISO's instruction to convert Operating Reserves to Demand Reduction.

The Reserve Performance Index shall be a factor with a value between 0.0 and 1.0 inclusive. For each interval in which the ISO has not instructed the Demand Side Resource to convert its Operating Reserves to Demand Reduction, the Reserve Performance Index shall have a value of one. For each interval in which the ISO has instructed the Demand Side Resource to convert its Operating Reserves to Demand Reduction the Reserve Performance Index shall be calculated pursuant to the following formula, provided however when  $UAG_i$  is zero or less, the Reserve Performance Index shall be set to zero:

$$RPI_{iu} = \min[(UAG_i / ADG_i + .1), 1]$$

Where:

$RPI_{iu}$  = Reserve Performance Index in interval  $i$  for Demand Side Resource  $u$ ;

$UAG_i$  = average actual Demand Reduction for interval  $i$ , represented as a positive generation value; and

$ADG_i$  = average scheduled Demand Reduction for interval  $i$ , represented as a positive generation base point.



### 25.3.3 Formula for Day-Ahead Margin Assurance Payments for Limited Energy Storage Resources and Aggregations comprised entirely of Limited Energy Storage Resources

Day-Ahead Margin Assurance Payments for Limited Energy Storage Resources and Aggregations comprised entirely of Limited Energy Storage Resources (“Aggregation of LESR”) scheduled to provide Regulation Service shall be determined by applying the following equations to each Resource using the terms as defined in Section 25.3.4; *provided, however*, that a Day-Ahead Margin Assurance Payment is payable only for intervals in which the NYISO has reduced the real-time Regulation Service offer (in MWs) of a Limited Energy Storage Resource or an Aggregation of LESR and the NYISO is not pursuing LESR Energy Management for such Resource for such interval, pursuant to ISO Procedures:

If the LESR’s or Aggregation of LESR’s real-time Regulation Service schedule is less than its Day-Ahead Regulation Service schedule and the real-time Regulation Capacity Market Price is greater than the Day-Ahead Regulation Capacity Bid price then:

$$CDMAPreg_{iu} = [(DASreg_{hu} - RTSreg_{iu}) * (RTPreg_{iu} - DABreg_{hu})] * K_p * \frac{Seconds_i}{3600} + [(-1 * RTMreg_{iu}) * \max(0, RTPreg_{iu} - RTBreg_{iu})]$$

If the LESR’s or Aggregation of LESR’s real-time Regulation Service schedule is less than its Day-Ahead Regulation Service schedule and the real-time Regulation Capacity Market price is less than or equal to the Day-Ahead Regulation Capacity Bid price then:

$$CDMAPreg_{iu} = [(DASreg_{hu} - RTSreg_{iu}) * (RTPreg_{iu} - DABreg_{hu})] * \frac{Seconds_i}{3600} + [(-1 * RTMreg_{iu}) * \max(0, RTPreg_{iu} - RTBreg_{iu})]$$

If the LESR’s or Aggregation of LESR’s real-time Regulation Service schedule is greater than or equal to the Day-Ahead Regulation Service schedule then:

$$CDMAPreg_{iu} = [(DASreg_{hu} - RTSreg_{iu}) * \max((RTPreg_{iu} - RTBreg_{iu}), 0)] * \frac{Seconds_i}{3600} + [(-1 * RTMreg_{iu}) * \max(0, RTPreg_{iu} - RTBreg_{iu})]$$

### 25.3.4 Terms Used in this Attachment J

The terms used in the formulas in this Attachment J shall be defined as follows:

$h$  is the hour that includes interval  $i$ ;

$DMAP_{hu}$	=	the Day-Ahead Margin Assurance Payment attributable in any hour $h$ to any Supplier $u$ ;
$CDMAP_{iu}$	=	the contribution of RTD interval $i$ to the Day-Ahead Margin Assurance Payment for Supplier $u$ ;
$CDMAPen_{iu}$	=	the Energy contribution of RTD interval $i$ to the Day-Ahead Margin Assurance Payment for Supplier $u$ ;
$CDMAPreg_{iu}$	=	the Regulation Service contribution of RTD interval $i$ to the Day-Ahead Margin Assurance Payment for Supplier $u$ ;
$CDMAPres_{iup}$	=	the Operating Reserve contribution of RTD interval $i$ to the Day-Ahead Margin Assurance Payment for Supplier $u$ determined separately for each Operating Reserve product $p$ ;
$DASen_{hu}$	=	Day-Ahead Energy schedule for Supplier $u$ in hour $h$ ;
$DASreg_{hu}$	=	Day-Ahead schedule for Regulation Service for Supplier $u$ in hour $h$ ;
$DASres_{hup}$	=	Day-Ahead schedule for Operating Reserve product $p$ , for Supplier $u$ in hour $h$ ;
$DABen_{hu}$	=	Day-Ahead Energy Bid cost for Supplier $u$ in hour $h$ , including the Minimum Generation Bid and Incremental Energy Bids;
$DABreg_{hu}$	=	Day-Ahead Regulation Capacity Bid price for Supplier $u$ in hour $h$ ;
$DABres_{hup}$	=	Day-Ahead Availability Bid for Operating Reserve product $p$ for Supplier $u$ in hour $h$ ;
$RTSen_{iu}$	=	real-time Energy scheduled for Supplier $u$ in interval $i$ , and calculated as the arithmetic average of the 6-second AGC Base Point Signals sent to Supplier $u$ during the course of interval $i$ ;
$RTSreg_{iu}$	=	real-time schedule for Regulation Service for Supplier $u$ in interval $i$ .
$RTSres_{iup}$	=	real-time schedule for Operating Reserve product $p$ for Supplier $u$ in interval $i$ .
$RTBreg_{iu}$	=	real-time Regulation Capacity Bid price for Supplier $u$ in interval $i$ .
$RTBen_{iu}$	=	real-time Energy Bid cost for Supplier $u$ in interval $i$ , including the Minimum Generation Bid and Incremental Energy Bids.
$RTBregm_{iu}$	=	real-time Regulation Movement Bid price for Supplier $u$ in interval $i$ .

$RTMreg_{iu}$  = real-time Regulation Movement MWs for Supplier  $u$  in interval  $i$ ;

$AE_{iu}$  = either, (1) when  $RTSen_{iu}$  is greater than zero MW, average Energy injections plus average Demand Reductions minus average Energy withdrawals by Supplier  $u$  in interval  $i$  but not more than  $RTSen_{iu}$  plus Compensable Overgeneration; or (2) when  $RTSen_{iu}$  is less than or equal to zero MW, average Energy injections plus average Demand Reductions minus average Energy withdrawals by Supplier  $u$  in interval  $i$ ;

$RTPen_{iu}$  = real-time price of Energy at the location of Supplier  $u$  in interval  $i$ ;

$RTPreg_{iu}$  = real-time price of Regulation Capacity at the location of Supplier  $u$  in interval  $i$ ;

$RTPres_{iup}$  = real-time price of Operating Reserve product  $p$  at the location of Supplier  $u$  in interval  $i$ ;

$RTPregm_{iu}$  = real-time Regulation Movement Market Price at the location of Supplier  $u$  in interval  $i$ ;

$LL_{iu}$  = When the Day-Ahead Energy schedule is to inject, given that  $RTSen_{iu} < DASen_{hu}$ , either:

(a) if  $RTSen_{iu} < EOP_{iu}$ , then  $LL_{iu} = \max(\min(\max(RTSen_{iu}, \min(AE_{iu}, EOP_{iu})), DASen_{hu}), 0)$ ; or

(b) if  $RTSen_{iu} \geq EOP_{iu}$ , then  $LL_{iu} = \max(\min(RTSen_{iu}, \max(AE_{iu}, EOP_{iu})), DASen_{hu}), 0)$

When the Day-Ahead Energy schedule is to withdraw, given that  $RTSen_{iu} > DASen_{hu}$ :

$$LL_{iu} = \min(\max(DASen_{hu}, AE_{iu}, EOP_{iu}), RTSen_{iu}, 0)$$

$UL_{iu}$  = When the Day-Ahead Energy schedule is to inject, or the Day-Ahead Energy schedule is zero MW and the real-time Energy schedule is to inject, given that  $RTSen_{iu} \geq DASen_{hu}$ , either:

(a) if  $RTSen_{iu} \geq EOP_{iu} \geq DASen_{hu}$ , then  $UL_{iu} = \min(RTSen_{iu}, \max(AE_{iu}, EOP_{iu}))$ ; or

(b) otherwise, then  $UL_{iu} = \max(RTSen_{iu}, \min(AE_{iu}, EOP_{iu}))$

When the Day-Ahead Energy schedule is to withdraw, or the Day-Ahead Energy schedule is zero MW and the real-time Energy schedule is to withdraw, given that  $RTSen_{iu} \leq DASen_{hu}$ :

$$UL_{iu} = \min(RTSen_{iu}, \max(AE_{iu}, EOP_{iu}))$$

$EOP_{iu}$  = the Economic Operating Point of Supplier  $u$  in interval  $i$  calculated without regard to ramp rates;

$Seconds_i$  = number of seconds in interval  $i$

$KPI_{pi}$  = the factor derived from the Regulation Service Performance index for Resource  $u$  for interval  $i$  as defined in Rate Schedule 3 of this Services Tariff.

## **25.4 Exception for Generators and Aggregations Lagging Behind RTD Base Point Signals**

If an otherwise eligible Generator's or Aggregation's average Actual Energy Injection in an RTD interval (*i.e.*, its Actual Energy Injections averaged over the RTD interval) is less than or equal to its penalty limit for under-generation value for that interval, as computed below, it shall not be eligible for Day-Ahead Margin Assurance Payments for that interval.

The penalty limit for under-generation value is the tolerance described in Section 15.3A.1 of Rate Schedule 3-A of this ISO Services Tariff, which is used in the calculation of the persistent under-generation charge applicable to Generators and Aggregations that are not providing Regulation Service.

## 25.5 Rules Applicable to Supplier Derates

Suppliers that request and are granted a derate of their real-time Operating Capacity, but that are otherwise eligible to receive Day-Ahead Margin Assurance Payments may receive a payment up to a Capacity level consistent with their revised Emergency Upper Operating Limit or Normal Upper Operating Limit, whichever is applicable. The foregoing rule shall also apply to a Generator or Aggregation otherwise eligible for a Day-Ahead Margin Assurance Payment in hours in which the ISO has derated the Generator's or Aggregation's Operating Capacity in order to reconcile the ISO's dispatch with the Generator's or Aggregation's actual output, or to address reliability concerns that arise because the Generator or Aggregation is not following Base Point Signals. If a Supplier's derated real-time Operating Capacity is lower than the sum of its Day-Ahead Energy, Regulation Services, and Operating Reserve schedules then when the ISO conducts the calculations described in Section 25.3 above, the  $DASen$ ,  $DASeg$  and  $DASres_p$  variables will be reduced by  $REDen$ ,  $REDreg$  and  $REDres_p$  respectively.  $REDen$ ,  $REDreg$  and  $REDres_p$  shall be calculated using the formulas below:

$$REDtot_{iu} = \max\left(DASen_{hu} + DASreg_{hu} + \sum_p DASres_{hup} - RTUOL_{iu}, 0\right)$$

$$POTREDen_{iu} = \max(DASen_{hu} - RTSen_{iu}, 0)$$

$$POTREDreg_{iu} = \max(DASreg_{hu} - RTSreg_{iu}, 0)$$

$$POTREDres_{iup} = \max(DASres_{hup} - RTSres_{iup}, 0)$$

$$REDen_{iu} = \left( POTREDen_{iu} / \left( POTREDen_{iu} + POTREDreg_{iu} + \sum_p POTREDres_{iup} \right) \right) * REDtot_{iu}$$

$$REDreg_{iu} = \left( POTREDreg_{iu} / \left( POTREDen_{iu} + POTREDreg_{iu} + \sum_p POTREDres_{iup} \right) \right) * REDtot_{iu}$$

$$REDres_{iup} = \left( POTREDres_{iup} / \left( POTREDen_{iu} + POTREDreg_{iu} + \sum_p POTREDres_{iup} \right) \right) * REDtot_{iu}$$

where:

$RTUOL_{iu}$	=	The real-time Emergency Upper Operating Limit or Normal Upper Operating Limit whichever is applicable of Supplier $u$ in interval $i$
$REDtot_{iu}$	=	The total amount in MW that Day-Ahead schedules need to be reduced to account for the derate of Supplier $u$ in interval $i$
$REDen_{iu}$	=	The amount in MW that the Day-Ahead Energy schedule is reduced for the purposes of calculating the Day-Ahead Margin Assurance Payment for Supplier $u$ in interval $i$
$REDreg_{iu}$	=	The amount in MW that Supplier $u$ 's Day-Ahead Regulation Service schedule is reduced for the purposes of calculating the Day-Ahead Margin Assurance Payment in interval $i$
$REDres_{iup}$	=	The amount in MW that Supplier $u$ 's Day-Ahead Operating Reserve schedule for Operating Reserves product $p$ is reduced for the purposes of calculating the Day-Ahead Margin Assurance Payment in interval $i$
$POTREDen_{iu}$	=	The potential amount in MW that Supplier $u$ 's Day-Ahead Energy schedule could be reduced for the purposes of calculating the Day-Ahead Margin Assurance Payment for Supplier $u$ in interval $i$
$POTREDreg_{iu}$	=	The potential amount in MW that Supplier $u$ 's Day-Ahead Regulation Service schedule could be reduced for the purposes of calculating the Day-Ahead Margin Assurance Payment for Supplier $u$ in interval $i$
$POTREDres_{iup}$	=	The potential amount in MW that Supplier $u$ 's Day-Ahead Operating Reserve Schedule for Operating Reserve product $p$ could be reduced for the purposes of calculating the Day-Ahead Margin Assurance Payment for Supplier $u$ in interval $i$

All other variables are as defined above.

## **25.6 Import Curtailment Guarantee Payments**

### **25.6.1 Eligibility for an Import Curtailment Guarantee Payment for an Import Curtailed by the ISO**

In the event that the Energy injections for an Import scheduled by RTC or RTD at a Proxy Generator Bus, other than a CTS Enabled Proxy Generator Bus, are Curtailed at the request of the ISO, and (i) the real-time Energy Profile MW is equal to or greater than the Day-Ahead Energy Schedule for that interval, and (ii) the real-time Decremental Bid is less than or equal to the default real-time Decremental Bid amount as established by ISO procedures, then the Supplier or Transmission Customer that is subjected to the Curtailment, in addition to the charge for Energy Imbalance, shall be eligible for an Import Curtailment Guarantee Payment as determined in Section 25.6.2 of this Attachment J. Suppliers scheduling Imports at CTS Enabled Proxy Generator Buses shall not be eligible for Import Curtailment Guarantee payments for those Transactions.

### **25.6.2 Formula for an Import Curtailment Guarantee Payment for a Supplier Whose Import Was Curtailed by the ISO**

A Supplier eligible under Section 25.6.1 of this Attachment J shall receive an Import Curtailment Guarantee Payment for its curtailed Energy injections that is equal to the daily sum of the hourly payments which, for each hour of Import  $t$ , is calculated as the greater of the interval payments determined for the hour or zero as seen in the formula below.

Import Curtailment Guarantee Payment to Supplier  $u$  in association with Import  $t$  =

$$\sum_{h=1}^N \max \left( \sum_{i=1}^H (RTLBP_{ti} - \max(DADecBid_{ti}, 0)) * (DAen_{ti} - RTDen_{ti}) * \frac{S_i}{3600}, 0 \right)$$

Where

$N$  = the number of hours in the Dispatch Day

- $H$  = the number of intervals in hour  $h$
- $i$  = the relevant interval in hour  $h$ ;
- $S_i$  = number of seconds in interval  $i$ ;
- $RTLBP_{t,i}$  = the real-time LBMP, in \$/MWh, for interval  $i$  at the Proxy Generator Bus which is the source of the Import  $t$ .
- $DADecBid_{t,i}$  = the Day Ahead Decremental Bid price associated with the Day-Ahead energy schedule, in \$/MWh, for Import  $t$  in hour  $h$  containing interval  $i$ ;
- $DAen_{t,i}$  = the Day Ahead scheduled Energy injections, in MWh, for Import  $t$  in hour  $h$  containing interval  $i$  as determined by Security Constrained Unit Commitment (SCUC); and
- $RTDen_{t,i}$  = the scheduled Energy injections, in MWh, for Import  $t$  in interval  $i$  as determined by Real-Time Dispatch (RTD).